LAMPIRAN A

TABEL PERCOBAAN

Gambar Hasil 10 Percobaan Dengan Nilai R = 1

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	1	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	24.95	0.0062	45	0.952
2	500	2000	1	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	24.95	0.0062	41	0.911
3	500	2000	1	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	24.95	0.0062	42	0.922
4	500	2000	1	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	24.95	0.0062	43	1.024
5	500	2000	1	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	24.95	0.0062	40	0.891
6	500	2000	1	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	24.95	0.0062	49	0.801
7	500	2000	1	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	24.95	0.0062	45	0.911
8	500	2000	1	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	24.95	0.0062	47	1.001
9	500	2000	1	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	24.95	0.0062	48	1.202
10	500	2000	1	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	24.95	0.0062	43	0.922

Gambar Hasil 10 Percobaan Dengan Nilai R = 2

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	2	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	49.91	0.0124	29	1.425
2	500	2000	2	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	49.91	0.0124	29	1.405
3	500	2000	2	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	49.91	0.0124	28	1.305
4	500	2000	2	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	49.91	0.0124	27	1.205
5	500	2000	2	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	49.91	0.0124	21	1.000
6	500	2000	2	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	49.91	0.0124	23	1.105
7	500	2000	2	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	49.91	0.0124	25	1.007
8	500	2000	2	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	49.91	0.0124	29	1.305
9	500	2000	2	0.01	1.5	4	39	39	39	40	156	156	156	160	1.5	0.25	49.91	0.0124	26	1.543
10	500	2000	2	0.01	1.5	4	78	78	79	78	312	312	316	320	1.5	0.25	49.91	0.0124	26	1.424

Gambar Hasil 10 Percobaan Dengan Nilai R = 3

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	16	1.758
2	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	8	1.575
3	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	15	1.678
4	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	8	1.616
5	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	13	1.706
6	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	10	1.497
7	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	20	1.619
8	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	14	1.539
9	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	14	1.656
10	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	14	1.616

Gambar Hasil 10 Percobaan Dengan Nilai R = 4

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	4	0.01	1.5	4	156	156	156	160	624	624	624	640	1.5	0.25	99.83	0.0249	23	2.233
2	500	2000	4	0.01	1.5	4	156	156	156	160	624	624	624	640	1.5	0.25	99.83	0.0249	21	2.333
3	500	2000	4	0.01	1.5	4	156	156	156	160	624	624	624	640	1.5	0.25	99.83	0.0249	22	2.133
4	500	2000	4	0.01	1.5	4	156	156	156	160	624	624	624	640	1.5	0.25	99.83	0.0249	20	1.953
5	500	2000	4	0.01	1.5	4	156	156	156	160	624	624	624	640	1.5	0.25	99.83	0.0249	19	1.933
6	500	2000	4	0.01	1.5	4	156	156	156	160	624	624	624	640	1.5	0.25	99.83	0.0249	21	2.000
7	500	2000	4	0.01	1.5	4	156	156	156	160	624	624	624	640	1.5	0.25	99.83	0.0249	23	2.003
8	500	2000	4	0.01	1.5	4	156	156	156	160	624	624	624	640	1.5	0.25	99.83	0.0249	23	1.837
9	500	2000	4	0.01	1.5	4	156	156	156	160	624	624	624	640	1.5	0.25	99.83	0.0249	20	1.820
10	500	2000	4	0.01	1.5	4	156	156	156	160	624	624	624	640	1.5	0.25	99.83	0.0249	25	1.616

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	5	0.01	1.5	4	194	193	199	200	776	772	796	800	1.5	0.25	123.52	0.0308	28	2.172
2	500	2000	5	0.01	1.5	4	194	193	199	200	776	772	796	800	1.5	0.25	123.52	0.0308	27	2.572
3	500	2000	5	0.01	1.5	4	194	193	199	200	776	772	796	800	1.5	0.25	123.52	0.0308	26	2.272
4	500	2000	5	0.01	1.5	4	194	193	199	200	776	772	796	800	1.5	0.25	123.52	0.0308	28	2.372
5	500	2000	5	0.01	1.5	4	194	193	199	200	776	772	796	800	1.5	0.25	123.52	0.0308	32	2.972
6	500	2000	5	0.01	1.5	4	194	193	199	200	776	772	796	800	1.5	0.25	123.52	0.0308	29	2.572
7	500	2000	5	0.01	1.5	4	194	193	199	200	776	772	796	800	1.5	0.25	123.52	0.0308	28	2.272
8	500	2000	5	0.01	1.5	4	194	193	199	200	776	772	796	800	1.5	0.25	123.52	0.0308	30	2.040
9	500	2000	5	0.01	1.5	4	194	193	199	200	776	772	796	800	1.5	0.25	123.52	0.0308	27	2.072
10	500	2000	5	0.01	1.5	4	194	193	199	200	776	772	796	800	1.5	0.25	123.52	0.0308	25	2.281

Gambar Hasil 10 Percobaan Dengan Nilai R = 5

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	3	0.001	1.5	4	118	118	118	118	472	472	472	472	1.5	0.25	75.52	0.0188	15	1.757
2	500	2000	3	0.001	1.5	4	118	118	118	118	472	472	472	472	1.5	0.25	75.52	0.0188	17	1.879
3	500	2000	3	0.001	1.5	4	118	118	118	118	472	472	472	472	1.5	0.25	75.52	0.0188	15	1.542
4	500	2000	3	0.001	1.5	4	118	118	118	118	472	472	472	472	1.5	0.25	75.52	0.0188	18	1.871
5	500	2000	3	0.001	1.5	4	118	118	118	118	472	472	472	472	1.5	0.25	75.52	0.0188	19	1.782
6	500	2000	3	0.001	1.5	4	118	118	118	118	472	472	472	472	1.5	0.25	75.52	0.0188	10	1.278
7	500	2000	3	0.001	1.5	4	118	118	118	118	472	472	472	472	1.5	0.25	75.52	0.0188	11	1.656
8	500	2000	3	0.001	1.5	4	118	118	118	118	472	472	472	472	1.5	0.25	75.52	0.0188	22	1.707
9	500	2000	3	0.001	1.5	4	118	118	118	118	472	472	472	472	1.5	0.25	75.52	0.0188	25	1.784
10	500	2000	3	0.001	1.5	4	118	118	118	118	472	472	472	472	1.5	0.25	75.52	0.0188	12	1.666

Gambar Hasil 10 Percobaan Dengan Nilai r = 0.001

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	16	1.758
2	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	8	1.575
3	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	15	1.678
4	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	8	1.616
5	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	13	1.706
6	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	10	1.497
7	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	20	1.619
8	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	14	1.539
9	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	14	1.656
10	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.0187	14	1.616

Gambar Hasil 10 Percobaan Dengan Nilai r = 0.01

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	3	0.1	1.5	4	144	143	112	143	576	572	448	572	1.5	0.25	71.68	0.0179	18	1.512
2	500	2000	3	0.1	1.5	4	144	143	112	143	576	572	448	572	1.5	0.25	71.68	0.0179	19	1.780
3	500	2000	3	0.1	1.5	4	144	143	112	143	576	572	448	572	1.5	0.25	71.68	0.0179	23	1.784
4	500	2000	3	0.1	1.5	4	144	143	112	143	576	572	448	572	1.5	0.25	71.68	0.0179	25	1.904
5	500	2000	3	0.1	1.5	4	144	143	112	143	576	572	448	572	1.5	0.25	71.68	0.0179	21	1.998
6	500	2000	3	0.1	1.5	4	144	143	112	143	576	572	448	572	1.5	0.25	71.68	0.0179	24	1.756
7	500	2000	3	0.1	1.5	4	144	143	112	143	576	572	448	572	1.5	0.25	71.68	0.0179	22	1.782
8	500	2000	3	0.1	1.5	4	144	143	112	143	576	572	448	572	1.5	0.25	71.68	0.0179	20	1.739
9	500	2000	3	0.1	1.5	4	144	143	112	143	576	572	448	572	1.5	0.25	71.68	0.0179	20	1.806
10	500	2000	3	0.1	1.5	4	144	143	112	143	576	572	448	572	1.5	0.25	71.68	0.0179	17	1.906

Gambar Hasil 10 Percobaan Dengan Nilai r = 0.1

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	3	0.25	1.5	4	196	192	96	191	784	768	384	754	1.5	0.25	61.44	0.0153	29	1.952
2	500	2000	3	0.25	1.5	4	196	192	96	191	784	768	384	754	1.5	0.25	61.44	0.0153	33	2.121
3	500	2000	3	0.25	1.5	4	196	192	96	191	784	768	384	754	1.5	0.25	61.44	0.0153	31	2.028
4	500	2000	3	0.25	1.5	4	196	192	96	191	784	768	384	754	1.5	0.25	61.44	0.0153	28	1.924
5	500	2000	3	0.25	1.5	4	196	192	96	191	784	768	384	754	1.5	0.25	61.44	0.0153	21	1.644
6	500	2000	3	0.25	1.5	4	196	192	96	191	784	768	384	754	1.5	0.25	61.44	0.0153	30	2.051
7	500	2000	3	0.25	1.5	4	196	192	96	191	784	768	384	754	1.5	0.25	61.44	0.0153	33	2.058
8	500	2000	3	0.25	1.5	4	196	192	96	191	784	768	384	754	1.5	0.25	61.44	0.0153	32	2.094
9	500	2000	3	0.25	1.5	4	196	192	96	191	784	768	384	754	1.5	0.25	61.44	0.0153	28	1.850
10	500	2000	3	0.25	1.5	4	196	192	96	191	784	768	384	754	1.5	0.25	61.44	0.0153	25	1.853

Gambar Hasil 10 Percobaan Dengan Nilai r = 0.25

Gambar Hasil 10 Percobaan Dengan Nilai r = 0.5

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	3	0.5	1.5	4	353	323	62	312	1412	1292	248	1248	1.5	0.25	39.68	0.0099	36	2.973
2	500	2000	3	0.5	1.5	4	353	323	62	312	1412	1292	248	1248	1.5	0.25	39.68	0.0099	30	2.633
3	500	2000	3	0.5	1.5	4	353	323	62	312	1412	1292	248	1248	1.5	0.25	39.68	0.0099	33	2.334
4	500	2000	3	0.5	1.5	4	353	323	62	312	1412	1292	248	1248	1.5	0.25	39.68	0.0099	36	2.763
5	500	2000	3	0.5	1.5	4	353	323	62	312	1412	1292	248	1248	1.5	0.25	39.68	0.0099	38	2.875
6	500	2000	3	0.5	1.5	4	353	323	62	312	1412	1292	248	1248	1.5	0.25	39.68	0.0099	32	2.552
7	500	2000	3	0.5	1.5	4	353	323	62	312	1412	1292	248	1248	1.5	0.25	39.68	0.0099	35	2.678
8	500	2000	3	0.5	1.5	4	353	323	62	312	1412	1292	248	1248	1.5	0.25	39.68	0.0099	37	2.605
9	500	2000	3	0.5	1.5	4	353	323	62	312	1412	1292	248	1248	1.5	0.25	39.68	0.0099	30	2.443
10	500	2000	3	0.5	1.5	4	353	323	62	312	1412	1292	248	1248	1.5	0.25	39.68	0.0099	28	2.093

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	3	0.01	1.1	4	88	86	85	85	352	344	340	340	1.5	0.25	56.32	0.0140	29	1.863
2	500	2000	3	0.01	1.1	4	88	86	85	85	352	344	340	340	1.5	0.25	56.32	0.0140	31	1.850
3	500	2000	3	0.01	1.1	4	88	86	85	85	352	344	340	340	1.5	0.25	56.32	0.0140	28	1.877
4	500	2000	3	0.01	1.1	4	88	86	85	85	352	344	340	340	1.5	0.25	56.32	0.0140	23	1.780
5	500	2000	3	0.01	1.1	4	88	86	85	85	352	344	340	340	1.5	0.25	56.32	0.0140	22	1.513
6	500	2000	3	0.01	1.1	4	88	86	85	85	352	344	340	340	1.5	0.25	56.32	0.0140	20	1.566
7	500	2000	3	0.01	1.1	4	88	86	85	85	352	344	340	340	1.5	0.25	56.32	0.0140	21	1.511
8	500	2000	3	0.01	1.1	4	88	86	85	85	352	344	340	340	1.5	0.25	56.32	0.0140	27	1.613
9	500	2000	3	0.01	1.1	4	88	86	85	85	352	344	340	340	1.5	0.25	56.32	0.0140	21	1.554
10	500	2000	3	0.01	1.1	4	88	86	85	85	352	344	340	340	1.5	0.25	56.32	0.0140	25	1.580

Gambar Hasil 10 Percobaan Dengan Nilai n = 1.1

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	3	0.01	1.3	4	100	103	104	102	400	412	416	408	1.5	0.25	64	0.016	18	1.198
2	500	2000	3	0.01	1.3	4	100	103	104	102	400	412	416	408	1.5	0.25	64	0.016	24	1.563
3	500	2000	3	0.01	1.3	4	100	103	104	102	400	412	416	408	1.5	0.25	64	0.016	25	1.678
4	500	2000	3	0.01	1.3	4	100	103	104	102	400	412	416	408	1.5	0.25	64	0.016	22	1.541
5	500	2000	3	0.01	1.3	4	100	103	104	102	400	412	416	408	1.5	0.25	64	0.016	16	1.210
6	500	2000	3	0.01	1.3	4	100	103	104	102	400	412	416	408	1.5	0.25	64	0.016	18	1.230
7	500	2000	3	0.01	1.3	4	100	103	104	102	400	412	416	408	1.5	0.25	64	0.016	19	1.334
8	500	2000	3	0.01	1.3	4	100	103	104	102	400	412	416	408	1.5	0.25	64	0.016	21	1.613
9	500	2000	3	0.01	1.3	4	100	103	104	102	400	412	416	408	1.5	0.25	64	0.016	19	1.685
10	500	2000	3	0.01	1.3	4	100	103	104	102	400	412	416	408	1.5	0.25	64	0.016	18	1.490

Gambar Hasil 10 Percobaan Dengan Nilai n = 1.3

Gambar Hasil 10 Percobaan Dengan Nilai n = 1.5

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	16	1.758
2	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	8	1.575
3	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	15	1.678
4	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	8	1.616
5	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	13	1.706
6	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	10	1.497
7	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	20	1.619
8	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	14	1.539
9	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	14	1.656
10	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	14	1.618

