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T-JAV-501

Description

Project name	2D Game
Suggested Team size	2-3 students
Theme	Dev OOP
Suggested language	Java
Specific hardware needed	no
Specific resources needed	no

Goal

This project is a 2D Tower Defense game. Your main challenge for this game will be to create a nice and smooth user interface.

Your game must follow the following rules:

- The player is a builder who must defend his castle,
- Enemy waves will regularly appear from one side of the playground,
- The player must buy and place buildings on the playground grid to kill enemies,
- When the castle is reached by an enemy, it takes damages,
- If the castle reaches 0 hit points the player loose.

Requirements

Mandatory

- the game manages the input from the mouse click and/or keyboard.
- the enemies have to move in a pattern (e.g. line).
- Towers and Enemies have to respect Oriented Object concepts(Abstaction, Interface, etc...).

Must

- differents types of towers (e.g. normal, slow, fire, long range, zone)
- differents types of enemies (e.g. basic, speed, large, boss)
- the way the enemies have, can be differents than the line pattern (e.g. U turn, left right turn)

Could

- a starting menu with at least two buttons, one to launch a game, and one to quit the game.
- an escape key to pause the game when launched.
- a menu when the game is paused with at least three buttons, one to resume the game, one to go to the starting menu and the one to leave the game.

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- a "How To play" menu, explaining how to play your game.
- a scoreboard stored in cookies or local storage.
- a scoreboard displayed at the end of a game, or thanks to a scoreboard button in the starting menu.
- the user can upgrade its towers.

Map example

Here is a example of a map where 0 is somewhere we can't have any entity, 1 where we can put some tower, 2 the enemies path, the 3 the castle (your life) and the 4 for the start of the enemies. We use 3 to describe blocks with a different sprite. You are free to use any kind of map formating as long as it's described in a hidden file named .legend and located at the root of your repository. You can also format the map as you want, with some turn or multiple line of tower or any different pattern that you want.