

Bomberman Game Design Document

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October 19, 2017

1 Game Description

Bomberman is an action strategy game. The goal of the game is for the player to eliminate enemies by placing down bombs. Bombs will explode in several directions after an amount of time. The game is played on a 15 x 13 or 17 x 15 grid.

1.1 Player

The player will control a character which can walk around the map and place bombs. The player can move the character by using WASD or arrows of a keyboard. By pressing spacebar he/she can plant a bomb.

1.2 Map

The map is a grid that contains several blocks which can be either destructible or indestructible by bombs. The indestructible blocks are placed every two blocks on the field. The destructible blocks are randomly placed on the map. The player and his/her enemies will first have to destroy several blocks to reach each other. Destructible blocks can also drop power-ups which enhances the abilities of a player.

1.3 Enemies

Enemies in the game will move around the map randomly. The enemy can be defeated by hitting it with an explosion from a bomb. When a player intersects with an enemy he/she will lose health. The enemies themselves can not plant bombs.

1.4 Power-ups

Blocks can drop several power-ups:

- Speed boost, enhances the movement speed of the player by 2
- Bomb Amount, raises the amount of bombs that a player can place simultaneously by 1
- Explosion size, enhances the explosion size of a bomb by 2

1.5 Animations

Several objects will be animated during gameplay:

- Player movement
- Enemy movement
- Bomb explosion

2 Data types and Typeclasses

The game will have several data types and typeclasses.

2.1 Data types

The following data types are described by their names and attributes

- Player
 - playerPosition :: (Int,Int)
 - health :: Int
 - moveSpeed :: Float
 - direction :: Direction (Up — Down — Left — Right)
 - sprite :: Sprite
- Bomb
 - explosionRadius :: Int
 - explosionTime :: Float
 - bombPosition :: (Int,Int)
- Grid :: [Field]
- Field
 - fieldPosition :: (Int, Int)
 - gameObject :: GameObject
- Powerup: SpeedBoost — DropAmount — ExplosionSize
- GameObject :: Block — IndestructableBlock — Empty
- GameState: Player, [Player], Grid, Paused

2.2 Typeclasses

- Positioned, type that has a position
- Movable, type that can move into a direction
- Living, type that can either be dead or alive
- Destructible, item that can be destroyed by explosions