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	3	0.01	1.7	4	131	136	132	135	524	544	528	540	1.5	0.25	83.84	0.020	13	1.725
2	500	2000	3	0.01	1.7	4	131	136	132	135	524	544	528	540	1.5	0.25	83.84	0.020	12	1.523
3	500	2000	3	0.01	1.7	4	131	136	132	135	524	544	528	540	1.5	0.25	83.84	0.020	24	1.847
4	500	2000	3	0.01	1.7	4	131	136	132	135	524	544	528	540	1.5	0.25	83.84	0.020	25	1.822
5	500	2000	3	0.01	1.7	4	131	136	132	135	524	544	528	540	1.5	0.25	83.84	0.020	19	1.790
6	500	2000	3	0.01	1.7	4	131	136	132	135	524	544	528	540	1.5	0.25	83.84	0.020	27	1.826
7	500	2000	3	0.01	1.7	4	131	136	132	135	524	544	528	540	1.5	0.25	83.84	0.020	18	1.701
8	500	2000	3	0.01	1.7	4	131	136	132	135	524	544	528	540	1.5	0.25	83.84	0.020	16	1.635
9	500	2000	3	0.01	1.7	4	131	136	132	135	524	544	528	540	1.5	0.25	83.84	0.020	22	1.812
10	500	2000	3	0.01	1.7	4	131	136	132	135	524	544	528	540	1.5	0.25	83.84	0.020	20	1.833

Gambar Hasil 10 Percobaan Dengan Nilai n = 1.7

Gambar Hasil 10 Percobaan Dengan Nilai n = 1.9

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	3	0.01	1.9	4	152	150	152	147	608	600	608	588	1.5	0.25	94.08	0.023	18	1.679
2	500	2000	3	0.01	1.9	4	152	150	152	147	608	600	608	588	1.5	0.25	94.08	0.023	25	1.786
3	500	2000	3	0.01	1.9	4	152	150	152	147	608	600	608	588	1.5	0.25	94.08	0.023	26	1.815
4	500	2000	3	0.01	1.9	4	152	150	152	147	608	600	608	588	1.5	0.25	94.08	0.023	23	1.822
5	500	2000	3	0.01	1.9	4	152	150	152	147	608	600	608	588	1.5	0.25	94.08	0.023	20	1.784
6	500	2000	3	0.01	1.9	4	152	150	152	147	608	600	608	588	1.5	0.25	94.08	0.023	19	1.750
7	500	2000	3	0.01	1.9	4	152	150	152	147	608	600	608	588	1.5	0.25	94.08	0.023	20	1.758
8	500	2000	3	0.01	1.9	4	152	150	152	147	608	600	608	588	1.5	0.25	94.08	0.023	22	1.829
9	500	2000	3	0.01	1.9	4	152	150	152	147	608	600	608	588	1.5	0.25	94.08	0.023	21	1.795
10	500	2000	3	0.01	1.9	4	152	150	152	147	608	600	608	588	1.5	0.25	94.08	0.023	25	1.869

Gambar Hasil 10 Percobaan Dengan Nilai N = 1

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	3	0.01	1.5	1	120	120	117	120	120	120	117	120	1.5	0.25	18.72	0.004	44	0.403
2	500	2000	3	0.01	1.5	1	120	120	117	120	120	120	117	120	1.5	0.25	18.72	0.004	45	0.454
3	500	2000	3	0.01	1.5	1	120	120	117	120	120	120	117	120	1.5	0.25	18.72	0.004	37	0.393
4	500	2000	3	0.01	1.5	1	120	120	117	120	120	120	117	120	1.5	0.25	18.72	0.004	43	0.323
5	500	2000	3	0.01	1.5	1	120	120	117	120	120	120	117	120	1.5	0.25	18.72	0.004	40	0.423
6	500	2000	3	0.01	1.5	1	120	120	117	120	120	120	117	120	1.5	0.25	18.72	0.004	39	0.353
7	500	2000	3	0.01	1.5	1	120	120	117	120	120	120	117	120	1.5	0.25	18.72	0.004	37	0.313
8	500	2000	3	0.01	1.5	1	120	120	117	120	120	120	117	120	1.5	0.25	18.72	0.004	39	0.270
9	500	2000	3	0.01	1.5	1	120	120	117	120	120	120	117	120	1.5	0.25	18.72	0.004	42	0.322
10	500	2000	3	0.01	1.5	1	120	120	117	120	120	120	117	120	1.5	0.25	18.72	0.004	38	0.323

Gambar Hasil 10 Percobaan Dengan Nilai N = 2

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	3	0.01	1.5	2	120	120	117	120	240	240	234	240	1.5	0.25	37.44	0.009	38	0.851
2	500	2000	3	0.01	1.5	2	120	120	117	120	240	240	234	240	1.5	0.25	37.44	0.009	34	0.679
3	500	2000	3	0.01	1.5	2	120	120	117	120	240	240	234	240	1.5	0.25	37.44	0.009	30	0.531
4	500	2000	3	0.01	1.5	2	120	120	117	120	240	240	234	240	1.5	0.25	37.44	0.009	33	0.631
5	500	2000	3	0.01	1.5	2	120	120	117	120	240	240	234	240	1.5	0.25	37.44	0.009	35	0.731
6	500	2000	3	0.01	1.5	2	120	120	117	120	240	240	234	240	1.5	0.25	37.44	0.009	39	0.931
7	500	2000	3	0.01	1.5	2	120	120	117	120	240	240	234	240	1.5	0.25	37.44	0.009	31	0.732
8	500	2000	3	0.01	1.5	2	120	120	117	120	240	240	234	240	1.5	0.25	37.44	0.009	31	0.727
9	500	2000	3	0.01	1.5	2	120	120	117	120	240	240	234	240	1.5	0.25	37.44	0.009	28	0.783
10	500	2000	3	0.01	1.5	2	120	120	117	120	240	240	234	240	1.5	0.25	37.44	0.009	35	0.831

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	3	0.01	1.5	3	120	120	117	120	360	360	351	360	1.5	0.25	56.16	0.014	28	1.356
2	500	2000	3	0.01	1.5	3	120	120	117	120	360	360	351	360	1.5	0.25	56.16	0.014	20	1.200
3	500	2000	3	0.01	1.5	3	120	120	117	120	360	360	351	360	1.5	0.25	56.16	0.014	23	1.257
4	500	2000	3	0.01	1.5	3	120	120	117	120	360	360	351	360	1.5	0.25	56.16	0.014	24	1.449
5	500	2000	3	0.01	1.5	3	120	120	117	120	360	360	351	360	1.5	0.25	56.16	0.014	25	1.372
6	500	2000	3	0.01	1.5	3	120	120	117	120	360	360	351	360	1.5	0.25	56.16	0.014	26	1.646
7	500	2000	3	0.01	1.5	3	120	120	117	120	360	360	351	360	1.5	0.25	56.16	0.014	21	1.346
8	500	2000	3	0.01	1.5	3	120	120	117	120	360	360	351	360	1.5	0.25	56.16	0.014	22	1.446
9	500	2000	3	0.01	1.5	3	120	120	117	120	360	360	351	360	1.5	0.25	56.16	0.014	20	1.246
10	500	2000	3	0.01	1.5	3	120	120	117	120	360	360	351	360	1.5	0.25	56.16	0.014	24	1.223

Gambar Hasil 10 Percobaan Dengan Nilai N = 3

Gambar Hasil 10 Percobaan Dengan Nilai N = 4

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	16	1.758
2	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	8	1.575
3	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	15	1.678
4	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	8	1.616
5	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	13	1.706
6	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	10	1.497
7	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	20	1.619
8	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	14	1.539
9	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	14	1.656
10	500	2000	3	0.01	1.5	4	120	120	117	120	480	480	468	480	1.5	0.25	74.88	0.018	14	1.616

HASIL PERCOBAAN

A - 1

No	Sum Paket	Jarak Paket (Byte)	Scissor				Unit Delay (Byte)				Total Delay (Byte)				FDL Konvensional				Paket Loss	Average Delay
			R	r	n	N	D1	D2	D3	D4	T1	T2	T3	T4	n	a	Total (m)	Loss (dB)		
1	500	2000	3	0.01	1.5	5	120	120	117	120	600	600	585	600	1.5	0.25	93.60	0.023	11	1.511
2	500	2000	3	0.01	1.5	5	120	120	117	120	600	600	585	600	1.5	0.25	93.60	0.023	15	1.681
3	500	2000	3	0.01	1.5	5	120	120	117	120	600	600	585	600	1.5	0.25	93.60	0.023	11	1.581
4	500	2000	3	0.01	1.5	5	120	120	117	120	600	600	585	600	1.5	0.25	93.60	0.023	10	1.544
5	500	2000	3	0.01	1.5	5	120	120	117	120	600	600	585	600	1.5	0.25	93.60	0.023	21	1.754
6	500	2000	3	0.01	1.5	5	120	120	117	120	600	600	585	600	1.5	0.25	93.60	0.023	18	1.743
7	500	2000	3	0.01	1.5	5	120	120	117	120	600	600	585	600	1.5	0.25	93.60	0.023	13	1.536
8	500	2000	3	0.01	1.5	5	120	120	117	120	600	600	585	600	1.5	0.25	93.60	0.023	18	1.637
9	500	2000	3	0.01	1.5	5	120	120	117	120	600	600	585	600	1.5	0.25	93.60	0.023	10	1.558
10	500	2000	3	0.01	1.5	5	120	120	117	120	600	600	585	600	1.5	0.25	93.60	0.023	19	1.722

