**Use cases**

**Use case**: Start game

**Summary:** The user starts a new game with the previously selected map and begins playing.  
  
**Priority:** High  
  
**Extends:** None  
  
**Includes:** Build tower, Sell towerUpgrade tower, , Pause  
  
**Participators:** The player.  
  
Normal flow of events

|  |  |  |
| --- | --- | --- |
|  | **Actor** | **System** |
| **1** | Clicks the “Start Game”-button |  |
| **2** |  | Displays the map and initializes the game. |

**Use case**: Exit game

**Summary:** Shuts down the program

**Priority:** High  
  
**Extends:** None  
  
**Includes:** None  
  
**Participators:** The player.

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| --- | --- | --- |
|  | **Actor** | **System** |
| **1** | The user press exit button |  |
| **2** |  | Shutdown program |

**Use case**: Choose map

**Summary:** The user chooses a map for the game.  
  
**Priority:** Mid  
  
**Extends:** None  
  
**Includes:** Start game  
  
**Participators:** The player.

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| --- | --- | --- |
|  | **Actor** | **System** |
| **1** | The user clicks on a representation of a map |  |
| **2** |  | The system loads the selected map |

**Use case**: Build tower

**Summary:** The player purchase and places a new tower. Deducts money.  
  
**Priority:** High  
  
**Extends:** None

**Includes:** None  
  
**Participators:** The player

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| --- | --- | --- |
|  | **Actor** | **System** |
| **1** | User selects a tower from an actionpanel |  |
| **2** | User clicks on the map |  |
| **3** |  | Constructs the tower on the clicked coordinate |
| **4** |  | Deducts player’s money |
| **5** |  | Sets the area tower’s area on the map to unbuildable |

**Alternate case:** Player’s funds are insufficient.

|  |  |  |
| --- | --- | --- |
|  | **Actor** | **System** |
| **2.1** |  | Displays a message informing the player, that he/her has not enough money |

**Alternate case:** The player places the tower on an unbuildable area

|  |  |  |
| --- | --- | --- |
|  | **Actor** | **System** |
| **2.1** |  | Informs the user that he/she can’t place a tower on the clicked area |

**Use case**: Select tower

**Summary:** Selects tower and brings up the context menu

**Priority:** Mid

**Extends:** None

**Includes:** Upgrade tower, Sell tower

**Participators:** The player.

|  |  |  |
| --- | --- | --- |
|  | **Actor** | **System** |
| **1** | The user presses on the tower |  |
| **2** |  | Presents a popup menu |

**Use case**: Upgrade tower

**Summary:** Improves the towers characteristics

**Priority:** Mid

**Extends:** None

**Includes:** None

**Participators:** The player.

|  |  |  |
| --- | --- | --- |
|  | **Actor** | **System** |
| **1** | The user selects upgrade from the context menu |  |
| **2** |  | Upgrades the selected tower |
| **3** |  | Deducts the user’s money |

**Alternate case:** Player’s funds are insufficient.

|  |  |  |
| --- | --- | --- |
|  | **Actor** | **System** |
| **2.1** |  | Displays a message informing the player, that he/her has not enough money |
| **2.2** |  | Context menu closes |

**Use case**: Sell tower

**Summary:** The user sells a tower and earns money.

**Priority:** Mid  
  
**Extends:** None

**Includes:** None  
  
**Participators:** The player.

|  |  |  |
| --- | --- | --- |
|  | **Actor** | **System** |
| **1** | Selects “Sell” from the context menu |  |
| **2** |  | Removes the tower |
| **3** |  | Gives the player money |

**Use case**: Next wave

**Summary:** The user starts a new round  
  
**Priority:** High  
  
**Extends:**

**Includes:**  
  
**Participators:** The player.

|  |  |  |
| --- | --- | --- |
|  | **Actor** | **System** |
| **1** | The player presses the “Next wave” button |  |
| **2** |  | Updates GUI based on the information of the incoming wave |
| **3** |  | Starts spawning enemies |

**Use case**: Pause game

**Summary:** The user pauses the game.  
  
**Priority:**Low  
**Extends:** None

**Includes:** Reset, resume, toggle sound, exit map  
  
**Participators:** The player.

|  |  |  |
| --- | --- | --- |
|  | **Actor** | **System** |
| **1** | Clicks the “Pause”-button |  |
| **2** |  | Holds the game’s state |

**Use case**: Player dies

**Summary:** The player loses all his/her lives and the game is over. The system prompts the user to play the same map again or to choose a new.  
  
**Priority:** High  
  
**Extends:** None

**Includes:** Reset, Exit map  
  
**Participators:** The player.

|  |  |  |
| --- | --- | --- |
|  | **Actor** | **System** |
| **1** | Loses all lives |  |
| **2** |  | Prompts the user to play the same map again or to choose a new |
| **3** | Chooses alternative by clicking |  |
| **4** |  | Loads the selected map |

**Use case**: Tower shoots enemy

**Summary:** An enemy is within the shooting radius of a tower and the tower shoots the enemy.  
  
**Priority:** High  
  
**Extends:** None

**Includes:** None  
  
**Participators:** The player, enemies

|  |  |  |
| --- | --- | --- |
|  | **Actor** | **System** |
| **1** | Detects an enemy within the shooting radius. |  |
| **2** | Begins shooting at the enemy. |  |
| **3** |  | Enemy takes damage |

**Alternate case:** The tower applies an effect to the shot enemy, e.g. slows the enemy down.

|  |  |  |
| --- | --- | --- |
|  | **Actor** | **System** |
| **3.1** |  | The towers specified effect is applied to the tower. |

**Use case**: Enemy dies

**Summary:** When an enemy loses all its hitpoints, it dies and disappears from the map.  
  
**Priority:** High  
  
**Extends:** None

**Includes:** None  
  
**Participators:** Enemies

|  |  |  |
| --- | --- | --- |
|  | **Actor** | **System** |
| **1** | The enemy disappears. |  |
| **2** |  | The player gets money. |

**Alternate case:** Last enemy is killed

|  |  |  |
| --- | --- | --- |
|  | **Actor** | **System** |
| **2.1** |  | Wave ends |
| **2** |  | System spawns no more enemies until nextWave is invoked. |

**Use case**: Enemy reaches end of path.

**Summary:** When an enemy reaches the end of the path, the player loses lives.

**Priority:** High  
  
**Extends:** None

**Includes:** Player dies  
  
**Participators:** Enemies

|  |  |  |
| --- | --- | --- |
|  | **Actor** | **System** |
| **1** | The enemy disappears. |  |
| **2** |  | The player loses lives. |

**Alternate case:** Last enemy reaches end of path

|  |  |  |
| --- | --- | --- |
|  | **Actor** | **System** |
| **2.1** |  | The current wave ends. |