THE AMERICAN UNIVERSITY IN CAIRO

School of Sciences and Engineering
Computer Science and Engineering Department

Fall 2020
October 31th, 2020
Programming in Java

# Assignment 3 – GUI Tank Game

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Inputs

A welcome screen will ask the user to choose an input 3 sliders, with each slider represents a parameter.

- The first slider represents the number of mines, which ranges from 1 to 4.
- The second slider represents the aggressiveness of the misses, where the user will get to choose the number of seconds where every single rocket would get launched at. The user will have the freedom to choose from 0.5 seconds (Most Aggressive) up to 4 seconds (Least Aggressive)
- The third slider represents the accuracy at which the House rockets get targeted at the tank.
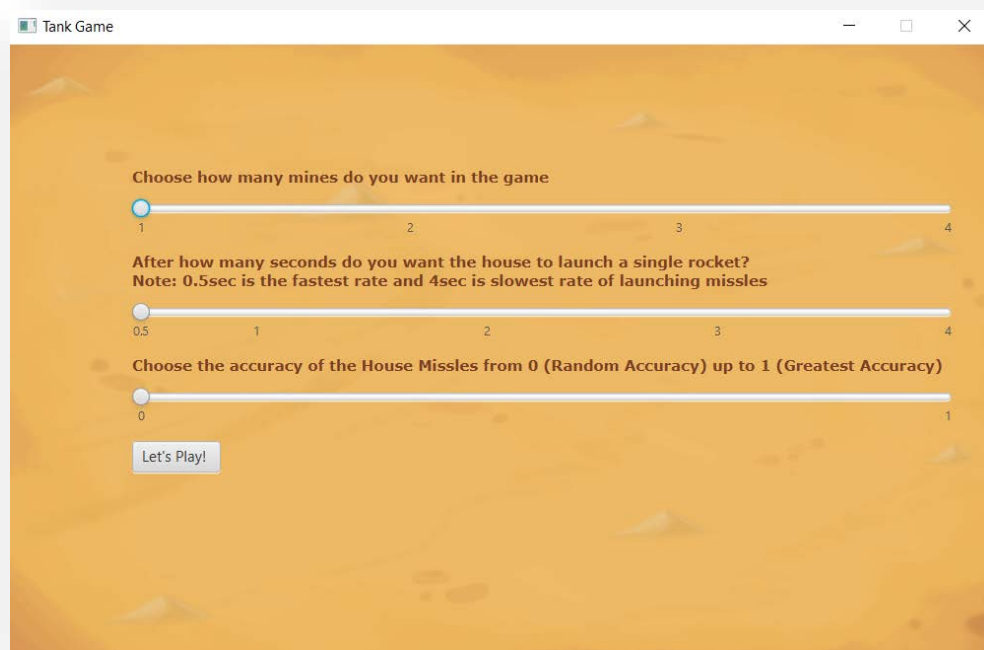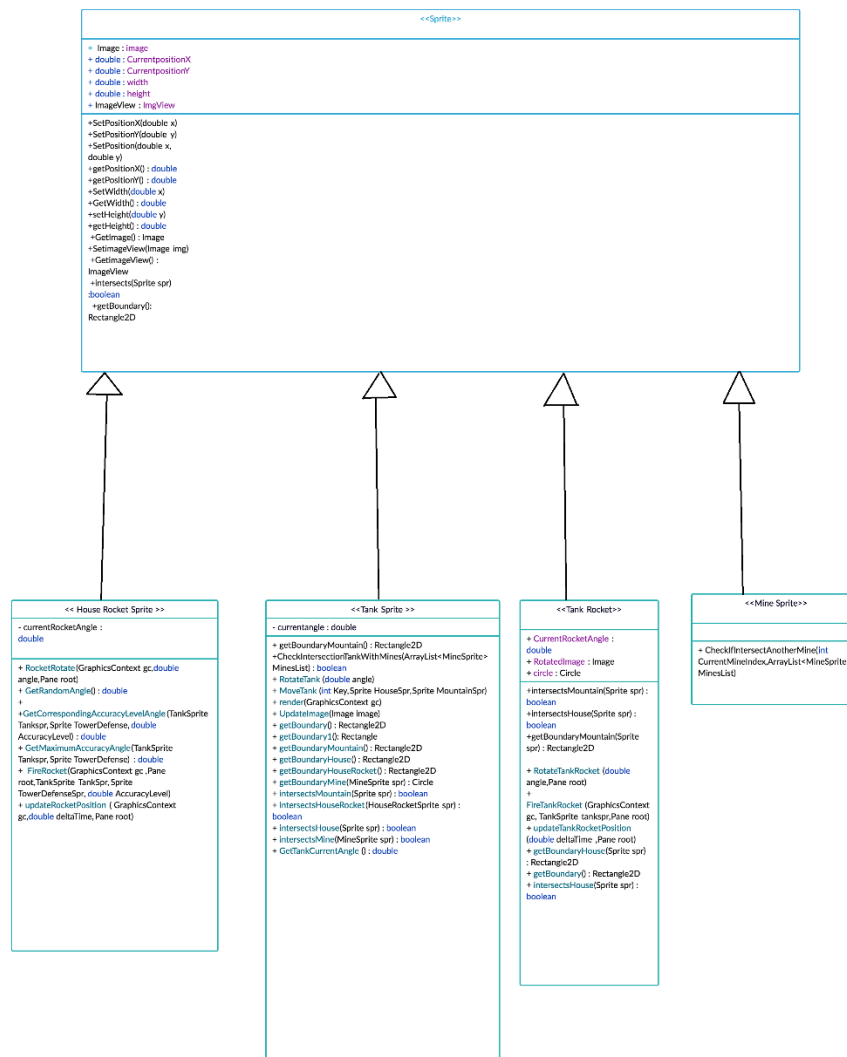

Assumptions

- The Mines positions are generated randomly, and they won't intersect the tank, mountains, house and can't get out of screen.
- There are 2 Mountains,1 Tower Defense (house that fires missiles) and 1 Tank that are all inserted at specified fixed positions each game.
- The Tank rotates 45 degrees when pressing right key and -45 degrees when pressing left key; thus, 8 directions are implemented.
- Pressing Up or Down keys moves the tank in the required angle.
- The House Rockets are magically powerful in a way such that they are able to pass through the mountains without getting exploded. The Tank rockets, on the

other hand, when hits a mountain it gets exploded (disappear) and can't pass through it.

- The Tank when moves out of the screen, it will get inside from the opposite side(like classical 2d games) for example: if the Tank is moving to the right and left the screen, it will appear as entering from the left side of the screen.
- Once a change in the game state occurs, Winning/Losing, another window screen appears prompting to the user that they won or lost.
- The Game Statistics are recorded after each game in a text file called "highScores.txt", where it includes
    - The elaboration of why the user lost/won (ex: tank hit a missile so that is why it lost)
    - The Tank Statistics, which include the total number of Rockets fired by the tank, the total number of Tank Rockets misses (tank rockets missing the house) and the number of Tank Rockets that hit the House.
    - The House Stats, which include the total number of Rockets fired by the House, the total number of House Rockets misses (house rockets missing the tank) and the total number of House Rockets that hit the Tank.

Design

Screenshots of Game