Gambar Hasil 10 Percobaan Dengan Nilai N = 5

LAMPIRAN B
SOURCE PROGRAM

```
unit uSCISSOR;

interface
uses
  Windows, Messages, SysUtils, Classes,
Graphics, Controls, Forms, Dialogs,
  StdCtrls, ExtCtrls, Buttons, SUIButton,
SUIImagePanel, SUIGroupBox;

type
  TForm1 = class(TForm)
    Image1: TImage;
    GroupBox1: TGroupBox;
    Label2: TLabel;
    Edit2: TEdit;
    Label3: TLabel;
    Edit3: TEdit;
    Label4: TLabel;
    Edit4: TEdit;
    ket1: TEdit;
    Timer3: TTimer;
    paket11: TShape;
    paket21: TShape;
    paket31: TShape;
    paket41: TShape;
    paket51: TShape;
    paket61: TShape;
    paket71: TShape;
    paket81: TShape;
    Timer4: TTimer;
    Timer5: TTimer;
    Timer6: TTimer;
    Timer7: TTimer;
    Timer8: TTimer;
    Timer9: TTimer;
    Timer10: TTimer;
    pbfr1: TShape;
    pbfr2: TShape;
    pbfr3: TShape;
    pbfr4: TShape;
    pbfr5: TShape;
    pbfr6: TShape;
    pbfr7: TShape;
    pbfr8: TShape;
    pbfr9: TShape;
    tmrbuf1: TTimer;
    tmrbuf2: TTimer;
    tmrbuf3: TTimer;
    tmrbuf4: TTimer;
    gate1: TTimer;
    tmrbuf5: TTimer;
    tmrbuf6: TTimer;
    tmrbuf7: TTimer;
    gate2: TTimer;
    gate3: TTimer;
    gate4: TTimer;
    GroupBox2: TGroupBox;
    Label6: TLabel;
    Edit9: TEdit;
    Label7: TLabel;
    Edit10: TEdit;
    paket91: TShape;
    paket101: TShape;
    paket111: TShape;
    paket121: TShape;
    paket131: TShape;
    paket141: TShape;
    paket151: TShape;
    paket161: TShape;
    tmrsekat: TTimer;
    Label8: TLabel;
    Edit12: TEdit;
    Timer11: TTimer;
    Timer12: TTimer;
    Timer13: TTimer;
    Timer14: TTimer;
    Timer15: TTimer;
    Timer16: TTimer;
    Timer17: TTimer;
    Timer18: TTimer;
    Edit24: TEdit;
    Edit25: TEdit;
    Edit26: TEdit;
    Edit5: TEdit;
    Label9: TLabel;
    Edit8: TEdit;
    Edit11: TEdit;
    Edit13: TEdit;
    GroupBox3: TGroupBox;
    Memo1: TMemo;
    memo2: TMemo;
    Timer19: TTimer;
    Label11: TLabel;
    Label12: TLabel;
    Edit16: TEdit;
    Edit17: TEdit;
    Label13: TLabel;
    Edit18: TEdit;
    gate5: TTimer;
    gate6: TTimer;
    gate7: TTimer;
    gate8: TTimer;
    gate9: TTimer;
    gate10: TTimer;
    gate11: TTimer;
    gate12: TTimer;
    gate13: TTimer;
    gate14: TTimer;
    gate15: TTimer;
    gate16: TTimer;
    tmrbuf8: TTimer;
    pbfr10: TShape;
    tmrbuf9: TTimer;
    tmrbuf10: TTimer;
    tmrbuf11: TTimer;
    pbfr11: TShape;
    pbfr12: TShape;
    tmrbuf12: TTimer;
    tmrbuf13: TTimer;
    tmrbuf14: TTimer;
    tmrbuf15: TTimer;
    tmrbuf16: TTimer;
    tmrbuf17: TTimer;
    tmrbuf18: TTimer;
    tmrbuf19: TTimer;
    tmrbuf20: TTimer;
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```
    tmrbuf21: TTimer;
    tmrbuf22: TTimer;
    tmrbuf23: TTimer;
    tmrbuf24: TTimer;
    tmrbuf25: TTimer;
    pbfr15: TShape;
    pbfr14: TShape;
    pbfr13: TShape;
    pbfr16: TShape;
    pbfr17: TShape;
    pbfr18: TShape;
    pbfr19: TShape;
    pbfr20: TShape;
    pbfr21: TShape;
    pbfr22: TShape;
    pbfr23: TShape;
    pbfr24: TShape;
    pbfr25: TShape;
    sim: TEdit;
    tmrbuf46: TTimer;
    tmrbuf47: TTimer;
    tmrbuf48: TTimer;
    tmrbuf49: TTimer;
    tmrbuf50: TTimer;
    Edit19: TEdit;
    GroupBox4: TGroupBox;
    Label1: TLabel;
    Edit7: TEdit;
    Edit1: TEdit;
    Edit14: TEdit;
    suiButton1: TsuiButton;
    suiButton2: TsuiButton;
    suiButton3: TsuiButton;
    suiButton4: TsuiButton;
    suiGroupBox1: TsuiGroupBox;
    suiGroupBox2: TsuiGroupBox;
    suiGroupBox3: TsuiGroupBox;
    suiGroupBox4: TsuiGroupBox;
    suiGroupBox6: TsuiGroupBox;
    Edit6: TEdit;
    Edit52: TEdit;
    Edit53: TEdit;
    tmrsekat1: TTimer;
    suiButton5: TsuiButton;
    suiButton6: TsuiButton;
    suiButton7: TsuiButton;
    suiGroupBox5: TsuiGroupBox;
    Label40: TLabel;
    Label41: TLabel;
    Label42: TLabel;
    Label43: TLabel;
    Label5: TLabel;
    Label44: TLabel;
    Label63: TLabel;
    Edit49: TEdit;
    Edit50: TEdit;
    Edit51: TEdit;
    Edit54: TEdit;
    procedure FormCreate(Sender: TObject);
    procedure suiButton1Click(Sender: TObject);
    procedure Timer3Timer(Sender: TObject);
    procedure SuiButton2Click(Sender:
TObject);
    procedure Timer4Timer(Sender: TObject);
    procedure Timer5Timer(Sender: TObject);
    procedure Timer6Timer(Sender: TObject);
    procedure Timer7Timer(Sender: TObject);
    procedure Timer8Timer(Sender: TObject);
    procedure Timer9Timer(Sender: TObject);
    procedure Timer10Timer(Sender: TObject);
    procedure tmrbuf1Timer(Sender: TObject);
    procedure tmrbuf2Timer(Sender: TObject);
    procedure tmrbuf3Timer(Sender: TObject);
    procedure tmrbuf4Timer(Sender: TObject);
    procedure gate1Timer(Sender: TObject);
    procedure tmrbuf5Timer(Sender: TObject);
    procedure tmrbuf6Timer(Sender: TObject);
    procedure tmrbuf7Timer(Sender: TObject);
    procedure gate2Timer(Sender: TObject);
    procedure gate3Timer(Sender: TObject);
    procedure gate4Timer(Sender: TObject);
    procedure tmrsekatTimer(Sender: TObject);
    procedure Timer1Timer(Sender: TObject);
    procedure
pilihpaket(nopaket,lebarnya,nomorsekat,urutan:int
eger;drjalur:byte);
    procedure ascending;
    procedure Timer11Timer(Sender: TObject);
    procedure Timer12Timer(Sender: TObject);
    procedure Timer13Timer(Sender: TObject);
    procedure Timer14Timer(Sender: TObject);
    procedure Timer15Timer(Sender: TObject);
    procedure Timer16Timer(Sender: TObject);
    procedure Timer17Timer(Sender: TObject);
    procedure Timer18Timer(Sender: TObject);
    function acak(rata:integer):real;
    procedure Timer19Timer(Sender: TObject);
    procedure catatloss;
    procedure start;
    procedure gate5Timer(Sender: TObject);
    procedure gate6Timer(Sender: TObject);
    procedure gate7Timer(Sender: TObject);
    procedure gate8Timer(Sender: TObject);
    procedure gate9Timer(Sender: TObject);
    procedure gate10Timer(Sender: TObject);
    procedure gate11Timer(Sender: TObject);
    procedure gate12Timer(Sender: TObject);
    procedure gate13Timer(Sender: TObject);
    procedure gate14Timer(Sender: TObject);
    procedure gate15Timer(Sender: TObject);
    procedure gate16Timer(Sender: TObject);
    Procedure
letak(paketnya:Tshape;lebarnya,urutan:integer;tim
erbufer:TTimer;fromjalur:byte);
    procedure tmrbuf8Timer(Sender: TObject);
    procedure tmrbuf9Timer(Sender: TObject);
    procedure tmrbuf10Timer(Sender: TObject);
    procedure tmrbuf11Timer(Sender: TObject);
    procedure tmrbuf12Timer(Sender: TObject);
    procedure tmrbuf13Timer(Sender: TObject);
    procedure tmrbuf14Timer(Sender: TObject);
    procedure tmrbuf15Timer(Sender: TObject);
    procedure tmrbuf16Timer(Sender: TObject);
    procedure tmrbuf17Timer(Sender: TObject);
    procedure tmrbuf18Timer(Sender: TObject);
    procedure tmrbuf19Timer(Sender: TObject);
```

```
    procedure tmrbuf20Timer(Sender: TObject);
    procedure tmrbuf21Timer(Sender: TObject);
    procedure tmrbuf22Timer(Sender: TObject);
    procedure tmrbuf23Timer(Sender: TObject);
    procedure tmrbuf24Timer(Sender: TObject);
    procedure tmrbuf25Timer(Sender: TObject);
    procedure Edit9Change(Sender: TObject);
    procedure FormActivate(Sender: TObject);
    procedure suiButton3Click(Sender: TObject);
    procedure suiButton4Click(Sender: TObject);
    procedure suiButton5Click(Sender: TObject);
    procedure suiButton6Click(Sender: TObject);
    procedure suiButton7Click(Sender: TObject);
private
    { Private declarations }
     lebar1,tempat1:integer;
     lebar2,tempat2:integer;
     lebar3,tempat3:integer;
     lebar4,tempat4:integer;
     lebar5,tempat5:integer;
     lebar6,tempat6:integer;
     lebar7,tempat7:integer;
     lebar8,tempat8:integer;
     lebar9,tempat9:integer;
     lebar10,tempat10:integer;
     lebar11,tempat11:integer;
     lebar12,tempat12:integer;
     lebar13,tempat13:integer;
     lebar14,tempat14:integer;
     lebar15,tempat15:integer;
     lebar16,tempat16:integer;
nosekat1,nosekat2,nosekat3,nosekat4,nosekat5,
nosekat6,nosekat7,nosekat8,nosekat9,nosekat10
,nosekat11,nosekat12,nosekat13,nosekat14,nose
kat15,nosekat16:integer;
tipealg:byte;
 public
    { Public declarations }
    tgg_paket11:integer; // tgg=tinggi
    pjg_paket11:integer; // pjg=panjang paket
    tgg_paket12:integer;
    pjg_paket12:integer;
    tgg_paket21:integer;
    pjg_paket21:integer;
    tgg_paket31:integer;
    pjg_paket31:integer;
    tgg_paket41:integer;
    pjg_paket41:integer;
    tgg_paket51:integer;
    pjg_paket51:integer;
    tgg_paket61:integer;
    pjg_paket61:integer;
    tgg_paket71:integer;
    pjg_paket71:integer;
    tgg_paket81:integer;
    pjg_paket81:integer;
    tgg_paket91:integer;
    pjg_paket91:integer;
    tgg_paket101:integer;
    pjg_paket101:integer;
    tgg_paket111:integer;
    pjg_paket111:integer;
    tgg_paket121:integer;
    pjg_paket121:integer;
    tgg_paket131:integer;
    pjg_paket131:integer;
    tgg_paket141:integer;
    pjg_paket141:integer;
    tgg_paket151:integer;
    pjg_paket151:integer;
    tgg_paket161:integer;
   pjg_paket161:integer;
   salbufer : array[1..32] of integer;  // 0=idle,
1=dipakai
    jumsekat : array [1..64] of integer;
    urut:integer;urutan:char;
    totalpaket,paketloss,nextsal,
kapasitasspasi:integer;
    akhir1,tem1,t1,paketsim:integer;
 end;
 type
    TPaket = record
      status : integer ; // 0 = off dan 1 = on dipakai
atau tidak
      saluran:integer;
    end;
 type
    TKoordinat = record
      top : integer ; // 0 = off dan 1 = on dipakai atau
tidak
      saluranke:integer;
      pintu: integer;
    end;
    Tcap = record
       kapasitas : integer;
    end;
    Tgate = record
       sekatke :array [1..64] of integer;
    end;
    Tcapacity = record
      sekatke : array[1..64] of Tcap;
    end;
    TSortOrder = record
      ascending  : byte;
    end;
  const
  tinggipaket=17;
  batasbuffer=600;
  koordmasuktop=520;
  koordmasukleft=16;
  jumsaluran=16;
  spasiatas=85;
  spasikiri=40;
  jumpaketsim=100;
  jumlamda=32;
  bataspita=106;
  batas=5;
  pembagi=10;
  kanal=4;
var
  Form1: TForm1;
  pbfr : array[1..jumpaketsim] of TPaket;
  paket1 : array[1..2] of TPaket;
  paket2 : array[1..2] of TPaket;
  paket3 : array[1..2] of TPaket;
  paket4 : array[1..2] of TPaket;
```

```
  paket5 : array[1..2] of TPaket;
  paket6 : array[1..2] of TPaket;
  paket7 : array[1..2] of TPaket;
  paket8 : array[1..2] of TPaket;
  paket9 : array[1..2] of TPaket;
  paket10 : array[1..2] of TPaket;
  paket11 : array[1..2] of TPaket;
  paket12 : array[1..2] of TPaket;
  paket13 : array[1..2] of TPaket;
  paket14 : array[1..2] of TPaket;
  paket15 : array[1..2] of TPaket;
  paket16 : array[1..2] of TPaket;
  koordbufer: array[1..jumlamda] of
TKoordinat;
  saluran : array [1..jumsaluran] of Tgate;
  Kapsaluran : array[1..jumsaluran] of
Tcapacity;
  koordsekat:array [1..64] of integer;
  statussal:array[1..jumsaluran] of byte; // 0 jika
ada yg kosong dan 1 jika penuh
  slotakhir:array[1..jumsaluran] of byte;
  temp1 : array[1..jumsaluran] of byte;
  temp2 : array[1..jumsaluran] of byte;
  temp3 : array[1..jumsaluran] of byte;
  temp4 : array[1..jumsaluran] of byte;
  temp5 : array[1..jumsaluran] of byte;
  temp6 : array[1..jumsaluran] of byte;
  temp7 : array[1..jumsaluran] of byte;
  temp8 : array[1..jumsaluran] of byte;
