

LAMPIRAN A:
MATLAB

```

% -----%
% -----Program pendekodean error dan erasure pada kode Reed Solomon -----%
% -----Menggunakan algoritma Berlekamp Massey-----%
% -----%

clear;
close all;
clc;
% -----Parameter kode Reed Solomon -----%
m=4; %-----menetapkan Galois Field, GF(2^m)-----%
n=2^m-1; % -----panjang codeword-----%
k=3; %-----jumlah simbol data antara 1 - n-1-----%
h=n-k
t=h/2

%-----membangkitkan Galois Field dan membangkitkan polinomial-----%
%-----membentuk Galois Field-----%

field = gftuple([-1:2^m-2]', m, 2);

%-----Polinomial pembangkit-----%
%----Polinomial pembangkit cara untuk mendekodekan kode Reed Solomon-----%
%----Membentuk polinomial pembangkit-----%
c = [1 0];
p(1) = c(1);

```

```

for i = 1:h-1
    p(1) = gfmul(p(1),1,field);
    p(2) = 0;
    c = gfconv(c,p,field);
end
g = c;

%-----encoding Reed Solomon-----%
%-----memasukkan data random-----%
DATA_IN = randint(1,k,[-1 n-1]);

%----encoding Reed Solomon-----%
parity = RS_ENC4(DATA_IN,n,k,g,field);
RS_CODE = [parity DATA_IN];
%-----Channel-----%
RECEIVED = RS_CODE

%-----Jika ada error-----%

RECEIVED(3) = gfadd(RECEIVED(3),randint(1,1,[-1 n-
1]),field);
RECEIVED(5) = gfadd(RECEIVED(3),randint(1,1,[-1 n-
1]),field);

%-----jika ada erasures-----%
erasures = [2 5 9];
%----polynomial berisi letak erasures-----%
% erasures = [1 7 9];
%-----polynomial ini berisi letak erasures-----%

```

```

RECEIVED(2) = -2
RECEIVED(5) = -1
RECEIVED(9) = -2

% RECEIVED(1) = -2
% RECEIVED(7) = -2
% RECEIVED(9) = -2

%-----Pendekodean-----%

DECODED = RS_E_E_DEC(RECEIVED, erasures,n,k,t,h,g,field);

%*****

if all(DECODED == RS_CODE)
    disp('Decoding Success')
else
    disp('Decoding Failure')
end

```