

ABSTRAK

Asymmetrical game merupakan game di mana setiap orang belum tentu memainkan game dengan gameplay yang sama. Dalam *game cooperative asymmetrical* player di tantang untuk memadukan tugas dan kekuatan yang dimiliki tiap orang untuk menyelesaikan suatu tantangan. Karena perbedaannya tugas tugas yang dimiliki maka koordinasi dan kerja sama menjadi lebih penting dibanding permainan *cooperative* lain. Dengan mengembangkan game *Asymmetrical cooperative multiplayer* dimana dua team harus bertanding melawan 1 sama lain. Player di setiap team akan ditantang untuk bekerja sama melawan team lain. Dengan menggunakan *unity game engine* pembuatan multiplayer game dapat dilakukan dengan atribut-atribut yang telah dimiliki engine tersebut.

Kata kunci: *Unity, Asymmetrical, Cooperative Multiplayer.*



ABSTRACT

Asymmetrical game is a game where the people playing it may not have the same gameplay as other people playing the game. In Asymmetrical Cooperative game Player are challenged to use their difference to achieve a goal. Because of the different Gameplay and ability, cooperation become a key factor in winning a game. Developing a asymmetrical cooperative multiplayer game where 2 team have to compete with each makes so that each player have to cooperate with their teammate to defeat the opposing team. Using Unity game engine which already have Unity Networking (Unet) we can make a game using the attribute that unity already give.

Keywords: Unity, Asymmetrical, Cooperative multiplayer.



DAFTAR ISI

PRAKATA.....	2
ABSTRAK	4
ABSTRACT.....	5
DAFTAR ISI.....	vi
DAFTAR GAMBAR	xii
BAB 1 PENDAHULUAN	1
1.1 Latar Belakang	1
1.2 Rumusan Masalah	2
1.3 Tujuan Pembahasan	2
1.4 Ruang Lingkup.....	3
1.5 Sumber Data.....	3
1.6 Sistematika Penyajian	4
BAB 2 KAJIAN TEORI	5
2.1 Video Game	5
2.1.1 Genre Game	5
2.1.2 Sudut pandang dalam game	6
2.2 Video Game Design	8
2.2.1 MDA Framework	8
2.3 Cooperative Game.....	9
2.4 Asymmetric Cooperative Game	9
2.4.1 Implementasi asymmetrical gameplay pada multiplayer game	10
2.4.1.1 Implementasi Asymmetrical Gameplay pada Evolve	10
2.4.1.2 Implementasi asymmetrical gameplay pada New Super Mario Bros U.....	11

2.4.1.3 Implementasi asymmetrical gameplay pada Battlefield 4	12
2.5 Color Theory	13
2.5.1 Color In Games	15
2.6 User Interface	17
2.7 Game Engine	20
2.7.1 Game Engine Components.....	20
2.7.1.1 Rendering engine	20
2.7.1.2 Scripting	21
2.7.1.3 Physics and collisions engine	21
2.7.1.4 Audio engine	21
2.7.2 Unity.....	22
2.7.3 Fitur dalam Unity 3D	22
2.7.4 Unity networking	24
2.8 Game Design Document	27
2.8.1 Project Description.....	28
2.8.2 Characters.....	28
2.8.3 Story	28
2.8.4 Gameplay	28
2.8.4.1 Goals	28
2.8.4.2 User Skills	29
2.8.4.3 Game Mechanics	29
2.8.4.4 Items and power-ups	29
2.8.4.5 Losing.....	29
2.8.5 ArtStyle	30
2.8.6 Music and Sounds	30
2.8.7 Demographics	30

