# Hacker Defense

| Use Case / Requirement ID | 00 | |
|---|---|---|
| Use Case Name | Upgradable towers | |
| Description | A variety of towers needs to be able to be constructed by a player | |
| Actors | Player | |
| Pre-Conditions | The player has enough money to construct the tower. There is room on the map to construct a tower | |
| Post conditions | The tower is removed and replaced with an upgraded version | |
| Frequency of Use | Mission critical to gameplay | |
| **Flow of Events** | **Actor Action** | **System Response** |
| | The tower type is clicked in the build screen | An outlined tower appears anywhere you mouse over |
| | You click somewhere on the board | The tower gets placed at the location and begins firing |
| | Click on the tower | List of upgrade options is displayed |
| | Click on the upgrade | If enough money is available, tower is upgraded |

| Use Case / Requirement ID | 01 | |
|---|---|---|
| Use Case Name | Enemies need to be killable | |
| Description | A variety of creeps need to spawn with different characteristics, abilities, and properties, and be shot by our towers | |
| Actors | Player | |
| Pre-Conditions | The player has built towers and is currently in a map with creeps spawning | |
| Post conditions | The enemy is removed and the bounty is awarded | |
| Frequency of Use | Mission critical to gameplay | |
| **Flow of Events** | **Actor Action** | **System Response** |
| | The user builds a tower | Tower appears on the map |
| | | The enemy walks into the path of the tower |
| | | The tower begins firing |
| | | If HP reaches below 0 the enemy will die and bounty will be awarded |

# Activity Diagram



User Swim Lane

System Swim Lane

Tower Type Clicked in Build Screen

[ No ]

Warning Displayed

Tower is Not Build

[ Is there enough money ]

[ Yes ]

[ No ]

Location on Board is Clicked

[ Is there room? ]

[ Yes ]

Tower is Built

Upgrade button Clicked

[ Is there enough money? ]

[ Yes ]

Tower is Upgraded

[ No ]

Tower remains the same
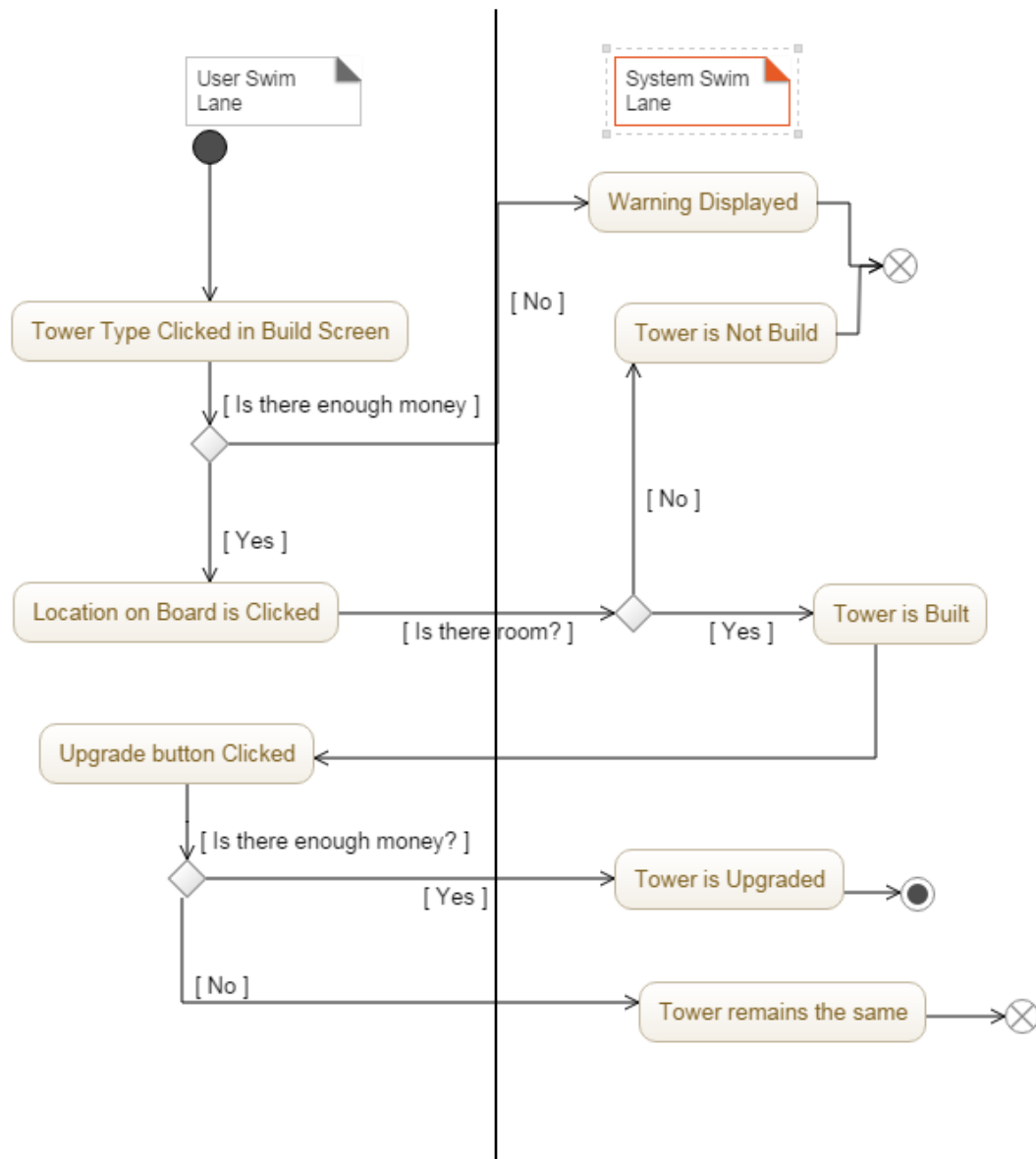
# Sequence Diagram

Use case 00

Towers should be able to be upgraded if there is sufficient money

| Player | Tower | Map |
| --- | --- | --- |

locationIsFree(x, y)

updateTowerArray

newUpgradeOption

getMoney()