  temp9 : array[1..jumsaluran] of byte;
  temp10 : array[1..jumsaluran] of byte;
  temp11 : array[1..jumsaluran] of byte;
  temp12 : array[1..jumsaluran] of byte;
  temp13 : array[1..jumsaluran] of byte;
  temp14: array[1..jumsaluran] of byte;
  temp15 : array[1..jumsaluran] of byte;
  temp16 : array[1..jumsaluran] of byte;
  procedure
paketsimulasi(paket:Tshape;indek:Tpaket;timer
nya:TTimer;kali:integer);
  implementation
uses DM, TampilTabelPercobaan, ADODB,
DB;
//uses ;//Unit1;
{$R *.DFM}
procedure buffer(jumbuffer,jumout:integer);
var
i,tanda,jrk:integer;
ttkakhir,jarak,j,ttkakhir1,ttkakhir2,ttkakhir3,ttka
khir4:integer;
begin
  jrk:=round(500/(jumbuffer+1));
  tanda:=200;
ttkakhir1:=strtoint(form1.edit12.text)*round((str
toint(form1.edit33.text))/pembagi);
ttkakhir2:=strtoint(form1.edit12.text)*round((str
toint(form1.edit34.text))/pembagi);
ttkakhir3:=strtoint(form1.edit12.text)*round((str
toint(form1.edit35.text))/pembagi);
ttkakhir4:=strtoint(form1.edit12.text)*round((str
toint(form1.edit36.text))/pembagi);
  begin
     jarak:= jrk; // 50 untuk selisih
     form1.canvas.pen.color:=clblue;
     form1.canvas.pen.style:=pssolid;
     form1.canvas.pen.width:= 1;
     form1.canvas.moveto((tanda+46),jarak+48);
     form1.canvas.lineto((243+ttkakhir1),jarak+48);
     //form1.ket10.text:=inttostr((tanda+30)-
3*i+16);
     koordbufer[1].top:=jarak+45;
form1.Canvas.pixels[(koordbufer[1].pintu),koordb
ufer[1].top] ;
     jarak:= jrk*2; // 50 untuk selisih
     form1.canvas.pen.color:=clblue;
     form1.canvas.pen.style:=pssolid;
     form1.canvas.pen.width:= 1;
     form1.canvas.moveto((tanda+46),jarak+48);
     form1.canvas.lineto((243+ttkakhir2),jarak+48);
     //form1.ket10.text:=inttostr((tanda+30)-
3*i+16);
     koordbufer[2].top:=jarak+45;
form1.Canvas.pixels[(koordbufer[1].pintu),koordb
ufer[1].top] ;
     jarak:= jrk*3; // 50 untuk selisih
     form1.canvas.pen.color:=clblue;
     form1.canvas.pen.style:=pssolid;
     form1.canvas.pen.width:= 1;
     form1.canvas.moveto((tanda+46),jarak+48);
     form1.canvas.lineto((243+ttkakhir3),jarak+48);
     //form1.ket10.text:=inttostr((tanda+30)-
3*i+16);
     koordbufer[3].top:=jarak+45;
form1.Canvas.pixels[(koordbufer[1].pintu),koordb
ufer[1].top] ;

     jarak:= jrk*4; // 50 untuk selisih
     form1.canvas.pen.color:=clblue;
     form1.canvas.pen.style:=pssolid;
     form1.canvas.pen.width:= 1;
     form1.canvas.moveto((tanda+46),jarak+48);
     form1.canvas.lineto((243+ttkakhir4),jarak+48);
     //form1.ket10.text:=inttostr((tanda+30)-
3*i+16);
     koordbufer[4].top:=jarak+45;
form1.Canvas.pixels[(koordbufer[1].pintu),koordb
ufer[1].top] ;
  end;
end;

procedure TForm1.FormCreate(Sender: TObject);
begin
  form1.WindowState:=wsmaximized;
  memo2.Clear;
  memo2.Lines.Append('L Band range :');
  memo2.Lines.Append('  1560 - 1620 nm');
  memo2.Lines.Append('  Ch spacing : 5 nm');
end;

Procedure
TForm1.letak(paketnya:Tshape;lebarnya,urutan:int
eger;timerbufer:TTimer;fromjalur:byte);
var loop,k,m:integer;    nomorsekat:integer;
begin
        loop:=0;
        case fromjalur of
```

```
            1,5,9,13 :
paketnya.brush.Color:=clmaroon;
            2,6,10,14 :
paketnya.brush.color:=$004080FF;
            3,7,11,15 :
paketnya.brush.color:=clgray;
            4,8,12,16 :
paketnya.brush.color:=$0000D2D2;
          end;
          paketnya.visible:=true;
lebarnya:=round(lebarnya/kapasitasspasi)*kapa
sitasspas;
           if
((strtoint(edit33.text))<(strtoint(edit34.text)))
and
((strtoint(edit33.text))<(strtoint(edit35.text)))
and
((strtoint(edit33.text))<(strtoint(edit36.text)))the
n
paketnya.width:=round((strtoint(edit33.text))/pe
mbagi)
             else if
((strtoint(edit34.text))<(strtoint(edit33.text)))
and
((strtoint(edit34.text))<(strtoint(edit35.text)))
and
((strtoint(edit34.text))<(strtoint(edit36.text)))the
n
paketnya.width:=round((strtoint(edit34.text))/pe
mbagi)
             else if
((strtoint(edit35.text))<(strtoint(edit33.text)))
and
((strtoint(edit35.text))<(strtoint(edit34.text)))
and
((strtoint(edit35.text))<(strtoint(edit36.text)))the
n
paketnya.width:=round((strtoint(edit35.text))/pe
mbagi)
             else if
((strtoint(edit36.text))<(strtoint(edit33.text)))
and
((strtoint(edit36.text))<(strtoint(edit34.text)))
and
((strtoint(edit36.text))<(strtoint(edit35.text)))the
n
paketnya.width:=round((strtoint(edit36.text))/pe
mbagi)
           else
paketnya.width:=round((strtoint(edit33.text))/pe
mbagi);
          paketnya.left:=koordsekat[nomorsekat]-
paketnya.width;
          paketnya.top:=koordbufer[urutan].top-
16;
          paketsim:=paketsim+1;
          sim.text:=inttostr(paketsim);
          if paketsim>jumpaketsim then
sim.Color:=clred;
           for k:= 1 to strtoint(edit12.text)+1 do
           begin
```

```
            if
(form1.canvas.pixels[paketnya.left,paketnya.top]
and (paketnya.brush.color))<>clblack then
              nomorsekat:=nomorsekat+1;
               if
((strtoint(edit33.text))<(strtoint(edit34.text))) and
((strtoint(edit33.text))<(strtoint(edit35.text))) and
((strtoint(edit33.text))<(strtoint(edit36.text)))then
paketnya.left:=koordsekat[nomorsekat]-
round((strtoint(edit33.text))/pembagi)
                else if
((strtoint(edit34.text))<(strtoint(edit33.text))) and
((strtoint(edit34.text))<(strtoint(edit35.text))) and
((strtoint(edit34.text))<(strtoint(edit36.text)))then
paketnya.left:=koordsekat[nomorsekat]-
round((strtoint(edit34.text))/pembagi)
                else if
((strtoint(edit35.text))<(strtoint(edit33.text))) and
((strtoint(edit35.text))<(strtoint(edit34.text))) and
((strtoint(edit35.text))<(strtoint(edit36.text)))then
paketnya.left:=koordsekat[nomorsekat]-
round((strtoint(edit35.text))/pembagi)
                else if
((strtoint(edit36.text))<(strtoint(edit33.text))) and
((strtoint(edit36.text))<(strtoint(edit34.text))) and
((strtoint(edit36.text))<(strtoint(edit35.text)))then
paketnya.left:=koordsekat[nomorsekat]-
round((strtoint(edit36.text))/pembagi)
              else
paketnya.left:=koordsekat[nomorsekat]-
round((strtoint(edit33.text))/pembagi);
              edit19.text:=inttostr(paketnya.left);
              for m:= 1 to
round((strtoint(edit35.text))/pembagi) do
              if
(form1.canvas.pixels[paketnya.left+m,paketnya.top
] and (paketnya.brush.color))= clblack then
                begin
                 loop:=999;
                  if
((strtoint(edit33.text))<(strtoint(edit34.text))) and
((strtoint(edit33.text))<(strtoint(edit35.text))) and
((strtoint(edit33.text))<(strtoint(edit36.text)))then
paketnya.left:=koordsekat[nomorsekat-1]-
round((strtoint(edit33.text))/pembagi)
                   else if
((strtoint(edit34.text))<(strtoint(edit33.text))) and
((strtoint(edit34.text))<(strtoint(edit35.text))) and
((strtoint(edit34.text))<(strtoint(edit36.text)))then
paketnya.left:=koordsekat[nomorsekat-1]-
round((strtoint(edit34.text))/pembagi)
                   else if
((strtoint(edit35.text))<(strtoint(edit33.text))) and
((strtoint(edit35.text))<(strtoint(edit34.text))) and
((strtoint(edit35.text))<(strtoint(edit36.text)))then
paketnya.left:=koordsekat[nomorsekat-1]-
round((strtoint(edit35.text))/pembagi)
                   else if
((strtoint(edit36.text))<(strtoint(edit33.text))) and
((strtoint(edit36.text))<(strtoint(edit34.text))) and
((strtoint(edit36.text))<(strtoint(edit35.text)))then
paketnya.left:=koordsekat[nomorsekat-1]-
round((strtoint(edit36.text))/pembagi)
```

```
                    else
paketnya.left:=koordsekat[nomorsekat-1]-
round((strtoint(edit33.text))/pembagi);
                   break;
                  end;

paketnya.left:=koordsekat[nomorsekat]-
lebarnya;
              paketnya.width:=lebarnya;
              if loop=999 then
                begin

paketnya.left:=koordsekat[nomorsekat-1]-
lebarnya;
                paketnya.width:=lebarnya;
                if totalpaket > strtoint(edit16.text)
then jumsekat[nomorsekat-
1]:=jumsekat[nomorsekat-1]+1;
                if totalpaket > strtoint(edit16.text)
then
jumsekat[nomorsekat]:=jumsekat[nomorsekat]-
1;
                 break;
                end;
            end;
           if (totalpaket >
strtoint(edit16.text))and(totalpaket <=
strtoint(edit17.text)) then

jumsekat[nomorsekat]:=jumsekat[nomorsekat]+
1;
          if (nomorsekat<=0) then
timerbufer.enabled:=false else
timerbufer.enabled:=true;
end;

procedure
TForm1.pilihpaket(nopaket,lebarnya,nomorseka
t,urutan:integer;drjalur:byte);
var m,skt1,skt2,k,loop:integer;
begin
      case nopaket of
       1:
letak(pbfr1,lebarnya,urutan,tmrbuf1,drjalur);
       2:
letak(pbfr2,lebarnya,urutan,tmrbuf2,drjalur);
       3:
letak(pbfr3,lebarnya,urutan,tmrbuf3,drjalur);
       4:
letak(pbfr4,lebarnya,urutan,tmrbuf4,drjalur);
       5:
letak(pbfr5,lebarnya,urutan,tmrbuf5,drjalur);
       6:
letak(pbfr6,lebarnya,urutan,tmrbuf6,drjalur);
       7:
letak(pbfr7,lebarnya,urutan,tmrbuf7,drjalur);
       8:
letak(pbfr8,lebarnya,urutan,tmrbuf8,drjalur);
       9:
letak(pbfr9,lebarnya,urutan,tmrbuf9,drjalur);
      10:
letak(pbfr10,lebarnya,urutan,tmrbuf10,drjalur);
      11:
letak(pbfr11,lebarnya,urutan,tmrbuf11,drjalur);
      12:
letak(pbfr12,lebarnya,urutan,tmrbuf12,drjalur);
      13:
letak(pbfr13,lebarnya,urutan,tmrbuf13,drjalur);
      14:
letak(pbfr14,lebarnya,urutan,tmrbuf14,drjalur);
      15:
letak(pbfr15,lebarnya,urutan,tmrbuf15,drjalur);
      16:
letak(pbfr16,lebarnya,urutan,tmrbuf16,drjalur);
      17:
letak(pbfr17,lebarnya,urutan,tmrbuf17,drjalur);
      18:
letak(pbfr18,lebarnya,urutan,tmrbuf18,drjalur);
      19:
letak(pbfr19,lebarnya,urutan,tmrbuf19,drjalur);
      20:
letak(pbfr20,lebarnya,urutan,tmrbuf20,drjalur);
      21:
letak(pbfr21,lebarnya,urutan,tmrbuf21,drjalur);
      22:
letak(pbfr22,lebarnya,urutan,tmrbuf22,drjalur);
      23:
letak(pbfr23,lebarnya,urutan,tmrbuf23,drjalur);
      24:
letak(pbfr24,lebarnya,urutan,tmrbuf24,drjalur);
      25:
letak(pbfr25,lebarnya,urutan,tmrbuf25,drjalur);
 end;
end;

procedure Tform1.ascending;
var lebarnya,jslot,nomorsekat,urutan,i,j,p:integer;
   hsl_sort:byte;
   paketnya:TShape;
   sort:array[1..jumpaketsim]of integer;
begin
   jslot:=strtoint(edit12.text);
   for i:=1 to jumpaketsim do
    for j:=1 to jslot do
      if
((strtoint(edit33.text))<(strtoint(edit34.text))) and
((strtoint(edit33.text))<(strtoint(edit35.text))) and
((strtoint(edit33.text))<(strtoint(edit36.text)))then
sort[i]:=j*strtoint(edit33.text)
       else if
((strtoint(edit34.text))<(strtoint(edit33.text))) and
((strtoint(edit34.text))<(strtoint(edit35.text))) and
((strtoint(edit34.text))<(strtoint(edit36.text)))then
sort[i]:=j*strtoint(edit34.text)
       else if
((strtoint(edit35.text))<(strtoint(edit33.text))) and
((strtoint(edit35.text))<(strtoint(edit34.text))) and
((strtoint(edit35.text))<(strtoint(edit36.text)))then
sort[i]:=j*strtoint(edit35.text)
       else if
((strtoint(edit36.text))<(strtoint(edit33.text))) and
((strtoint(edit36.text))<(strtoint(edit34.text))) and
((strtoint(edit36.text))<(strtoint(edit35.text)))then
sort[i]:=j*strtoint(edit36.text)
       else sort[i]:=j*strtoint(edit33.text);
```

```
    hsl_sort:=sort[i];
end;

procedure Tform1.catatloss;
begin
if totalpaket > strtoint(edit16.text) then
begin
 paketloss:=paketloss+1;
 edit10.text:=inttostr(paketloss);
end;
end;

procedure TForm1.Timer3Timer(Sender:
TObject);
var
i,s,c,a,m,bsr_paket,batas_waktu,paketon,pilih1,s
