

TRƯỜNG ĐẠI HỌC GIAO THÔNG VẬN TẢI
KHOA CÔNG NGHỆ THÔNG TIN

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BÀI TẬP LỚN MÔN HỌC

LÝ THUYẾT TRÒ CHƠI VÀ ỨNG DỤNG ĐỀ TÀI: BOMBERMAN 2D

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Nhóm thực hiện: Nhóm 04 - Lớp CNTT5 - K61

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Game Design Document

Section 1 - Game Overview

11 Game Title:

Bomberman

12 Game Genre:

Action/Adventure, Maze

13 Game Perspective:

Third person: Top-Down Perspective

14 Game Mode(s):

- Single player:
 - Adventure
 - vs BOT
 - Sandbox
- Multi player

15 Target Audience:

- Age 12-30
- Fans of adventure games with pixel graphics

16 Core Idea:

Bomberman begins with the protagonist "Bomberman" who worked day in and day out making bombs in an underground compound. One day, he accidentally got lost in an ancient dungeon. Here he fights with unknown enemies. He can use found items and kill enemies to reach other levels of the dungeon.

17 Goal:

Pass all the floors and get treasure.

18 Topic of game:

Dungeon adventure with destructive magic

Section 2 – Game Background & Game Flow

2.1 Background story:

An ancient dungeon system appeared before his eyes. With a longing for freedom and a desire to return, BM must continue to explore to find the way back. Looks like he's not the only one. Here appeared countless monsters, along with evil adventurers. The only way is to move forward and defeat all that stands in the way.

2.2 Characters Starting Story:

The character (a military engineer) accidentally entered a gate in the complex. The place where he reappeared was a huge ancient dungeon. The character doesn't know what happened here. With bomb-making skills and available materials, he must destroy things that stand in his way. The player's goal is to reach the last floor to find a way home.

Section 3 – Game Play

3.1 Objective(s):

- Move to the deepest level of the dungeon.
- Protection from monsters, enemies.
- Collect useful items.
- Get the key to the next floor from the enemies.
- Get health to continue living.

3.2 Game Logic:

- The effect of the explosion can be increased when the character receives the items. Characters cannot pick up anything too big or heavy for them.
- Characters can't pick up more items when stamina is maxed
- Movement speed items have a duration, after the time expires, the player is slowed for a period of time and then gains base speed.
- Enemies do not auto target the player.
- Enemies will be blocked by walls except for special enemies.
- The door to the next floor will appear when you kill all enemies or get the key.

3.3 Mechanics:

3.3.1 Rules:

- Characters cannot break through walls unless they destroy them.
- If a character's health is zero, the character dies and the level needs to be repeated.
- The number of bombs is limited before the number of bombs set explodes, players cannot place more than the number of bombs available.
- Characters can't enter the door without the key.
- The player cannot go to the next dungeon without completing the previous level.
- Players start with low base abilities (bomb count, movement speed, explosion)
- The player's view is purely over the shoulder of their character – no 360 degrees
- If the player's character is killed by an enemy, the level must be restarted.

3.3.2 In-game Help and Info:

- When the game starts up the player is prompted to do the following actions (to help understand how to play the game):
 - Move around.
 - Place a bomb and wait for it to explode Place a bomb and wait for it to explode.
 - Pick up and use items.
 - Pick up the key.
 - Interact with the key – pick it up and use it to open the door.
- Hints:
 - The bomb will explode after a period of time after placing the bomb.
 - Players can pick up items by touching them.
- Help can be accessed via the main menu. This will include help on the following topics:
 - How to move around and place bombs
 - Information on the different zombies
 - HUD explanation
 - Information on key and doors
 - Goals of the game
 - Levels of the game
 - Difficulty levels

3.3.3 Statistics:

- High score – overall high score for the whole game
- High scores for each of the levels
- The highest amount of health that the character has at the end of a game
- Leaderboard

3.4 Game Resources (Score Strategy):

3.4.1 High Score:

- Score is determined by how many zombies the player kills
- Points is the number of points awarded to the player when the maximum item is used.

3.4.2 Points:

- Different enemies have different scores.
- Points can be used to access items from the shop after each level.
- Players can use points to revive and continue the level.

3.5 Game Progression:

3.5.1 Game Levels:

- The floors are the different levels of the ancient dungeon
 - The floors will be numbered in the order of the dungeon.
 - After passing each floor, the player will be affected by the dungeon, but the basic skills will be reset.

- To complete a level :
 - Player must destroy the wall and destroy all enemies.
 - The player must find the key from the enemies to enter the door.
 - The door will appear when the player owns the key.
 - The player must open the door and enter

3.5.2 Difficulty Levels:

- Easy, medium and hard
- User can choose difficulty level to play at
- The higher the difficulty level, the higher the health of the enemies – making them harder to kill.
- The higher the difficulty, the lower the rate of items being reduced.
- The higher the difficulty, the player's basic skills are limited.

3.6 Economies:

- Currency = points

Section 4 – Game Elements

4.1 Environment:

- The location of the game is an ancient dungeon system.
- Closed world
- In the dungeon each floor has different characteristics.
- There are no other way than the gate.
- The dungeon has a depth of 6 floors.

4.2 Characters:

4.2.1 Players Characters:

- At the beginning of the game, the player will start with the main character.

4.2.2 Non-player characters:

- Enemy
 - Marauder – deals damage to the character when touched
 - Ghost – Can move through objects
 - Chief of Thieves - Bombs can be placed

4.3 Collectable Items:

- Shoes - Increases movement speed.
- Bomb - Increases the number of bombs.
- Explosives - Increases explosion radius

Section 5 – Game Play I/O Controls & GUI Interfaces

5.1 Game Play I/O Controls:

- Keyboard
- Mouse
- To move around the environment:
 - Arrow keys
 - W, A, S and D keys
- Special keys:
 - Space = Place Bomb
 - Shift = Place Bomb (2 player)
 - E = Interaction (e.g. open doors)
 - Esc = pause

5.2 GUI Interfaces:

5.2.1 Main Menu Interface:

- Options:
 - Mode: Single or multiplayer
 - Options: Audio, volume, video, controls
 - Help: Different help topics
 - Statistics: High score, other scores
 - Exit: Exit the game

5.2.2 Single Menu:

- Adventure: Basic adventure with levels
- Sandbox: Infinite adventure with many challenges
- Vs BOT: Dangerous BOT system
- Back: Back to main menu

5.2.3 Pause Menu:

- Options:
 - Resume: Resume the game
 - Options: Audio, volume, video, controls
 - Exit: Back to main menu

Section 6 – Visual & Audio Features

6.1 Visual Features:

- HUD:
 - Left:
 - Top Left: Avatar & health bar.
 - Bottom Left: Log Player.
 - Popup Left: Stat Player.
 - Right: Main frame floor
- Shadows

6.2 Audio Features:

- Footsteps – different footsteps on different floors
- Explosion sound
- Opening doors
- Place Bomb
- Dropping items
- Picking up items
- Destruction sound

Section 7 – System Parameters & Requirements

Section 7.1 System requirements:

- Keyboard
- Mouse
- Monitor
- 2GB RAM
- Dual-core processor
- Speakers (optional)
- Hard drive
- Graphics memory
- Windows all version
- DirectX

Section 8 – Creativity & Special Enhancements in Game Concept

Section 8.1 Creativity & Special Enhancements:

- Support players on-Lan or online
- Various lighting effects that properly depict the dungeon animation
- Character voice when picking up items .
- Character's vision will be blocked by structures.
- Sound effects – for example when an avatar is walking sound effects will be needed in time to the footsteps being taken.