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 current use cases are estimated to take 1 month to develop with a total of 3 180 story points. The goal is to accomplish an MVP after 2 weeks with a total of 3027 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.

Use Cases

1. Create character - 361 story points
2. Enter room - 141 story points
3. Open dialogue with entities - 113 story points
4. Engage combat with entities - 183 story points
5. Pick up items - 293 story points
6. Use item - 233 story points
7. Generate level - 663 story points
8. Start new game - 521 story points
9. Open inventory - 88 story points
10. Join existing game - 431 story points
11. Save game - 63 story points
12. Load game - 40 story points
13. Show event log - 21 story points
14. Show help - 13 story points
15. Drop/discard item - 8 story points
16. Player chat - 5 story points
17. Play tutorial - 3 story points

Estimated Velocity Per Iteration

The estimated velocity of iteration one and further iterations is currently 3027 story points. As 3027 story points is the goal for the MVP this will be the estimated average velocity per iteration.

If there's extra implementation time given due to inaccurate estimations then the goal will be to accomplish two more use cases, *Save game* and *Load game*. This will put the estimated maximum velocity to 3130 story points.

If there's a lack of time by the end of iteration one, due to the same reason as mentioned before with the extra time given, then the *Join existing game* use case will be excluded. The reason to the exclusion of *Join existing game*, if there's a lack of time, is that it's not necessarily needed for the game to function as a whole, but it's rather for the multiplayer aspect of the game. The game won't fulfill the MVP requirements, but it will still serve as the single player game NetHack was once made to be. If this is the case and time is short towards the end the final story points accomplished would be 2596, which will become our estimation for the minimum velocity.

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 quality of life reasons.

The biggest challenges of the implementation will be the map generation and the multiplayer aspect of the game. Both the multiplayer function and the map generation through the Twitter API is new ground for the team and is therefore assigned a high amount of story points as they're estimated to take a high amount of the implementation process.

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

The first iteration will cover the following use cases:

1. Create character
2. Enter room
3. Open dialogue with entities
4. Engage combat with entities
5. Pick up items
6. Use item
7. Generate level
8. Start new game
9. Open inventory
10. Join existing game

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.