ekatnya,besarpaket,besarjarak:integer;
caripaket,salalg2,salalg3:byte;
begin
paketon:=0;
urutan1:=0;
paket11.visible:=true;
paket11.left:=paket11.Left+1;
bsr_paket:=lebar1;//pjg_paket11;
batas_waktu:=106-bsr_paket;
    if paket11.left>=batas_waktu then
    begin // awal setelah dari masukan
      totalpaket:=totalpaket+1;
      edit9.text:=inttostr(totalpaket);   // output
total paket
      if totalpaket>strtoint(edit16.text) then
        edit18.text:=inttostr((totalpaket)-
strtoint(edit16.text));
      if
strtoint(edit18.text)>=strtoint(edit17.text)-
strtoint(edit16.text) then
        edit18.text:=inttostr(strtoint(edit17.text)-
strtoint(edit16.text));
       begin    //algoritma A2
        ascending;
        salalg3:=0;
        for i:= 1 to kanal do
        if slotakhir[i]=0 then
          if saluran[i].sekatke[1]=0 then
          begin
            salalg2:=salalg2+1;
            temp1[salalg2]:=i;
          end;
          if salalg2>0 then
          begin
            c:=kanal;
            if saluran[i].sekatke[c]=0 then
            begin
              salalg2:=saluran[i].sekatke[c];
              temp1[salalg2]:=i;
            end
            else
            for a:=1 downto kanal-1 do
            if saluran[i].sekatke[c-a]=0 then
            begin
              salalg2:=saluran[i].sekatke[c-a];
              temp1[salalg2]:=i;
            end;
            begin
            pilih1:=salalg2;
            urutan1:=pilih1+1;
            edit1.text:=inttostr(urutan1);
            urutan1:=temp1[urutan1];
            end
          end
          else
          if saluran[urutan1].sekatke[1]=1 then
            catatloss
          else
          for s:= 1 to 1 do
          if saluran[urutan1].sekatke[s]=0 then
          begin
            nosekat1:=s;   // nosekat menyatakan
nomor sekat ke-
            for i:=1 to jumpaketsim do
            if pbfr[i].status=0 then
              begin
                paketOn:=i;
                break;
              end;

pilihpaket(paketon,lebar1,nosekat1,urutan1,1);
            break;
          end;
        end; //akhir algoritma A2
    besarpaket:= round(strtoint(edit4.text)/pembagi);
    lebar1:=round(acak(besarpaket));
    paket11.brush.Color:=clmaroon;
    paket11.height:=tinggipaket;
    ket1.text:=inttostr(lebar1*10);
    paket11.width:=lebar1;

besarjarak:=round(strtoint(edit11.text)/pembagi);
    tempat1:= round(acak(besarjarak));
    paket11.top:=spasiatas;   // tetap untuk saluran 1
    paket11.left:=bataspita-tempat1-lebar1;
    end;// akhir setelah  masukan
end;

procedure persiapan;
var jumbuffer,jrk,tanda,i,jarak:integer;
begin
  for i:=1 to jumpaketsim do
  pbfr[i].status:=0;
  jumbuffer:=kanal;
  jrk:=round(500/(jumbuffer+1));
  tanda:=200;
  for i:= 1 to jumbuffer do
    begin
       jarak:= jrk*i; // 50 untuk selisih
    end;
// paket pertama
form1.paket11.brush.Color:=clmaroon;
form1.pjg_paket11:=form1.lebar1;
form1.paket11.Height:=tinggipaket;
form1.paket11.width:=form1.pjg_paket11;
form1.paket11.top:=spasiatas; // bakal random
form1.timer3.Enabled:=true;
// paket kedua-satu
form1.paket21.brush.Color:=$004080FF;
form1.tgg_paket21:=tinggipaket;
```

```
form1.pjg_paket21:=form1.lebar2;
form1.paket21.Height:=form1.tgg_paket21;
form1.paket21.width:=form1.pjg_paket21;
form1.paket21.top:=spasiatas+25;     // bakal
random
form1.timer4.Enabled:=true;
// paket ketiga-satu
form1.paket31.brush.Color:=clgray;
form1.tgg_paket31:=tinggipaket;
form1.pjg_paket31:=form1.lebar3;
form1.paket31.Height:=form1.tgg_paket31;
form1.paket31.width:=form1.pjg_paket31;
form1.paket31.top:=spasiatas+50;     // bakal
random
form1.timer5.Enabled:=true;
// paket keempat-satu
form1.paket41.brush.Color:=$0000D2D2;
form1.tgg_paket41:=tinggipaket;
form1.pjg_paket41:=form1.lebar4;  // bakal
random
form1.paket41.Height:=form1.tgg_paket41;
form1.paket41.width:=form1.pjg_paket41;
form1.paket41.top:=spasiatas+75;     // bakal
random
form1.timer6.Enabled:=true;
// paket kelima-satu
form1.paket51.brush.Color:=clmaroon;
form1.tgg_paket51:=tinggipaket;
form1.pjg_paket51:=form1.lebar5;  // bakal
random
form1.paket51.Height:=form1.tgg_paket51;
form1.paket51.width:=form1.pjg_paket51;
form1.paket51.top:=spasiatas+100;     // bakal
random
form1.timer7.Enabled:=true;
// paket keenam-satu
form1.paket61.brush.Color:=$004080FF;
form1.tgg_paket61:=tinggipaket;
form1.pjg_paket61:=form1.lebar6;
form1.paket61.Height:=form1.tgg_paket61;
form1.paket61.width:=form1.pjg_paket61;
form1.paket61.top:=spasiatas+125;     // bakal
rand
form1.timer8.Enabled:=true;
// paket ketujuh -satu
form1.paket71.brush.Color:=clgray;
form1.tgg_paket71:=tinggipaket;
form1.pjg_paket71:=form1.lebar7;
form1.paket71.Height:=form1.tgg_paket71;
form1.paket71.width:=form1.pjg_paket71;
form1.paket71.top:=spasiatas+150;     // bakal
random
form1.timer9.Enabled:=true;
// paket kedelpan-satu
form1.paket81.brush.Color:=$0000D2D2;
form1.tgg_paket81:=tinggipaket;
form1.pjg_paket81:=form1.lebar8;
form1.paket81.Height:=form1.tgg_paket81;
form1.paket81.width:=form1.pjg_paket81;
form1.paket81.top:=spasiatas+175;    // bakal
random
form1.timer10.Enabled:=true;
// paket 91
form1.paket91.brush.Color:=clmaroon;
form1.tgg_paket91:=tinggipaket;
form1.pjg_paket91:=form1.lebar9;
form1.paket91.Height:=form1.tgg_paket91;
form1.paket91.width:=form1.pjg_paket91;
form1.paket91.top:=spasiatas+200;    // bakal
random
form1.timer11.Enabled:=true;
// paket 10 1
form1.paket101.brush.Color:=$004080FF;
form1.tgg_paket101:=tinggipaket;
form1.pjg_paket101:=form1.lebar10;
form1.paket101.Height:=form1.tgg_paket101;
form1.paket101.width:=form1.pjg_paket101;
form1.paket101.top:=spasiatas+225;    // bakal
random
form1.timer12.Enabled:=true;
// paket 11
form1.paket111.brush.Color:=clgray;
form1.tgg_paket111:=tinggipaket;
form1.pjg_paket111:=form1.lebar11;
form1.paket111.Height:=form1.tgg_paket111;
form1.paket111.width:=form1.pjg_paket111;
form1.paket111.top:=spasiatas+250;    // bakal
random
form1.timer13.Enabled:=true;
// paket 12
form1.paket121.brush.Color:=$0000D2D2;
form1.tgg_paket121:=tinggipaket;
form1.pjg_paket121:=form1.lebar12;
form1.paket121.Height:=form1.tgg_paket121;
form1.paket121.width:=form1.pjg_paket121;
form1.paket121.top:=spasiatas+275;    // bakal
random
form1.timer14.Enabled:=true;
// paket 13
form1.paket131.brush.Color:=clmaroon;
form1.tgg_paket131:=tinggipaket;
form1.pjg_paket131:=form1.lebar13;
form1.paket131.Height:=form1.tgg_paket131;
form1.paket131.width:=form1.pjg_paket131;
form1.paket131.top:=spasiatas+300;    // bakal
random
form1.timer15.Enabled:=true;
// paket 14
form1.paket141.brush.Color:=$004080FF;
form1.tgg_paket141:=tinggipaket;
form1.pjg_paket141:=form1.lebar14;
form1.paket141.Height:=form1.tgg_paket141;
form1.paket141.width:=form1.pjg_paket141;
form1.paket141.top:=spasiatas+325;    // bakal
random
form1.timer16.Enabled:=true;
// paket 15
form1.paket151.brush.Color:=clgray;
form1.tgg_paket151:=tinggipaket;
form1.pjg_paket151:=form1.lebar15;
form1.paket151.Height:=form1.tgg_paket151;
form1.paket151.width:=form1.pjg_paket151;
form1.paket151.top:=spasiatas+350;    // bakal
random
form1.timer17.Enabled:=true;
// paket 16
```

```
form1.paket161.brush.Color:=$0000D2D2;
form1.tgg_paket161:=tinggipaket;
form1.pjg_paket161:=form1.lebar16;
form1.paket161.Height:=form1.tgg_paket161;
form1.paket161.width:=form1.pjg_paket161;
form1.paket161.top:=spasiatas+375;    // bakal
random
form1.timer18.Enabled:=true;
end;
function TForm1.acak(rata:integer):real;
var hslrandom,hasil:real;
begin
  randomize;
  hslrandom := (random(50)+1)/50;
  hasil:= -rata * ln(hslrandom);
  if (hasil > 552) then
  repeat
    randomize;
    hslrandom := (random(50)+1)/50;
    hasil:= -rata * ln(hslrandom);
  until  hasil <=552;
  acak:=hasil;
end;
procedure Tform1.start;
begin
lebar1:=30;
paket11.left:=6;
ket1.text:=inttostr(lebar1);
lebar2:=40;
paket21.left:=11;
ket2.text:=inttostr(lebar2);
lebar3:=31;
paket31.left:=9;
ket3.text:=inttostr(lebar3);
lebar4:=26;
paket41.left:=7;
ket4.text:=inttostr(lebar4);
lebar5:=34;
paket51.left:=13;
ket5.text:=inttostr(lebar5);
lebar6:=28;
paket61.left:=5;
ket6.text:=inttostr(lebar6);
lebar7:=34;
paket71.left:=8;
ket7.text:=inttostr(lebar7);
lebar8:=29;
paket81.left:=15;
ket8.text:=inttostr(lebar8);
lebar9:=38;
paket91.left:=17;
ket9.text:=inttostr(lebar9);
lebar10:=25;
paket101.left:=12;
ket10.text:=inttostr(lebar10);
lebar11:=24;
paket111.left:=6;
ket11.text:=inttostr(lebar11);
lebar12:=32;
paket121.left:=9;
ket12.text:=inttostr(lebar12);

lebar13:=26;
paket131.left:=19;
ket13.text:=inttostr(lebar13);
lebar14:=28;
paket141.left:=11;
ket14.text:=inttostr(lebar14);
lebar15:=33;
paket151.left:=18;
ket15.text:=inttostr(lebar15);
lebar16:=39;
paket161.left:=15;
ket16.text:=inttostr(lebar16);
end;

procedure TForm1.tmrbuf1Timer(Sender:
TObject);
begin
pbfr1.left:=pbfr1.left+1;
pbfr[1].status:=1;
if
(pbfr1.left>=koordsekat[strtoint(edit12.text)+1])or(
pbfr1.left=batas-pbfr1.width)then
  begin
  pbfr1.visible:=false;
  tmrbuf1.enabled:=false;
  pbfr[1].status:=0;
  edit5.text:=inttostr(pbfr[1].status);
  pbfr1.top:=koordmasuktop;
  pbfr1.left:=koordmasukleft+(0*24);
  paketsim:=paketsim-1;
  sim.text:=inttostr(paketsim);
  if paketsim>jumpaketsim then sim.Color:=clred;
  end;
end;

procedure TForm1.tmrbuf2Timer(Sender:
TObject);
begin
pbfr2.left:=pbfr2.left+1;
pbfr[2].status:=1;
if
(pbfr2.left>=koordsekat[strtoint(edit12.text)+1])or(
pbfr2.left=batas-pbfr2.width)then
  begin
  pbfr2.visible:=false;
  tmrbuf2.enabled:=false;
  pbfr[2].status:=0;
  pbfr2.top:=koordmasuktop;
  pbfr2.left:=koordmasukleft+(1*24);
  paketsim:=paketsim-1;
  sim.text:=inttostr(paketsim);
  if paketsim>jumpaketsim then sim.Color:=clred;
  end;
end;

procedure TForm1.tmrbuf3Timer(Sender:
TObject);
begin
pbfr3.left:=pbfr3.left+1;
pbfr[3].status:=1;
if
(pbfr3.left>=koordsekat[strtoint(edit12.text)+1])or(
pbfr3.left=40-pbfr3.width)then
  begin
```

```
  pbfr3.visible:=false;
  tmrbuf3.enabled:=false;
  pbfr[3].status:=0;
  pbfr3.top:=koordmasuktop;
  pbfr3.left:=koordmasukleft+(2*24);
  paketsim:=paketsim-1;
  sim.text:=inttostr(paketsim);
  if paketsim>jumpaketsim then
sim.Color:=clred;
  end;
end;
procedure TForm1.tmrbuf4Timer(Sender:
TObject);
begin
pbfr4.left:=pbfr4.left+1;
pbfr[4].status:=1;
if
(pbfr4.left>=koordsekat[strtoint(edit12.text)+1])
or(pbfr4.left=batas-pbfr4.width)then
  begin
  pbfr4.visible:=false;
  tmrbuf4.enabled:=false;
  pbfr[4].status:=0;
  pbfr4.top:=koordmasuktop;
  pbfr4.left:=koordmasukleft+(3*24);
  paketsim:=paketsim-1;
  sim.text:=inttostr(paketsim);
  if paketsim>jumpaketsim then
sim.Color:=clred;
  end;
end;

function periksa (koordx,koordy
:integer):integer;
begin
if (((form1.pbfr1.brush.color) or
(form1.pbfr2.brush.color) or
(form1.pbfr3.brush.color) or
(form1.pbfr4.brush.color)
or (form1.pbfr5.brush.color) or
(form1.pbfr6.brush.color)) and
(form1.canvas.pixels[koordx,koordy])=clsilver)t
hen
periksa :=1
else periksa:=7;
end;

procedure TForm1.gate1Timer(Sender:
TObject);
var i,j,sekatke,k,js:integer;
begin
  for i:= strtoint(edit12.text)+1 downto 1  do
  begin
    if (pbfr1.Brush.Color and
form1.Canvas.pixels[koordsekat[i],koordbufer[
1].top])=clblack then
     saluran[1].sekatke[i]:=1
   else
    saluran[1].sekatke[i]:=0;
    js:= strtoint(edit12.text);
for j:= 1 to 12 do
    if (form1.canvas.pixels[koordsekat[1]-
