Create a hero based walking on tiles and killing monsters type of game. The hero is controlled in a maze using the keyboard. Heroes and monsters have levels and stats depending on their levels.  
The goal is reach the highest level by killing the monsters holding the keys to the next level.

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**Wanderer - The RPG game**

Build a hero based walking on tiles and killing monsters type of game. The hero is controlled in a maze using the keyboard. Heroes and monsters have levels and stats depending on their levels. The goal is reach the highest level by killing the monsters holding the keys to the next level.

**Why?**

The main goal of the project is to practice object oriented thinking. The best way to practice it is: to create a bigger application and think about it's architecture. It's one of the first occasions when the apprentice creates an architecture, so on this level it is expected to have issues with it. It's not required to come up with a well designed architecture rather just start to think about it.

While the apprentice thinks about the architectural issues, they practice all the basic building blocks that was presented during the foundation phase.

We only provide high level descriptions of the features, and the apprentice has to come up with the explicit instructions for the implementation.

This is one of the first bigger projects that the apprentice has to deliver. We have introduced the kanban method in previous projects. This is a great opportunity to practice kanban on a bigger scale. Please follow the principles, and show your work to a mentor for review, before you would have more than 2 tasks in the doing column.

**Plan your work**

**Go through the project specification**

**The Game screen**

* The screen contains the first area, which is 10 x 10 tiles where the hero (and the monsters) can move.
  + Every area contains 10 x 10 tiles.
* There are tiles that cannot be occupied by any character (hero or monster).
* Every area contains 3-6 monsters.
* The monsters levels come from the number of the area.
  + If its the Xth area, the monsters have level X (with 50% chance) or level X+1 (40%) or level X+2 (10%).
* One of the monsters is the boss.
* One of the monsters (not the boss) is holding the key, so if it is killed the hero goes to the next area, but also the boss has to be killed.
* The game screen also contains a text area where info of the characters' are provided.
  + It shows all stats of the hero.
  + If the hero is on the same tile with a monster, it shows all stats of the monster as well.

**Moving**

* The hero can move tile-by-tile in four directions on the screen by using the corresponding arrows (or "WASD" if preferred).
* After every two move, the monsters move one tile as well.

**The Characters**

* Every character has a (max and current) health point (HP), a defend (DP) and strike point (SP).
* These values can change during the game.
* When a character's health point is 0 or below, it is dead.
  + It disappears from the area.
  + If its the hero, it is the end of the game.

**Starting stats**

(d6 is a random number between 1 and 6 aka 6 sided die roll)

* Hero:
  + HP: 20 + 3 \* d6
  + DP: 2 \* d6
  + SP: 5 + d6
* Monster Level X:
  + HP: 2 \* X \* d6
  + DP: X/2 \* d6
  + SP: X \* d6
* Boss Level X:
  + HP: 2 \* X \* d6 + d6
  + DP: X/2 \* d6 + d6 / 2
  + SP: X \* d6 + X

**Battle**

* When a hero enters a tile which is occupied by a monster, a battle forms.
* The character entering the occupied tile is the attacker.
* When the player hits space his hero strikes on the defender and then it strikes back.
* The attacker strikes on the defender, then the defender strikes and this continues until one of the characters dies.
* After a won battle if the character is a hero, it levels up.

**Strike**

* On a strike a strike value (SV) is calculated from SP and a d6 doubled.
* The strike is successful if 2 \* d6 + SP is higher than the other character's DP.
* On a successful strike the other character's HP is decreased by the SV - the other character's DP.

**Leveling**

* After successfully won battle the character is leveling up.
* His max HP increases by d6.
* His DP increases by d6.
* His SP increases by d6.

**Entering next area**

* When killing the monster who held the key to the next area, the hero enters immediately.
  + Which is like the previous one just with new and higher level monsters.
* When entering a new area the hero has:
  + 10% chance to restore all his HP.
  + 40% chance to restore the third of his HP.
  + 50% chance to restore 10% of his HP.
* Monster Level X:
  + HP: 2 \* X \* d6
  + DP: X / 2 \* d6
  + SP: X \* d6

**User stories**

**Introduction**

*Stories should be followed by implementation. Completing a story means you made a little progress on the project.*

*Keep in mind, that you have to develop the complete game. So when working on a specific story, you should be able to reuse the implementation later in other parts of the game.*

**Draw a screen with tiles**

**1. Draw a single tile**

* Given the launched game
* Then it should show a tile like this:

**2. Fill the screen with the tile**

* Given the launched game
* Then it should show a map of tiles like this:

**3. Add wall tiles**

* Given the launched game
* When the map is rendered on the screen
* Then it should show floor and wall type tiles as well like on this layout (you can arrange wall differently if you wish):

| **Floor tile** | **Wall tile** |
| --- | --- |
|  |  |

**Place a character on it and move with key bindings**

**4. Add the Hero**

* Given the launched game
* When the map is rendered on the screen
* Add the player character called the hero
* Then it should show a hero on the top-left corner:

| **Hero** |
| --- |
|  |

**Interactions**

The player should be able to move the hero by using their arrow keys.

**5. Move around**

* Given the launched game
* When *any* of the arrow keys are pressed by the user
* Then the hero should move to that direction

**6. Hero direction**

* Given the launched game
* When the hero is moved by the arrow keys
* Then the hero should face the direction where he went

| **Hero Up** | **Hero Right** | **Hero Down** | **Hero Left** |
| --- | --- | --- | --- |
|  |  |  |  |

**7. Map boundaries**

* Given the hero on any edge of the map
* When the hero is moved by the arrow keys towards the edge
* Then it should not move or leave the map, only its direction should change if necessary

**8. Walls**

* Given the hero next to a wall tile
* When the hero is moved by the arrow keys towards the wall tile
* Then it should not move, only its direction should change if necessary

**Extend with different kinds of characters**

**9. Skeletons**

* Given the launched game
* When the map is rendered on the screen
* Then 3 skeletons should be on the map, somewhere on floor type tiles

| **Skeleton** |
| --- |
|  |

**10. Boss**

* Given the launched game
* When the map is rendered on the screen
* Then a boss should be on the map, somewhere on floor type tiles

| **Boss** |
| --- |
|  |

**Create HUD, fight & game logic**

**11. Stats**

* Given the launched game
* When the map is rendered on the screen
* Then stats should appear below the map in a white box as black strings
  + It should contain:
    - The level of the Hero
    - The current HP (*health point*) of the Hero
    - The max HP of the Hero
    - The DP (*defend point*) of the Hero
    - The SP (*strike point*) of the Hero
  + Like this: Hero (Level 1) HP: 8/10 | DP: 8 | SP: 6

**12. Strike**

* Characters are able to strike as detailed in the specification above

**13. Battle logic**

* After a hero character performed a strike the defender should strike back the same way

**14. Next area**

* When the enemy with the key is killed, the hero should enter the new level automatically