Problem Statement

Thursday, July 19, 2018 2:07 PM

We are a gaming startup company who wants to make a mark in the gaming world. Since the company is new and has to pitch with reputed players in the field, the management decided to **create multiple games** which internally uses the same game engine.

The management decided to start with a tank game where the player has to navigate the tank through a treacherous terrain filled with mines, dead ends and enemies and reach the designated checkpoint.

The development team came up with a game which does exactly that. The game is attached with this mail.
Disclaimer: you need to use a good amount of imagination to play… the red square is the tank and the 'X' in the field is the mine ☺.

Although the development was fast but it was little bit away from the vision…
This game cannot be extended to create different variants (today we have tank battle field, tomorrow we might have a ghost house run, dirt bike race etc…) . The vision was to have a gaming engine where we can change the subject, obstacles, scoring methods, winning criteria and create different games.
In future we might also introduce multi player mode.
Moreover it was buggy, before the mine could explode and the whole game could break ☺

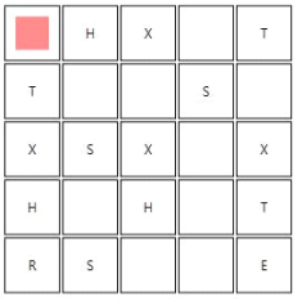
When they learned the vision they realized that they have a big task up their sleeves as they need to refactor (or rewrite) everything!!! Maybe applying some clean coding practices coupled with some low impact development philosophy might help them!!!

Challenge
Your challenge is to support the development team in realizing the company(s) vision and achieve success.
Every run of these games should provide a different route map and challenges (unlike the sample which is defined static).
The proof of concept will be two variants of the game using the same engine but having different behavior.

Tank Battle

Thursday, July 19, 2018 2:15 PM

Game 1: Tank Battle



E	Exit
H	Hill
X	Mine
T	Trench
S	Enemy Soldier
R	River
Red Square	Tank

Game play rules:

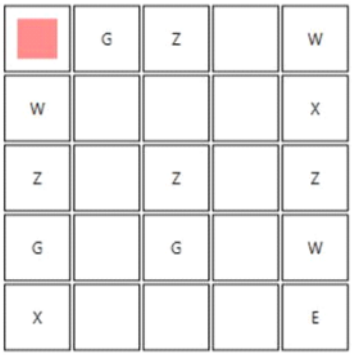
- The player will start with a fixed score based on the field size. (For example 100)
- Each move across an empty grid cell will reduce the score by 5 points
- If the tank moves on a grid cell having a Mine then score immediately reduces to 0 (Game over!!!)
- The tank cannot move to a grid cell having a hill
- If the tank moves to a grid cell having a trench then the score will reduce by 15 points.
- If the tank moves to a grid cell having a river then the score will reduce by 10 points
- If the tank moves to a grid cell having enemy soldiers then the score will increase by 10 points.
- The game ends when the player score becomes 0 or when the user reaches the exit.

Objective: Navigate your tank across the field using arrow keys to the exit with maximum score. The field will have hills, trenches, rivers, mines and enemy soldiers as shown above.

Haunted House

Thursday, July 19, 2018 2:16 PM

Game 2: Haunted House



G	Ghost
Z	Zombie
W	Wall
X	Weapon
Red Square	Player

Game play rules:

- If the player moves to a room having a weapon then the player can pick up the weapon from the room. And weapon will no longer be available in the room.
- The player can carry only one weapon at a time and is of single use.
- If the player already has a weapon and moves to a room having a weapon, then the weapon will not be removed from the room.
- If the player encounters a ghost\zombie while having a weapon then the ghost\zombie is killed and also the player loses the weapon.
- There will be only one zombie or one ghost in a room at a time.
- The location of the zombies will not change during the game.
- The location of the ghosts randomly changes during each move.
- The ghost will not appear in the room where the player is currently residing. And the ghost can only move to an empty room.
- The player cannot move to a grid cell having a wall.
- Each player starts with health at 100.
- Each move will reduce the health of the player by 5.
- Each zombie kill will increase the health of the player by 10.
- Each ghost kill will increase the health of the player by 20.
- If the player encounters a ghost/zombie without weapon, the health will become zero (Game Over!!!)
- The game ends if the health of the player becomes 0 or player reaches the exit.

Objective: Navigate the player across the rooms to the exit door using arrow keys with maximum health. The rooms can have zom bies, ghosts, walls, weapons as shown above.

Timeline

Thursday, July 19, 2018 2:16 PM

Each team can review the challenge and make up their understanding of the problem and its boundary till Monday 22nd July.
We have a clarification round on the challenge and scope of solution on Monday 22nd July afternoon 2 p.m.
You will have to submit the solution before 30th July 2 p.m.
Only one submission per team and keep your public/private key safely with you.

!!! Winner will be based on degree of realization of requirement as defined, design quality attributes, clean coding practices followed !!!

Variables

Thursday, July 19, 2018 3:42 PM

1. Objects on map.
    a. Legends, symbols, count
    b. Action-> meaning or significance of that object (what happens when you land on it e.g. deduct health by 5)
2. Placement of objects with each game
3. Scoring criterion (scoring engine) part of rule engine
4. Game name
5. Logos for the items, background etc (best effort!)
6. Rows/column
7. Winning criterion (kill three zombies before health reaches zero)
8. Rule engine (movement rules)
    a. Output score
    b. Restrictions (point deduction, movement restricted,)
    c. Adding new rules
    d. Destination cell

Questions

Thursday, July 19, 2018 3:51 PM

1. Is there a restriction on type of layout or size (no of rows or columns)