Implementation Plan

Assignment in the course PA1415 Software Design

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System Description

The goal of the system is to create a Nethack clone that uses the Twitter API to generate the game's map. Furthermore the game shall contain a form of multiplayer. Generated maps shall be able to be saved and loaded for later continuity.

Prioritised List of Use Cases

Motivation for Priorities

The list of use cases below are prioritised in an order that reflects their importance of system functionalities. The list is arranged with the most important use case at the top and for every step down the list the importance of the use case decreases, from a system point of view to satisfy the Minimum Viable Product (MVP).

The system is estimated to take 2 months to develop with a total of 17 706 story points. The goal is to accomplish an MVP after 1 month or 17 567 story points. Leaving the remainder of the time to implement functionality that's not required by the MVP, such as more classes, a wider range of items and more possible interactions in the game.

The story points are just placeholder values based on the fibonacci sequence and have no real connection to the time required to implement the different use cases

Use Cases

1. Generate level - 6765
2. Start new game - 4181
3. Join existing game - 2584
4. Save game - 1597
5. Load game - 987
6. Create character - 610
7. Pick up items - 377
8. Open inventory - 233
9. Use item - 144
10. Enter room - 89
11. Open dialogue with entities - 55
12. Engage combat with entities - 34
13. Show event log - 21
14. Show help - 13
15. Drop/discard item - 8
16. Player chat - 5
17. Play tutorial - 3

Estimated Velocity Per Iteration

As the story points give a very bad impression of the time required to implement different use cases the estimated velocity will be described in hours. Each iteration will last for one month with a goal to cover 60 work hours/week.

The 60 hours shall include all time spent on implementation and/or changes to the design. The goal is to never reach a velocity lower than 40 hours/week and it will probably be hard to surpass the 100 hours/week threshold.

Implementation Plan

Motivation for Implementation Plan

The first ten use cases are essential for the game to serve as an MVP with number eleven and twelve as highly desired use cases for the game to function properly.

As far as estimated work hours/week goes 60 hours/week is a reasonable amount of work to put into the project to reach the deadline of the MVP.

The biggest challenges will be the map generation and the multiplayer aspect of the game which puts those two use cases in the top three of the implementation plan. The other use cases do not add much complexity to the implementation, but they require attention in the matter of time itself to accomplish.

Iterations and Use Cases

As the MVP covers most of the story points in the project the iterations will be described in the matter of work hours rather than story points. The first iteration will be split down into two different parts with the first one including completion of the system design and the second one being the implementation itself.

The first two weeks of the first iteration will be dedicated to complete the system design. This includes the creation of different diagrams that the project lacks, finishing with the systems class diagram.

The second part of the iteration will be the implementation of the above mentioned MVP. The first iteration covers use cases one through ten and also eleven and twelve if possible.

The second iteration will include the remainder of the use cases as well as the expansion of the already existing features of the game. This means that existing core features of the game will be improved and expanded, such as more classes or the variety of the items in the game.