j,koordbufer[1].top-16])=clblack then
    saluran[1].sekatke[1]:=1 else
saluran[1].sekatke[1]:=0;
for j:= 1 to round((strtoint(edit33.text))/pembagi)-1
do
    if
(form1.canvas.pixels[koordsekat[strtoint(edit12.tex
t)]+j,koordbufer[1].top-16])=clblack then
    slotakhir[1]:=1 else slotakhir[1]:=0;
end;

procedure TForm1.tmrbuf5Timer(Sender:
TObject);
begin
pbfr5.left:=pbfr5.left+1;
pbfr[5].status:=1;
  if
(pbfr5.left>=koordsekat[strtoint(edit12.text)+1])or(
pbfr5.left=batas-pbfr5.width)then
  begin
  pbfr5.visible:=false;
  tmrbuf5.enabled:=false;
  pbfr[5].status:=0;
  pbfr5.top:=koordmasuktop;
  pbfr5.left:=koordmasukleft+(4*24);
  paketsim:=paketsim-1;
  sim.text:=inttostr(paketsim);
  if paketsim>jumpaketsim then sim.Color:=clred;
  end;
end;

procedure TForm1.tmrbuf6Timer(Sender:
TObject);
begin
pbfr6.left:=pbfr6.left+1;
pbfr[6].status:=1;
  if
(pbfr6.left>=koordsekat[strtoint(edit12.text)+1])or(
pbfr6.left=batas-pbfr6.width)then
  begin
  pbfr6.visible:=false;
  tmrbuf6.enabled:=false;
  pbfr[6].status:=0;
  pbfr6.top:=koordmasuktop;
  pbfr6.left:=koordmasukleft+(5*24);
  paketsim:=paketsim-1;
  sim.text:=inttostr(paketsim);
  if paketsim>jumpaketsim then sim.Color:=clred;
  end;
end;

procedure TForm1.tmrbuf7Timer(Sender:
TObject);
begin
pbfr7.left:=pbfr7.left+1;
pbfr[7].status:=1;
  if
(pbfr7.left>=koordsekat[strtoint(edit12.text)+1])or(
pbfr7.left=batas-pbfr7.width)then
  begin
  pbfr7.visible:=false;
  tmrbuf7.enabled:=false;
  pbfr[7].status:=0;
  pbfr7.top:=koordmasuktop;
```

```
  pbfr7.left:=koordmasukleft+(6*24);
  paketsim:=paketsim-1;
  sim.text:=inttostr(paketsim);
  if paketsim>jumpaketsim then
sim.Color:=clred;
  end;
end;

procedure TForm1.gate2Timer(Sender:
TObject);
var i,j,sekatke:integer;
begin
  for i:= strtoint(edit12.text)+1 downto 1  do
  begin
    if (pbfr1.Brush.Color and
form1.Canvas.pixels[koordsekat[i],koordbufer[
2].top])=clblack then saluran[2].sekatke[i]:=1
    else saluran[2].sekatke[i]:=0;
  end;
   for j:= 1 to 5 do
    if (form1.canvas.pixels[koordsekat[1]-
j,koordbufer[2].top-16])=clblack then
     saluran[2].sekatke[1]:=1 else
saluran[2].sekatke[1]:=0;
  for j:= 1 to
round((strtoint(edit34.text))/pembagi)-1 do
     if
(form1.canvas.pixels[koordsekat[strtoint(edit12.
text)]+j,koordbufer[2].top-16])=clblack then
     slotakhir[2]:=1 else slotakhir[2]:=0;
end;

procedure TForm1.gate3Timer(Sender:
TObject);
var i,j,sekatke:integer;
begin
  for i:= strtoint(edit12.text)+1 downto 1  do
  begin
    if (pbfr1.Brush.Color and
form1.Canvas.pixels[koordsekat[i],koordbufer[
3].top])=clblack then saluran[3].sekatke[i]:=1
    else saluran[3].sekatke[i]:=0;
  end;
  for j:= 1 to 5 do
     if (form1.canvas.pixels[koordsekat[1]-
j,koordbufer[3].top-16])=clblack then
     saluran[3].sekatke[1]:=1 else
saluran[3].sekatke[1]:=0;
  for j:= 1 to
round((strtoint(edit35.text))/pembagi)-1 do
     if
(form1.canvas.pixels[koordsekat[strtoint(edit12.
text)]+j,koordbufer[3].top-16])=clblack then
     slotakhir[3]:=1 else slotakhir[3]:=0;
end;

procedure TForm1.gate4Timer(Sender:
TObject);
var i,j,sekatke:integer;
begin

  for i:= strtoint(edit12.text)+1 downto 1  do
  begin
    if (pbfr1.Brush.Color and
form1.Canvas.pixels[koordsekat[i],koordbufer[4].t
op])=clblack then saluran[4].sekatke[i]:=1
    else saluran[4].sekatke[i]:=0;
  end;
  for j:= 1 to 5 do
     if (form1.canvas.pixels[koordsekat[1]-
j,koordbufer[4].top-16])=clblack then
     saluran[4].sekatke[1]:=1 else
saluran[4].sekatke[1]:=0;
  for j:= 1 to round((strtoint(edit36.text))/pembagi)-
1 do
     if
(form1.canvas.pixels[koordsekat[strtoint(edit12.tex
t)]+j,koordbufer[4].top-16])=clblack then
     slotakhir[4]:=1 else slotakhir[4]:=0;
end;

procedure TForm1.tmrsekatTimer(Sender:
TObject);
var
i,j,tawal,jumspasi,jrkspasi1,jrkspasi2,jrkspasi3,jrks
pasi4,ttkawal1,ttkawal2,ttkawal3,ttkawal4:integer;
begin
// inisialisasi untuk buat garis spasi
jumspasi:=strtoint(edit12.text);
  jrkspasi1:=round((strtoint(edit33.text))/pembagi);
  jrkspasi2:=round((strtoint(edit34.text))/pembagi);
  jrkspasi3:=round((strtoint(edit35.text))/pembagi);
  jrkspasi4:=round((strtoint(edit36.text))/pembagi);
  ttkawal1:=100-jrkspasi1;
  ttkawal2:=178-jrkspasi2;
  ttkawal3:=178-jrkspasi3;
  ttkawal4:=256-jrkspasi4;
form1.canvas.pen.color:=clyellow;
  for i:=1 to jumspasi+5 do
    begin

form1.canvas.moveto(((ttkawal1)+(i*jrkspasi1)+1)
,10);

form1.canvas.lineto(((ttkawal1)+(i*jrkspasi1))+1,2
00);
    koordsekat[i]:=((ttkakhir1)+(i*jrkspasi1));
    end;
end;

procedure TForm1.Timer1Timer(Sender:
TObject);
begin
//shape8.brush.color:=(pbfr1.Brush.color and
form1.canvas.pixels[shape2.left+shape2.width+1,p
bfr1.top]);
end;

procedure TForm1.Timer19Timer(Sender:
TObject);
var i,j:integer;
spasi : array[1..16] of integer;
begin
spasi[1]:=bataspita-lebar1-paket11.left;
spasi[2]:=bataspita-lebar2-paket21.left;
spasi[3]:=bataspita-lebar3-paket31.left;
```

```
spasi[4]:=bataspita-lebar4-paket41.left;
spasi[5]:=bataspita-lebar5-paket51.left;
spasi[6]:=bataspita-lebar6-paket61.left;
spasi[7]:=bataspita-lebar7-paket71.left;
spasi[8]:=bataspita-lebar8-paket81.left;
spasi[9]:=bataspita-lebar9-paket91.left;
spasi[10]:=bataspita-lebar10-paket101.left;
spasi[11]:=bataspita-lebar11-paket111.left;
spasi[12]:=bataspita-lebar12-paket121.left;
spasi[13]:=bataspita-lebar13-paket131.left;
spasi[14]:=bataspita-lebar14-paket141.left;
spasi[15]:=bataspita-lebar15-paket151.left;
spasi[16]:=bataspita-lebar16-paket161.left;
for i := 1 to 15 do
  for j:= i+1 to 16 do
  if spasi[i]=spasi[j] then
  case j of
    1: paket11.left:=paket11.left-3;
    2: paket21.left:=paket21.left-3;
    3: paket31.left:=paket31.left-3;
    4: paket41.left:=paket41.left-3;
    5: paket51.left:=paket51.left-3;
    6: paket61.left:=paket61.left-3;
    7: paket71.left:=paket71.left-3;
    8: paket81.left:=paket81.left-3;
    9: paket91.left:=paket91.left-3;
    10: paket101.left:=paket101.left-3;
    11: paket111.left:=paket111.left-3;
    12: paket121.left:=paket121.left-3;
    13: paket131.left:=paket131.left-3;
    14: paket141.left:=paket141.left-3;
    15: paket151.left:=paket151.left-3;
    16: paket161.left:=paket161.left-3;
  end;
end;

procedure TForm1.tmrbuf8Timer(Sender:
TObject);
begin
pbfr8.left:=pbfr8.left+1;
pbfr[8].status:=1;
  if
(pbfr8.left>=koordsekat[strtoint(edit12.text)+1])
or(pbfr8.left=batas-pbfr8.width)then
  begin
  pbfr8.visible:=false;
  tmrbuf8.enabled:=false;
  pbfr[8].status:=0;
  pbfr8.top:=koordmasuktop;
  pbfr8.left:=koordmasukleft+(7*24);
  paketsim:=paketsim-1;
  sim.text:=inttostr(paketsim);
  if paketsim>jumpaketsim then
sim.Color:=clred;
  end;
end;

procedure TForm1.tmrbuf9Timer(Sender:
TObject);
begin
pbfr9.left:=pbfr9.left+1;
pbfr[9].status:=1;
  if
(pbfr9.left>=koordsekat[strtoint(edit12.text)+1])or(
pbfr9.left=batas-pbfr9.width) then
  begin
  pbfr9.visible:=false;
  tmrbuf9.enabled:=false;
  pbfr[9].status:=0;
  pbfr9.top:=koordmasuktop;
  pbfr9.left:=koordmasukleft+(8*24);
  paketsim:=paketsim-1;
  sim.text:=inttostr(paketsim);
  if paketsim>jumpaketsim then sim.Color:=clred;
  end;
end;

procedure TForm1.tmrbuf10Timer(Sender:
TObject);
begin
pbfr10.left:=pbfr10.left+1;
pbfr[10].status:=1;
  if
(pbfr10.left>=koordsekat[strtoint(edit12.text)+1])o
r(pbfr10.left=batas-pbfr10.width) then
  begin
  pbfr10.visible:=false;
  tmrbuf10.enabled:=false;
  pbfr[10].status:=0;
  pbfr10.top:=koordmasuktop;
  pbfr10.left:=koordmasukleft+(9*24);
  paketsim:=paketsim-1;
  sim.text:=inttostr(paketsim);
  if paketsim>jumpaketsim then sim.Color:=clred;
  end;
end;

procedure TForm1.tmrbuf11Timer(Sender:
TObject);
begin
pbfr11.left:=pbfr11.left+1;
pbfr[11].status:=1;
  if
(pbfr11.left>=koordsekat[strtoint(edit12.text)+1])o
r(pbfr11.left=batas-pbfr11.width) then
  begin
  pbfr11.visible:=false;
  tmrbuf11.enabled:=false;
  pbfr[11].status:=0;
  pbfr11.top:=koordmasuktop;
  pbfr11.left:=koordmasukleft+(10*24);
  pbfr11.width:=0;
  paketsim:=paketsim-1;
  sim.text:=inttostr(paketsim);
  if paketsim>jumpaketsim then sim.Color:=clred;
  end;
end;

procedure TForm1.tmrbuf12Timer(Sender:
TObject);
begin
pbfr12.left:=pbfr12.left+1;
pbfr[12].status:=1;
```

```
  if
(pbfr12.left>=koordsekat[strtoint(edit12.text)+1
])or(pbfr12.left=batas-pbfr12.width) then
  begin
  pbfr12.visible:=false;
  tmrbuf12.enabled:=false;
  pbfr[12].status:=0;
  pbfr12.top:=koordmasuktop;
  pbfr12.left:=koordmasukleft+(11*24);
  pbfr12.width:=0;
  paketsim:=paketsim-1;
  sim.text:=inttostr(paketsim);
  if paketsim>jumpaketsim then
sim.Color:=clred;
  end;
end;

procedure TForm1.tmrbuf13Timer(Sender:
TObject);
begin
pbfr13.left:=pbfr13.left+1;
pbfr[13].status:=1;
  if
(pbfr13.left>=koordsekat[strtoint(edit12.text)+1
])or(pbfr13.left=batas-pbfr13.width) then
  begin
  pbfr13.visible:=false;
  tmrbuf13.enabled:=false;
  pbfr[13].status:=0;
  pbfr13.top:=koordmasuktop;
  pbfr13.left:=koordmasukleft+(12*24);
  pbfr13.width:=0;
  paketsim:=paketsim-1;
  sim.text:=inttostr(paketsim);
  if paketsim>jumpaketsim then
sim.Color:=clred;
  end;
end;

procedure TForm1.tmrbuf14Timer(Sender:
TObject);
begin
pbfr14.left:=pbfr14.left+1;
pbfr[14].status:=1;
  if
(pbfr14.left>=koordsekat[strtoint(edit12.text)+1
])or(pbfr14.left=batas-pbfr14.width) then
  begin
  pbfr14.visible:=false;
  tmrbuf14.enabled:=false;
  pbfr[14].status:=0;
  pbfr14.top:=koordmasuktop;
  pbfr14.left:=koordmasukleft+(13*24);
  pbfr14.width:=0;
  paketsim:=paketsim-1;
  sim.text:=inttostr(paketsim);
  if paketsim>jumpaketsim then
sim.Color:=clred;
  end;
end;

procedure TForm1.tmrbuf15Timer(Sender:
TObject);
begin
pbfr15.left:=pbfr15.left+1;
pbfr[15].status:=1;
  if
(pbfr15.left>=koordsekat[strtoint(edit12.text)+1])o
r(pbfr15.left=batas-pbfr15.width) then
  begin
  pbfr15.visible:=false;
  tmrbuf15.enabled:=false;
  pbfr[15].status:=0;
  pbfr15.top:=koordmasuktop;
  pbfr15.left:=koordmasukleft+(14*24);
  pbfr15.width:=0;
  paketsim:=paketsim-1;
  sim.text:=inttostr(paketsim);
  if paketsim>jumpaketsim then sim.Color:=clred;
  end;
end;

procedure TForm1.tmrbuf16Timer(Sender:
TObject);
begin
pbfr16.left:=pbfr16.left+1;
pbfr[16].status:=1;
  if
(pbfr16.left>=koordsekat[strtoint(edit12.text)+1])o
r(pbfr16.left=batas-pbfr16.width)  then
  begin
  pbfr16.visible:=false;
  tmrbuf16.enabled:=false;
  pbfr[16].status:=0;
  pbfr16.top:=koordmasuktop;
  pbfr16.left:=koordmasukleft+(15*24);
  pbfr16.width:=0;
  paketsim:=paketsim-1;
  sim.text:=inttostr(paketsim);
  if paketsim>jumpaketsim then sim.Color:=clred;
  end;
end;

procedure TForm1.Edit9Change(Sender: TObject);
begin
if strtoint(edit9.text)=strtoint(edit17.text) then
begin
timer3.Enabled:=false;
timer4.Enabled:=false;
timer5.Enabled:=false;
timer6.Enabled:=false;
timer7.Enabled:=false;
timer8.Enabled:=false;
timer9.Enabled:=false;
timer10.Enabled:=false;
timer11.Enabled:=false;
timer12.Enabled:=false;
timer13.Enabled:=false;
timer14.Enabled:=false;
timer15.Enabled:=false;
timer16.Enabled:=false;
timer17.Enabled:=false;
timer18.Enabled:=false;
end;
end;
```

```
procedure TForm1.FormActivate(Sender:
TObject);
begin
tmrsekat.enabled:=false;
end;

procedure TForm1.suiButton1Click(Sender:
TObject);
var   jarak : array[1..16] of integer;
     tanda:integer;
     i,j,jrk,jbuf,jout:integer;

SetBkMode(Canvas.Handle,TRANSPARENT);
  Canvas.TextOut(spasikiri+47,spasiatas-
25,'INPUT INTERFACE');
   // inisialisasi SCISSOR sebagai FDL
