DESIGN & IMPLEMENTATION


❖ The game starts at the main menu where we have three options - **Play** to play the game , **Continue previously saved game** to play a game which was saved earlier and **Logout** to exit from the game

❖ The main game screen occurs where we have to click to start playing the game. We are shown the **score** and the **coins** the hero has collected on the top middle and top right of the screen respectively.

❖ On the top left of the screen , we have a settings option which can be used to pause the game. The settings option has 4 further options - **Load previously saved game** which will display a list of saved games from which we can pick either one of them and play the game which was saved earlier , **Resume** to resume the game , **Save current game** to save our current progress and **Home** to take us back to the main menu

❖ If the hero dies , **Game Over** screen appears which will give us three options - **Play Again** to play the game again , **Home** to go to main menu and **Resurrect** to resurrect the hero and play the game from the position where he died (It can only be done for a certain amount of coins).

❖ If the hero goes till the end and beats the **Boss ,** a **Game Won** screen appears to tell us that the player has won the game
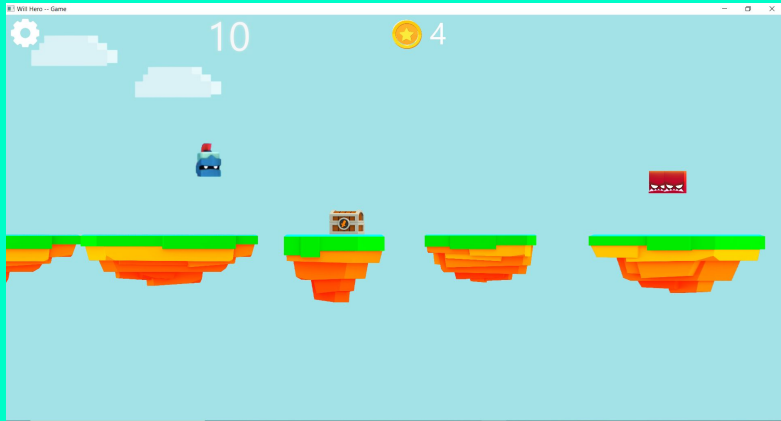
GAMEPLAY DESIGN

➤ The main aim of the game is to be safe from all the obstacles and abyss and in the end defeat the BOSS ORC.
➤ The game is designed such that the hero continuously jumps at his place. You must click the mouse at correct time to encounter the obstacle
➤ On each click of the mouse, the hero moves forward by a certain length.
➤ The Game Objects, viz the islands, orc, hero, and obstacles are made in the scene builder using image views.
➤ The behaviour of each object is defined in the respective controller classes of that particular screen or in its corresponding class.
➤ Hero's activities such as falling in the abyss, colliding with an orc are maintained using its coordinates which are repeatedly checked in each mouse click.
➤ Different transitions, as provided by JavaFX are used to implement each activity.
➤ At each point the number of the score and the number of coins earned until now are displayed on the screen of the Main Game.
➤ Coins can be earned using coin chests and by killing the orcs.
➤ Score increases as Hero moves forward.

AP CONCEPTS

The Concepts taught in class during this semester were crucial in implementing this project:

➔ Class relationships, Inheritance and Polymorphism were extensively used to link various functionalities together.
➔ Abstract classes and some marker interfaces were also used.
➔ Concepts of JavaFX such as timers, transitions, keyframes, stages etc.
➔ Concept of Serializable and file handling.
➔ Threads were essential in using timers at various points in the game.
➔ Exception handling to catch various checked and unchecked runtime exceptions.
➔ Use of iterator and observer design patterns

INDIVIDUAL EFFORTS

Almost everything was discussed and brainstormed by both of us, however the implementational work was divided as follows:

Vishesh Rangwani(2020155)

- Implementation of Obstacles(TNT)
- Handled functionality of opening of chests such as rewards and equipping weapons.
- Handled changing of Game Screens on clicking certain options
- Handled saving a game and loading of a saved game.
- Created MainGame Screen and forward movement of the Hero on that.
- Managed increment of score and coins and its usage.
- Created Game Over screen and Load Previously Saved Game Screen along with their respective functionalities.

PRAKRIT GARG(2020100)

- Created the Home Game Screen and Pause Game Screen on Scene Builder
- Handled the function which checks whether hero has fallen in the abyss or not
- Handled the function which checks whether the hero has come under the orc.
- Handled the function which is used to make the Boss orc move and also handled the fight of the Boss orc with hero
- Handled all the classes and used their attributes and functions in the main game

BONUS FEATURES

★ Sound on each jump, death of Hero, on clicking pause button and on winning.
★ Added a button for Winter Mode. It is a toggle button to turn on/off falling of snow
★ Hover functionality in various menus. The text gets underlined when moves hovers over them.