BAB 3 ANALISIS DAN RANCANGAN SISTEM.....	31
3.1 Game Description.....	31
3.2 Gameplay	31
3.2.1 Goal.....	31
3.2.2 Gameplay Asymmetricality	32
3.2.3 Player Character	32
3.2.3.1 Tank	32
3.2.3.2 Commander	34
3.3 Game Object.....	35
3.3.1 Sound and music	36
3.4 Flowchart game.....	37
3.5 Game Use Case	38
3.6 Play Game Use Case	39
3.7 Activity Diagram Host Game.....	40
3.8 Activity Diagram Join Game	41
3.9 Activity Diagram Movement	42
3.10 Activity Diagram Shoot	43
3.11 Activity Diagram skill.....	44
3.12 Activity Diagram scan.....	45
3.13 Game Class Diagram	46
3.13.1 Class Diagram GameManager	47
3.13.2 Class Diagram HostGame	47
3.13.3 Class Diagram JoinGame	48
3.13.4 Class Diagram RoomListItem	48
3.13.5 Class Diagram PlayerUI.....	49
3.13.6 Class Diagram PlayerController	49

3.13.7 Class Diagram PlayerMotor	50
3.13.8 Class Diagram BillBoard	50
3.13.9 Class Diagram WinScreen	51
3.13.10 Class Diagram CommanderController	51
3.13.11 Class Diagram HealthPack.....	51
3.13.12 Class Diagram AmmoPack	52
3.13.13 Class Diagram TrapScript	52
3.13.14 Class Diagram BulletScript.....	53
3.13.15 Class Diagram PauseMenu	53
3.13.16 Class Diagram Player	54
3.13.17 Class Diagram PlayerShoot.....	54
3.13.18 Class Diagram PlayerSetup	55
3.13.19 Class Diagram Commander	55
3.13.20 Class Diagram CommanderSetup	56
3.13.21 Class Diagram TurretController.....	56
3.13.22 Class Diagram ScoreUI.....	57
3.14 User Interface	57
3.14.1 User Interface Lobby.....	57
3.14.2 User interface Soldier Game view	58
3.14.3 User interface Commander Game view	59
3.14.4 User interface Commander Game view ketika menggunakan scan...	60
3.14.5 User interface Commander Game view ketika scan berhasil menganai musuh	60
BAB 4 Implementasi.....	61
4.1 Implementasi Class diagram	61
4.1.1 Implementasi Class MyNetworkManager.....	61

4.1.2 Implementasi Class GameManager.....	62
4.1.3 Implementasi Class HostRoom.....	63
4.1.4 Implementasi Class JoinRoom.....	64
4.1.5 Implementasi Class Player	65
4.1.6 Implementasi Class PlayerSetup	66
4.1.7 Implementasi Class PlayerMotor	66
4.1.8 Implementasi Class PlayerController.....	67
4.1.9 Implementasi Class PlayerShoot.....	67
4.1.10 Implementasi Class PlayerUI.....	68
4.1.11 Implementasi Class PauseMenu.....	69
4.1.12 Implementasi Class ScoreUI.....	69
4.1.13 Implementasi Class Commander.....	69
4.1.14 Implementasi Class CommanderController	70
4.1.15 Implementasi Class BulletScript.....	70
4.1.16 Implementasi Class HealthPackScript	71
4.1.17 Implementasi Class AmmoPackScript.....	71
4.2 Tampilan game.....	72
4.2.1 Lobby Menu.....	72
4.2.2 Gameplay dari sudut pandang tank.....	73
4.2.3 Leave room Screen.....	74
4.2.4 Gameplay dari sudut pandang Commander	74
4.2.5 Commander Scan musuh	75
BAB 5 Pengujian	76
5.1 Survei	76
5.1.1 Pertanyaan Survei.....	76
5.1.2 Hasil Survei.....	78

5.2 Blackbox Testing	87
5.2.1 Lobby	87
5.2.2 Gameplay Tank	89
5.2.3 Gameplay Commander	90
BAB 6 SIMPULAN DAN SARAN.....	92
6.1 Simpulan	92
6.2 Saran.....	92
DAFTAR PUSTAKA	93