   a:=strtofloat(edit23.text);
   b:=strtofloat(edit27.text);
   c:=strtofloat(edit28.text);
   v:=3e8;
   // SCISSOR1
   f:=(v/(1560e-9));
   e:=(c*((4*pi*pi*2*f)*a))/v;
   T:=((2*c*pi*a/v)*((1-b*b)/(1-
2*b*cos(e)+(b*b))));
   edit29.text:=floattostr(T);
   g:=round((strtofloat(edit29.text)*10e9)/8);
   edit33.text:=floattostr(g);

edit37.Text:=floattostr(strtoint(edit12.Text)*T);

edit41.Text:=floattostr(strtoint(edit12.Text)*g);
   //SCISSOR2
   ff:=(v/(1565e-9));
   ee:=(c*((4*pi*pi*2*ff)*a))/v;
   TT:=((2*c*pi*a/v)*((1-b*b)/(1-
2*b*cos(ee)+(b*b))));
   edit30.text:=floattostr(TT);
   gg:=round((strtofloat(edit30.text)*10e9)/8);
   edit34.text:=floattostr(gg);

edit38.Text:=floattostr(strtoint(edit12.Text)*TT
);

edit42.text:=floattostr(strtoint(edit12.Text)*gg);
   //SCISSOR3
   n:=(v/(1570e-9));
   o:=(c*((4*pi*pi*2*n)*a))/v;
   p:=((2*c*pi*a/v)*((1-b*b)/(1-
2*b*cos(o)+(b*b))));
   edit31.text:=floattostr(p);
   q:=round((strtofloat(edit31.text)*10e9)/8);
   edit35.text:=floattostr(q);

edit39.text:=floattostr(strtoint(edit12.Text)*p);

edit43.text:=floattostr(strtoint(edit12.Text)*q);
   //SCISSOR4
   nn:=(v/(1575e-9));
   oo:=(c*((4*pi*pi*2*nn)*a))/v;
   pp:=((2*c*pi*a/v)*((1-b*b)/(1-
2*b*cos(oo)+(b*b))));
   edit32.text:=floattostr(pp);
   qq:=round((strtofloat(edit32.text)*10e9)/8);
   edit36.text:=floattostr(qq);
   edit40.text:=floattostr(strtoint(edit12.Text)*pp);
   edit44.text:=floattostr(strtoint(edit12.Text)*qq);
   if (g>gg) and (g>q) and (g>qq)then
kapasitasspasi:=round((g)/pembagi)
   else if (gg>g) and (gg>q) and (gg>qq)then
kapasitasspasi:=round((gg)/pembagi)
   else if (q>g) and (q>gg) and (q>qq)then
kapasitasspasi:=round((q)/pembagi)
   else if (qq>g) and (qq>gg) and (qq>q)then
kapasitasspasi:=round((qq)/pembagi)
   else kapasitasspasi:=round((gg)/pembagi);
  paketloss:=0;
  totalpaket:=0;
  jrk:=round(400/16);
  tanda:=10;
  tem1:=5;
  t1:=0;
  paketsim:=0;
  edit10.text:='';
  sim.Color:=clwhite;
  timer3.Interval:=strtoint(edit8.text);
  timer4.Interval:=strtoint(edit8.text);
  timer5.Interval:=strtoint(edit8.text);
  timer6.Interval:=strtoint(edit8.text);
  timer7.Interval:=strtoint(edit8.text);
  timer8.Interval:=strtoint(edit8.text);
  timer9.Interval:=strtoint(edit8.text);
  timer10.Interval:=strtoint(edit8.text);
  timer11.Interval:=strtoint(edit8.text);
  timer12.Interval:=strtoint(edit8.text);
  timer13.Interval:=strtoint(edit8.text);
  timer14.Interval:=strtoint(edit8.text);
  timer15.Interval:=strtoint(edit8.text);
  timer16.Interval:=strtoint(edit8.text);
  timer17.Interval:=strtoint(edit8.text);
  timer18.Interval:=strtoint(edit8.text);
  tmrbuf1.Interval:= strtoint(edit8.text);
  tmrbuf2.Interval:= strtoint(edit8.text);
  tmrbuf3.Interval:= strtoint(edit8.text);
  tmrbuf4.Interval:= strtoint(edit8.text);
  tmrbuf5.Interval:= strtoint(edit8.text);
  tmrbuf6.Interval:= strtoint(edit8.text);
  tmrbuf7.Interval:= strtoint(edit8.text);
  begin
gate1.Enabled:=true;gate2.Enabled:=true;gate3.En
abled:=true;gate4.Enabled:=true
end;
 // inisialisasi jalur masuk
  for i:= 1 to 16 do
  begin
     jarak[i]:= jrk*i + 30;
  end;
// inisilisasi pembatas merah di masukan (input
synchronizer stage)
Canvas.pen.color := clred;
canvas.Pen.width:=1;
canvas.pen.style:=psDot;
canvas.moveto((tanda+96),(tanda+75));
canvas.lineto((tanda+96),(tanda+475));
jbuf:=kanal;
jout:=strtoint(edit3.text);
```

```
// inisialisasi gambar sekat
tmrsekat.enabled:=true;
// inisialisasi gambar saluran
buffer(jbuf,jout);
for i:= 1 to strtoint(edit12.text) do
jumsekat[i]:=0;
// inisialisasi paket
paket11.brush.Color:=clmaroon;
paket11.top:=spasiatas;
paket11.left:=spasikiri;
paket21.brush.Color:=$004080FF;
paket21.top:=spasiatas+25;
paket21.left:=spasikiri;
paket31.brush.Color:=clgray;
paket31.top:=spasiatas+50;
paket31.left:=spasikiri;
paket41.brush.Color:=$0000D2D2;
paket41.top:=spasiatas+75;
paket41.left:=spasikiri;
paket51.brush.Color:=clmaroon;
paket51.top:=spasiatas+100;
paket51.left:=spasikiri;
paket61.brush.Color:=$004080FF;
paket61.top:=spasiatas+125;
paket61.left:=spasikiri;
paket71.brush.Color:=clgray;
paket71.top:=spasiatas+150;
paket71.left:=spasikiri;
paket81.brush.Color:=$0000D2D2;
paket81.top:=spasiatas+175;
paket81.left:=spasikiri;
paket91.top:=spasiatas+200;
paket91.left:=spasikiri;
paket101.top:=spasiatas+225;
paket101.left:=spasikiri;
paket111.top:=spasiatas+250;
paket111.left:=spasikiri;
paket121.top:=spasiatas+275;
paket121.left:=spasikiri;
paket131.top:=spasiatas+300;
paket131.left:=spasikiri;
paket141.top:=spasiatas+325;
paket141.left:=spasikiri;
paket151.top:=spasiatas+350;
paket151.left:=spasikiri;
paket161.top:=spasiatas+375;
paket161.left:=spasikiri;
//inisialisasi input interface
ket1.left:=spasikiri+72;
ket1.top:=spasiatas;
ket2.left:=spasikiri+72;
ket2.top:=spasiatas+25;
ket3.left:=spasikiri+72;
ket3.top:=spasiatas+50;
ket4.left:=spasikiri+72;
ket4.top:=spasiatas+75;
ket5.left:=spasikiri+72;
ket5.top:=spasiatas+100;
ket6.left:=spasikiri+72 ;
ket6.top:=spasiatas+125;
ket7.left:=spasikiri+72 ;
ket7.top:=spasiatas+150;
ket8.left:=spasikiri+72 ;
ket8.top:=spasiatas+175;
ket9.left:=spasikiri+72 ;
ket9.top:=spasiatas+200;
ket10.left:=spasikiri+72 ;
ket10.top:=spasiatas+225;
ket11.left:=spasikiri+72 ;
ket11.top:=spasiatas+250;
ket12.left:=spasikiri+72 ;
ket12.top:=spasiatas+275;
ket13.left:=spasikiri+72 ;
ket13.top:=spasiatas+300;
ket14.left:=spasikiri+72 ;
ket14.top:=spasiatas+325;
ket15.left:=spasikiri+72 ;
ket15.top:=spasiatas+350;
ket16.left:=spasikiri+72 ;
ket16.top:=spasiatas+375;
end;
procedure TForm1.suiButton2Click(Sender:
TObject);
var  Bitmap: TBitmap; i:integer;
begin
Bitmap := nil;
  try
    Bitmap := TBitmap.Create;
    Bitmap.Width :=
koordsekat[strtoint(edit12.text)+10];
    Bitmap.Height := 520;
    Image1.Picture.Graphic := Bitmap;
    Image1.Picture.Graphic := nil;
  finally
    Bitmap.Free;
  end;
tmrsekat.Enabled:=false;
timer3.Enabled:=false;
timer4.Enabled:=false;
timer5.Enabled:=false;
timer6.Enabled:=false;
timer7.Enabled:=false;
timer8.Enabled:=false;
timer9.Enabled:=false;
timer10.Enabled:=false;
timer11.Enabled:=false;
timer12.Enabled:=false;
timer13.Enabled:=false;
timer14.Enabled:=false;
timer15.Enabled:=false;
timer16.Enabled:=false;
timer17.Enabled:=false;
timer18.Enabled:=false;
paket11.Visible:=false;
paket21.Visible:=false;
paket31.Visible:=false;
paket41.Visible:=false;
paket51.Visible:=false;
paket61.Visible:=false;
paket71.Visible:=false;
paket81.Visible:=false;
paket91.Visible:=false;
paket101.Visible:=false;
paket111.Visible:=false;
paket121.Visible:=false;
paket131.Visible:=false;
```

```
paket141.Visible:=false;
paket151.Visible:=false;
paket161.Visible:=false;
//=======gate timer
gate1.Enabled:=false;
gate2.Enabled:=false;
gate3.Enabled:=false;
gate4.Enabled:=false;
gate5.Enabled:=false;
gate6.Enabled:=false;
gate7.Enabled:=false;
gate8.Enabled:=false;
gate9.Enabled:=false;
gate10.Enabled:=false;
gate11.Enabled:=false;
gate12.Enabled:=false;
gate13.Enabled:=false;
gate14.Enabled:=false;
gate15.Enabled:=false;
gate16.Enabled:=false;
//=================
totalpaket:=0;
paketloss:=0;
paketsim:=0;
memo1.clear;
memo2.clear;
edit10.text:='';
edit7.Text:='';
edit49.Text:='';
edit51.Text:='';
tmrsekat.enabled:=true;
sim.Color:=clwhite;
for i:= 1 to strtoint(edit12.text)+1 do
   jumsekat[i]:=0;
end;
procedure TForm1.suiButton3Click(Sender:
TObject);
begin
start;
tipealg:=3;
persiapan;
end;
procedure TForm1.suiButton4Click(Sender:
TObject);
var i,jumlah,tot:integer;  rata:real;
v,a,b,c,d,e,n,T:Real48;
begin
jumlah:=0;
tot:=0;
memo1.Clear;
for i:=1 to strtoint(edit12.text)+1 do
  jumlah:=jumlah+jumsekat[i];
for i:=1 to strtoint(edit12.text)+1 do
  tot:=tot+jumsekat[i]*((strtoint(edit12.text)+1)-
i);
  rata:=tot/jumlah;
edit7.text:=floattostr(rata);
//Perhitungan panjang kabel FDL lama
v:=3e8;
T:=10e9;
n:=strtofloat(edit54.text);
if ((strtoint(edit33.text))<(strtoint(edit34.text)))
and
((strtoint(edit33.text))<(strtoint(edit35.text))) and
((strtoint(edit33.text))<(strtoint(edit36.text)))then
a:=round(strtoint(edit41.text))
              else if
((strtoint(edit34.text))<(strtoint(edit33.text))) and
((strtoint(edit34.text))<(strtoint(edit35.text))) and
((strtoint(edit34.text))<(strtoint(edit36.text)))then
a:=round(strtoint(edit42.text))
              else if
((strtoint(edit35.text))<(strtoint(edit33.text))) and
((strtoint(edit35.text))<(strtoint(edit34.text))) and
((strtoint(edit35.text))<(strtoint(edit36.text)))then
a:=round(strtoint(edit43.text))
              else if
((strtoint(edit36.text))<(strtoint(edit33.text))) and
((strtoint(edit36.text))<(strtoint(edit34.text))) and
((strtoint(edit36.text))<(strtoint(edit35.text)))then
a:=round(strtoint(edit44.text))
            else a:=round(strtoint(edit41.text));
e:=(a*v*8)/(n*T);
edit49.text:=floattostr(e);
edit51.text:=floattostr(e*(strtofloat(edit50.text)/100
0));
end;

procedure TForm1.suiButton5Click(Sender:
TObject);
begin
application.Terminate;
end;

procedure TForm1.suiButton6Click(Sender:
TObject);
var
panjangtotal,losstotal,redaman,Jmlpaket,Jrkpaket,o
rde,R,rk,n,D1,D2,D3,D4,T1,T2,T3,T4,Ploss,avgdel
ay,st,nf:string;
begin
  Jmlpaket:=Edit18.Text;
  Jrkpaket:=Edit11.Text;
  orde:=Edit12.Text;
  R:=Edit23.Text;
  rk:=Edit27.Text;
  n:=Edit28.Text;
  D1:=Edit33.Text;
  D2:=Edit34.Text;
  D3:=Edit35.Text;
  D4:=Edit36.Text;
  T1:=Edit41.Text;
  T2:=Edit42.Text;
  T3:=Edit43.Text;
  T4:=Edit44.Text;
  Ploss:=Edit10.Text;
  avgdelay:=Edit7.Text;
  nf:=Edit54.Text;
  redaman:=Edit50.Text;
  panjangtotal:=Edit49.Text;
  losstotal:=Edit51.Text;
  st:='insert into TabelSimulasiScissor '+
'values('+#39+Jmlpaket+#39+','+#39+Jrkpaket+#3
9+','+#39+orde+#39+','+#39+R+#39+','+#39+rk+#
39+','+#39+n+#39+','+#39+D1+#39+','+#39+D2+#
39+','+#39+D3+#39+','+#39+D4+#39+','+#39+T1+
```

```
#39+','+#39+T2+#39+','+#39+T3+#39+','+#39+
T4+#39+','+#39+Ploss+#39+','+#39+avgdelay+
#39+','+#39+nf+#39+','+#39+redaman+#39+','+
#39+panjangtotal+#39+','+#39+losstotal+#39+')
';
  with DMS.aq do
  begin
   Close;
   sql.Clear;
   sql.Add(st);
   ExecSQL;
  end;
end;

procedure TForm1.suiButton7Click(Sender:
TObject);
begin
   Form2.suiButton5Click(self);
end;

end.


unit TampilTabelPercobaan;
interface
uses
  Windows, Messages, SysUtils, Variants,
Classes, Graphics, Controls, Forms,
  Dialogs, Grids, DBGrids, QRCtrls, QuickRpt,
ExtCtrls, SUIButton;
type
  TForm2 = class(TForm)
    TampilPercobaan: TDBGrid;
    Panel1: TPanel;
    Report: TQuickRep;
    QRBand6: TQRBand;
    QRLabel47: TQRLabel;
    QRLabel45: TQRLabel;
    QRShape18: TQRShape;
    QRShape21: TQRShape;
    QRShape22: TQRShape;
    QRShape31: TQRShape;
    QRShape11: TQRShape;
    QRShape13: TQRShape;
    QRLabel1: TQRLabel;
    DetailBand1: TQRBand;
    QRShape25: TQRShape;
    QRShape26: TQRShape;
    QRShape28: TQRShape;
    QRShape36: TQRShape;
    QRSysData4: TQRSysData;
    QRDBText2: TQRDBText;
    QRBand9: TQRBand;
    QRSysData5: TQRSysData;
    suiButton5: TsuiButton;
    QRLabel2: TQRLabel;
    QRShape1: TQRShape;
    QRLabel3: TQRLabel;
    QRShape2: TQRShape;
    QRLabel4: TQRLabel;
    QRLabel5: TQRLabel;
    QRLabel6: TQRLabel;
    QRShape3: TQRShape;
    QRShape4: TQRShape;
    QRLabel7: TQRLabel;
    QRShape5: TQRShape;
    QRShape6: TQRShape;
    QRShape7: TQRShape;
    QRLabel8: TQRLabel;
    QRShape8: TQRShape;
    QRLabel9: TQRLabel;
