

MineForest

GAME DESIGN DOCUMENT (GDD)

“Run Forest Run”

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Table of Contents

1 Introduction	3
1.1 Scope	3
1.2 Genre	3
1.3 Player Type	3
2 Game Analysis	3
2.1 Concept	3
2.2 Game Structure	3
2.3 Players	3
2.4 Action	3
3 Game Technical	4
3.1 Technical form	4
3.2 View	4
3.3 Platform	4
3.4 Language	4
3.5 Device	4
4 Game Play	4
4.1 Landscape	4
4.2 Ground Type	4
4.3 Object Types	5
4.4 Enemies	5
4.4 Levels	5
4.5 Winning	5
4.6 Losing	5
4.7 End	5
5 Key Features	5
5.1 Enemy AI	5
5.2 FPS player	6
5.3 Main Menu	7
5.4 Graphics	7
5.5 Sounds	7
5.6 MiniMap camera	7

1 Introduction

This document specifies a design for the gameplay of a game with the title “MineForest”. It is developed by Kyriacos Papavasileiou and Revekka Kalli for the purposes of the subject, EPL 653-Computer games software technique at the University of Cyprus.

1.1 Scope

This document is intended to be read by teachers of EPL 653 subject, at University of Cyprus, Panayiotis Charalambous, and Christos Othonos.

1.2 Genre

The game type is Role-play focussed on Action and Adventure.

1.3 Player Type

The Player type is First Person Shooter (FPS).

2 Game Analysis

2.1 Concept

The aim of “MineForest” is to produce a fun, addictive and fictional FPS-game where the player can run, shoot and kill different kind of enemies and steal their precious Gemstones (gems). The game takes place in a Forest full of mines on a windy day (Level 1) and a windy night (Level2).

2.2 Game Structure

The game involves activities such as shooting, collecting, chasing and combat. There are 2 levels, daytime and nighttime, with different graphic style for each one. There are also different kind of enemies, weapons and sounds in each level. In order to play Level 2 you must first win Level 1 otherwise you start over. The aim is to catch the big fancy diamond of each Level to win.

2.3 Players

The game is playable by one player who is the FPS player.

2.4 Action

The FPS player will be able to switch between different kinds of weapons, and kill his enemies. He must first catch some cool gemstones which are protected by powerful guards and then go for the big diamond at the end of the field. Thus he will get attacked and even killed sometimes before he finishes his mission.

3 Game Technical

3.1 Technical form

The playing world is 3D with multiple screens. Navigation mesh is used. A mini-map is supplied. The player can pause and exit the game at any time.

3.2 View

The player will experience the game from the “First-person movement” camera view.

3.3 Platform

The platform is the Unity Engine.

3.4 Language

Scripts are written in C#.

3.5 Device

The game can be played only on PC.

4 Game Play

4.1 Landscape

The landscape will consist of:

- Terrain
- Fench
- Mines
- Trees
- Rocks
- Bushes
- Mountains
- Ladders
- Lights
- Paths

The landscape will force the player to go in certain paths where the gems are.

4.2 Ground Type

Types of ground will include:

- Rocks
- Dust
- Grass

4.3 Object Types

Objects which can appear include:

- Wooden boxes
- Health boxes
- Gems
- Diamonds

4.4 Enemies

There are 3 types of enemies:

- Guards : they are protecting the yellow gems
- Enemies: they are patrolling, chasing and attacking without any weapon.
- Enemy Shooters: they are patrolling, chasing and attacking with weapons.

4.4 Levels

Level 1:

- Daylight
- Easy level
- Guards and enemies without weapons

Level 2:

- Night
- Hard level
- Guards, Enemies and Enemy shooters with weapons

4.5 Winning

The player can win only if he collect all the gems and then go for the big diamond.

4.6 Losing

The player can be killed by Guards, Enemies and Enemy shooters at any time.

4.7 End

The game ends at Level 2 when the orange diamond is caught.

5 Key Features

5.1 Enemy AI

Enemies have different AI modes.

Guards:

Guards are protecting the gems and when the player goes near the gem they are chasing him and attacking him. If the player runs away they go back and keep protecting the gems.

Enemies:

Enemies are patrolling in the terrain. When the player goes near them, they are chasing him down and attacking him (punch) causing him damage. If the player runs far away they go back to patrolling. They also get some rest when they are patrolling for a long time.

Enemy Shooters:

Enemy Shooters are the toughest ones. They have weapons in their possession and their states are chase, patrol, rest and attack as with the enemies. Their advantage is that with the weapons they can shoot the player from distance and kill him.

Guards are stable from the beginning of the game. Enemies and Enemy Shooters are randomly spawned through the Enemy Manager while playing the game.

5.2 FPS player

The Player begins with a good amount of health. He can walk or run in the field and with the use of Pop-up texts telling him if a gem is near he goes and catch them. The gems are protected by the guards so he has to pass through them first. In the meantime enemies are following him around in the field ready to cause him damage. On Level 2 they shoot them too. If he manages not to get killed, he has to collect all 7 yellow gems and go for the big diamond (blue in Level 1, orange in Level 2). In Level 2 he must be really careful as it is dark.

On the GUI, the player can see his health status, stamina status, and collected gems at any time.

He can also use the main menu to pause or exit the game.

He wins only if he pass both Levels.

The player has the ability to collect and switch between 4 kinds of weapons:

- Rifle
- Heavy gun
- Handgun (Pistol)
- Grenade

He has 3 different kinds of movement:

- Walk speed (Arrows)
- Acceleration (Left Shift key)
- Crouch (C key)
- Jump (space key)
- Shoot (ctrl key)

He has stamina thus when he runs he is losing power and has to wait for a while in order to get his power back.

The field is full of mines, thus when he steps on one his health is seriously damaged.

There are four health boxes available that if the player catches he can increase his health status.

5.3 Main Menu

The main menu is a feature that gives to the player the ability to pause the game and resume after a while, to go back to the main menu or even exit at any point. He can do it by simply pressing the Esc key.

5.4 Graphics

Level 1 is lighted with directional light. It is played in moody and windy weather (there is actual wind on the scene).

Level 2 has no directional light since it's night but it has also the wind that Level 1 has. The only light sources are the emission lamps on the terrain paths, the lights above the gems and diamond and also the player's night light (on his weapon).

5.5 Sounds

The game includes the following sounds:

- General scene sound (Level 1: wind sound, Level 2: "birdy" night sound)
- Player's Footsteps sound (different for walk, sprint, crouch, jump)
- Shooting sounds (different for each kind of weapon)
- Minefield sounds (mine explosion)

5.6 MiniMap camera

There is also a mini-map camera available, that is top-down and it shows the field.