DAFTAR GAMBAR

Gambar 2.1 Salah satu contoh FPS view [5]	7
Gambar 2.2 salah satu contoh TPS view [9]	7
Gambar 2.3 Salah satu contoh RTS view [7]	7
Gambar 2.4 pemecahan komponen dalam game.....	8
Gambar 2.5 MDA framework.....	8
Gambar 2.6 Designer dan player memiliki perbedaan perspektif.....	9
Gambar 2.7 Keep Talking and Nobody Explode Salah satu game Asymmetric [13]	10
Gambar 2.8 Hunter Gameplay dimainkan di perspektif <i>first person shooter</i> [14]	11
Gambar 2.9 Monster Gameplay dimainkan di perspektif <i>third person shooter</i> [14]	11
Gambar 2.10 Player menggunakan Wii U kontroler membantu player yang memainkan mario [15]	12
Gambar 2.11 Gameplay dari commander di dalam game battlefield 4 [6].....	13
Gambar 2.12 Color Theory	15
Gambar 2.13 warna dari game <i>team fortress 2</i> memberikan kesan agresif [18]...	16
Gambar 2.14 Game portal yang telah dikenal oleh warna biru dan oranye nya [18]	16
Gambar 2.15 Game SuperHot yang membedakan musuh dengan warna merah terang [19]	17
Gambar 2.16 Metro 2033 Diegetic UI [21].....	18
Gambar 2.17 bercak darah di dalam game call of duty [22].....	18
Gambar 2.18 fable 3 penunjuk arah [22]	19

Gambar 2.19 UI 2D HUB pada Game World of Warcraft [7].....	19
Gambar 2.20 UI Unity 3D <i>game engine</i>	22
Gambar 2.21 Contoh <i>SyncVar</i> dalam program [26].....	25
Gambar 2.22 Contoh atribut Server dan Client [26].....	25
Gambar 2.23 Contoh <i>Commands</i> [26]	26
Gambar 2.24 Contoh <i>ClientRPC</i> [26]	27
Gambar 3.1 Soldier Tank	32
Gambar 3.2 Game Flowchart	37
Gambar 3.3 Game Use Case	38
Gambar 3.4 Play game use case	39
Gambar 3.5 Host Game Activity diagram.....	40
Gambar 3.6 Join Game activity diagram.....	41
Gambar 3.7 Movement Activity Diagram	42
Gambar 3.8 Shoot activity diagram	43
Gambar 3.9 activity diagram skill.....	44
Gambar 3.10 activity diagram scan.....	45
Gambar 3.11 Game Class diagram	46
Gambar 3.12 Class GameManager	47
Gambar 3.13 Class HostGame	47
Gambar 3.14 Class Join Game	48
Gambar 3.15 Class RoomListItem.....	48
Gambar 3.16 Class PlayerUI.....	49
Gambar 3.17 Class PlayerController.....	49

Gambar 3.18 Class PlayerMotor	50
Gambar 3.19 Class Billboard	50
Gambar 3.20 Class WinScreen	51
Gambar 3.21 Class CommanderController	51
Gambar 3.22 Class HealthPack.....	52
Gambar 3.23 Class AmmoPack	52
Gambar 3.24 Class TrapScript	52
Gambar 3.25 Class BulletScript.....	53
Gambar 3.26 Class PauseMenu.....	53
Gambar 3.27 Class Player	54
Gambar 3.28 Class PlayerShoot.....	54
Gambar 3.29 Class PlayerSetup	55
Gambar 3.30 Class Commander	55
Gambar 3.31 Class CommanderSetup	56
Gambar 3.32 Class TurretController.....	56
Gambar 3.33 Class ScoreUI.....	57
Gambar 3.34 Lobby user interface.....	57
Gambar 3.35 Soldier View UI	58
Gambar 3.36 Commander View user interface.....	59
Gambar 3.37 User interface ketika menggunakan scan	60
Gambar 3.38 user interface ketika scan berhasil mengenai musuh	60
Gambar 4.1 Lobby Menu	72
Gambar 4.2 Gameplay dari sudut pandang tank	73

Gambar 4.3 Leave room screen	74
Gambar 4.4 Scan Screen	75
Gambar 4.5 Scan berhasil mengenai musuh	75