    QRShape14: TQRShape;
    QRShape16: TQRShape;
    QRShape27: TQRShape;
    QRLabel10: TQRLabel;
    QRShape29: TQRShape;
    QRLabel14: TQRLabel;
    QRShape30: TQRShape;
    QRLabel15: TQRLabel;
    QRShape32: TQRShape;
    QRShape42: TQRShape;
    QRShape43: TQRShape;
    QRLabel19: TQRLabel;
    QRLabel20: TQRLabel;
    QRLabel21: TQRLabel;
    QRShape34: TQRShape;
    QRShape35: TQRShape;
    QRShape41: TQRShape;
    QRShape44: TQRShape;
    QRShape45: TQRShape;
    QRShape47: TQRShape;
    QRShape49: TQRShape;
    QRLabel22: TQRLabel;
    QRLabel23: TQRLabel;
    QRLabel24: TQRLabel;
    QRShape20: TQRShape;
    QRLabel30: TQRLabel;
    QRShape23: TQRShape;
    QRLabel31: TQRLabel;
    QRShape24: TQRShape;
    QRLabel32: TQRLabel;
    QRShape33: TQRShape;
    QRShape37: TQRShape;
    QRShape51: TQRShape;
    QRShape48: TQRShape;
    QRLabel29: TQRLabel;
    QRShape52: TQRShape;
    QRShape53: TQRShape;
    QRShape54: TQRShape;
    QRLabel33: TQRLabel;
    QRLabel34: TQRLabel;
    QRLabel35: TQRLabel;
    QRLabel36: TQRLabel;
    QRDBText1: TQRDBText;
    QRDBText3: TQRDBText;
    QRDBText4: TQRDBText;
    QRDBText5: TQRDBText;
    QRDBText6: TQRDBText;
    QRShape9: TQRShape;
    QRShape10: TQRShape;
    QRShape12: TQRShape;
    QRLabel11: TQRLabel;
    QRLabel12: TQRLabel;
    QRLabel13: TQRLabel;
    QRDBText7: TQRDBText;
    QRDBText8: TQRDBText;
```

```
    QRDBText9: TQRDBText;
    QRDBText10: TQRDBText;
    QRLabel16: TQRLabel;
    QRLabel17: TQRLabel;
    QRLabel18: TQRLabel;
    procedure FormShow(Sender: TObject);
    procedure suiButton5Click(Sender: TObject);
  private
    { Private declarations }
  public
    procedure TampilkanPercobaan();
    { Public declarations }
  end;
var
  Form2: TForm2;
implementation
uses DM, DB, ADODB;
{$R *.dfm}
procedure Tform2.TampilkanPercobaan();
    var i:Integer;
begin
 with DMS.aq do
  begin
   Close;
   sql.Clear;
   sql.Add('select * from TabelSimulasiScissor
order by R asc,rk asc,n asc,orde asc');
    open;
  for i:=0 to DMS.aq.FieldCount-1 do
Form2.TampilPercobaan.Columns.Items[i].Fiel
dName:=DMS.aq.Fields[i].FieldName;
  end;
end;
procedure TForm2.FormShow(Sender:
TObject);
begin
   TampilkanPercobaan;
end;

procedure TForm2.suiButton5Click(Sender:
TObject);
begin
Form2.TampilkanPercobaan;
     with Report do
        begin
        Report.DataSet:=DMS.aq;
        QRDBText1.DataSet:=DMS.aq;
        QRDBText2.DataSet:=DMS.aq;
        QRDBText3.DataSet:=DMS.aq;
        QRDBText4.DataSet:=DMS.aq;
        QRDBText5.DataSet:=DMS.aq;
        QRDBText6.DataSet:=DMS.aq;
        QRDBText7.DataSet:=DMS.aq;
        QRDBText8.DataSet:=DMS.aq;
        QRDBText9.DataSet:=DMS.aq;
        QRDBText10.DataSet:=DMS.aq;
QRDBText1.DataField:=DMS.aq.Fields[1].Fiel
dName;
QRDBText2.DataField:=DMS.aq.Fields[0].Fiel
dName;
QRDBText3.DataField:=DMS.aq.Fields[2].Fiel
dName;
QRDBText4.DataField:=DMS.aq.Fields[3].FieldN
ame;
QRDBText5.DataField:=DMS.aq.Fields[4].FieldN
ame;
QRDBText6.DataField:=DMS.aq.Fields[5].FieldN
ame;
QRDBText7.DataField:=DMS.aq.Fields[6].FieldN
ame;
QRDBText8.DataField:=DMS.aq.Fields[7].FieldN
ame;
QRDBText9.DataField:=DMS.aq.Fields[8].FieldN
ame;
QRDBText10.DataField:=DMS.aq.Fields[9].Field
Name;
         RepTabel.Preview;
        end;
end;
end.


unit DM;
interface
uses
  SysUtils, Classes, DB, ADODB;
type
  TDMS = class(TDataModule)
    ADC: TADOConnection;
    aq: TADOQuery;
    ds: TDataSource;
    av: TADOQuery;
  private
    { Private declarations }
  public
    { Public declarations }
  end;
var
  DMS: TDMS;
implementation
{$R *.dfm}
end.



function varargout = TA1(varargin)
gui_Singleton = 1;
gui_State = struct('gui_Name',       mfilename, ...
                   'gui_Singleton',  gui_Singleton, ...
                   'gui_OpeningFcn',
@TA1_OpeningFcn, ...
                   'gui_OutputFcn',     @TA1_OutputFcn,
...
                   'gui_LayoutFcn',  [] , ...
                   'gui_Callback',   []);

if nargin && ischar(varargin{1})
    gui_State.gui_Callback = str2func(varargin{1});
end

if nargout
    [varargout{1:nargout}]                              =
gui_mainfcn(gui_State, varargin{:});
else
    gui_mainfcn(gui_State, varargin{:});
```

```
end

function TA1_OpeningFcn(hObject, eventdata, handles, varargin)
handles.output = hObject;
guidata(hObject, handles);

function varargout = TA1_OutputFcn(hObject, eventdata, handles)
varargout{1} = handles.output;
function radiobutton1_Callback(hObject, eventdata, handles)
g=handles;
if get(g.radiobutton1,'value')==1
   set(g.radiobutton2,'value',0);
   set(g.radiobutton3,'value',0);
end

function radiobutton2_Callback(hObject, eventdata, handles)
g=handles;
if get(g.radiobutton2,'value')==1
   set(g.radiobutton1,'value',0);
   set(g.radiobutton3,'value',0);
end

function radiobutton3_Callback(hObject, eventdata, handles)
g=handles;
if get(g.radiobutton3,'value')==1
   set(g.radiobutton1,'value',0);
   set(g.radiobutton2,'value',0);
end

function edit11_Callback(hObject, eventdata, handles)
function edit11_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit12_Callback(hObject, eventdata, handles)
function edit12_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit13_Callback(hObject, eventdata, handles)
function edit13_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit14_Callback(hObject, eventdata, handles)
function edit14_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit15_Callback(hObject, eventdata, handles)
function edit15_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit16_Callback(hObject, eventdata, handles)
function edit16_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit17_Callback(hObject, eventdata, handles)
function edit17_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit18_Callback(hObject, eventdata, handles)
function edit18_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit19_Callback(hObject, eventdata, handles)
function edit19_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit20_Callback(hObject, eventdata, handles)
```

```
function edit20_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit21_Callback(hObject, eventdata, handles)
function edit21_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit22_Callback(hObject, eventdata, handles)
function edit22_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit23_Callback(hObject, eventdata, handles)
function edit23_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit24_Callback(hObject, eventdata, handles)
function edit24_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit25_Callback(hObject, eventdata, handles)
function edit25_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit26_Callback(hObject, eventdata, handles)
function edit26_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit27_Callback(hObject, eventdata, handles)
function edit27_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit28_Callback(hObject, eventdata, handles)
function edit28_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit29_Callback(hObject, eventdata, handles)
function edit29_CreateFcn(hObject, eventdata, handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function pushbutton1_Callback(hObject, eventdata, handles)
g=handles;
if get(g.radiobutton1,'value')==1;
   N=get(g.edit26,'string');
   R=get(g.edit20,'string');
   r=get(g.edit21,'string');
   j=get(g.edit11,'string');
   k=get(g.edit12,'string');
   l=get(g.edit13,'string');
   n=get(g.edit27,'string');
   N=str2num(N);
   R=str2num(R);
   r=str2num(r);
   j=str2num(j);
   k=str2num(k);
   l=str2num(l);
   n=str2num(n);
   f=j:k:l;
   c=3e8;
   a=n.*(4.*pi.^2.*(c./f)).*R./c;
   T=N.*((2.*n.*pi.*R./c).*((1-r.^2)./(1-
2.*r.*cos(a)+r.^2)));
   axes(g.axes1);
   plot(f,T);
elseif get(g.radiobutton2,'value')==1;
   N=get(g.edit26,'string');
```

```
    f=get(g.edit22,'string');
    r=get(g.edit23,'string');
    J=get(g.edit14,'string');
    K=get(g.edit15,'string');
    L=get(g.edit16,'string');
    n=get(g.edit28,'string');
    N=str2num(N);
    f=str2num(f);
    r=str2num(r);
    J=str2num(J);
    K=str2num(K);
    L=str2num(L);
    n=str2num(n);
    R=J:K:L;
    c=3e8;
    a=n.*(4.*pi.^2.*(c./f)).*R./c;
    T=N.*((2.*n.*pi.*R./c).*((1-r.^2)./(1-
2.*r.*cos(a)+r.^2)));
    axes(g.axes1);
    plot(R,T);
else get(g.radiobutton3,'value')==1;
    N=get(g.edit26,'string');
    f=get(g.edit24,'string');
    R=get(g.edit25,'string');
    s=get(g.edit17,'string');
    t=get(g.edit18,'string');
    u=get(g.edit19,'string');
    n=get(g.edit29,'string');
    N=str2num(N);
    f=str2num(f);
    R=str2num(R);
    s=str2num(s);
    t=str2num(t);
    u=str2num(u);
    n=str2num(n);
    r=s:t:u;
    c=3e8;
    a=n.*(4.*pi.^2.*(c./f)).*R./c;
    T=N.*((2.*n.*pi.*R./c).*((1-r.^2)./(1-
2.*r.*cos(a)+r.^2)));
    axes(g.axes1);
    plot(r,T);
end;

function edit41_Callback(hObject, eventdata,
handles)
function edit41_CreateFcn(hObject, eventdata,
handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function edit42_Callback(hObject, eventdata,
handles)
function edit42_CreateFcn(hObject, eventdata,
handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function edit43_Callback(hObject, eventdata,
handles)
function edit43_CreateFcn(hObject, eventdata,
handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function edit44_Callback(hObject, eventdata,
handles)
function edit44_CreateFcn(hObject, eventdata,
handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function edit45_Callback(hObject, eventdata,
handles)
function edit45_CreateFcn(hObject, eventdata,
handles)
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function pushbutton3_Callback(hObject,
eventdata, handles)
g=handles;
    N=get(g.edit46,'string');
    f=get(g.edit41,'string');
    R=get(g.edit42,'string');
    r=get(g.edit43,'string');
    n=get(g.edit44,'string');
    h=get(g.edit48,'string');
    b=get(g.edit51,'string');
    N=str2num(N);
    f=str2num(f);
    R=str2num(R);
    r=str2num(r);
    n=str2num(n);
    h=str2num(h);
    b=str2num(b);
    c=3e8;
    i=h./1000;
    a=n.*(4.*pi.^2.*(c./f)).*R./c;
    T=N.*((2.*n.*pi.*R./c).*((1-r.^2)./(1-
2.*r.*cos(a)+r.^2)));
    S=(c./b).*T;
    L=i.*S;
    T=num2str(T);
    set(g.edit45,'string',T);
    S=num2str(S);
    set(g.edit47,'string',S);
    L=num2str(L);
    set(g.edit49,'string',L);
```

```
function edit46_Callback(hObject, eventdata,
handles)
function edit46_CreateFcn(hObject, eventdata,
handles)
if                ispc                &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit47_Callback(hObject, eventdata,
handles)
function edit47_CreateFcn(hObject, eventdata,
handles)
if                ispc                &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit48_Callback(hObject, eventdata,
handles)
function edit48_CreateFcn(hObject, eventdata,
handles)
if                ispc                &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit49_Callback(hObject, eventdata,
handles)
function edit49_CreateFcn(hObject, eventdata,
handles)
if                ispc                &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end

function edit51_Callback(hObject, eventdata,
handles)
function edit51_CreateFcn(hObject, eventdata,
handles)
if                ispc                &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
   set(hObject,'BackgroundColor','white');
end
```