# 4 State of the Art – Competition Analysis

There are many tower defense games which gained much popularity over the years. The most successful game released 2009 and is still a name people know about: Plants vs. Zombies [1]. It uses a small by grid where the enemies approach from one side and the “towers” are placed on the grid to fight against them. The enemies can destroy the towers when they’re near enough. Killed enemies give the player money to upgrade or place new towers.

# Literature

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| [1] | EA, "Plants vs. Zombies 2 - Free Mobile Game - EA Official Site," [Online]. Available: https://www.ea.com/en-gb/games/plants-vs-zombies/plants-vs-zombies-2. [Accessed 29 September 2017]. |

# 9 Rough Sketch

The time required to finish the product is estimated to be 18 months whereas the prototype’s time schedule is set to be finished within 14 weeks. Within these 14 weeks the prototype will be built according to the Unified Process(UP) and each week represents an iteration. A first analysis yielded the following Use-Cases:

## Use-Cases:

1. Playing a variable number of rounds of the tower defense game with multiple enemy types and tower types. This includes the following Sub-Use-Cases:
   1. Placing affordable towers on the map
   2. Upgrading existing towers if affordable
   3. Tearing down towers
   4. Pause the running game
2. Loading a map in the game and playing it according to UC 1.
3. Exporting existing maps for editing via spreadsheet editors.

## Risks:

* Complexity of development exceeding expectations – resulting in more time consuming effort.

## Rough Time Schedule for the Prototype

The development of the prototype will require an estimated amount of time of 480 hours which should be reached by weekly iterations according to the following time schedule:

|  |  |  |  |
| --- | --- | --- | --- |
| Phase | Iteration | Start / Duration [weeks] | Objective |
| Inception | 1 | 1 / 2 | Project sketch finished, IDE prepared, UC identified, Architecture determined |
| Milestone | M1 | End of Week 2 | Requirements for product determined |
| Elaboration | 2 | 3 / 2 | Detailed formulation of UC 1-3, Domain model defined |
|  | 3 | 5 / 2 | UI prototype defined, Architecture stable and as PoC verified |
| Milestone | M2 | End of week 6 | Architecture verified |
| Construction | 4 | 7 / 2 | UC 2-3 implemented and tested, UI prototype implemented |
|  | 5 | 9 / 2 | Implementing UC 1 and UI |
|  | 6 | 11 / 2 | UC 1 implemented and tested, UI finished, Integration tests finished |
|  | 7 | 13 / 2 | Cushion |
| Milestone | M3 | End of week 14 | Product finished, System tests finished, Documentation finished |