

SIMPLE GAME REPORT

GALAXY REALM U1.0

IONEX GAMES

2017

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Simple Game Report

Galaxy Realm v1.0

Game Description

Galaxy Realm™ is a premium-quality 2D space game. Designed by our mmm... we call it company? its iONEX GAMES. Discover the space, live the adventure and eliminate those enemies with your powerful upgradable space shuttle.

Features

- Single Player Mode – play against the smartBotx that keeps speeding up, just don't die okay? It's a sum of one game man, trust me.
- Multiplayer-Enemy Mode – play against your friends, family, and colleges, beat them with your shuttle.

Bonus Features

- Multiplayer-Enemy Mode – play against your friends, family, and colleges, beat them with your shuttle.
- Levels – every time your score increases by 20, level increases by 1, and the enemy goes faster.

Extra Features

The following features are not currently included because of time issues but we will do them after the exams, followed by posting our first game on Google Play store.

- Single Player Mode
 - Levels Mode
 - Lives Mode (Three lives and you lose)
 - Ultimate Mode (Just play and eliminate enemies with no damage)
- Multiplayer-Friend Mode
 - Levels Mode
 - Lives Mode
 - Ultimate Mode
- Store
 - Buy new Space Shuttles
 - Change your shuttle to your favorite color
 - Refill your health? Yeah! Why not
- Leaderboard
 - Compete with your friends, always be the first okay?
- Sign in
 - Connect with your friends and world using Facebook or Google Accounts
- Power-ups
 - Bringing some presents from the space to your special powerful future shuttle

Implementation Description

Classes and their Methods

- WelcomePage
- Window
- Game
- Handler
- GameObject
- HUD
- ID
- Player1
- Player1Bullet
- Player2
- Player2Bullet
- Enemy1
- Enemy1Bullet
- Menu
- KeyInput

Most of the previous classes has two important Methods like tick and render methods.

WelcomePage

The WelcomePage class is a class created with timers and some methods like tick and render to get the game started.

Window

This class is used to make the main JFrame of the game.

Game

Class game is the main class which contains the start/stop (to start and stop the game using an additional thread), run (to start the render and tick methods in the right time after calculating the FPS -Frames Per Second-), tick, render (both to update the game), and clamp (to set bounds to our frame so the players won't go out of the screen) methods in addition to some important fields as gameState which defines the current game state.

Handler

This class is our handler class which handles, updates, maintains, and render all the game objects in our game on screen. It carries all our GameObjects using a LinkedList.

GameObject

The GameObject class is an abstract class which has a multiple of abstracted Methods like tick, render, getBounds (which is used to get the bounds of each object created, it is used in the collision detection), which should be implemented in each GameObject created in our game as Player1, Player2, Player1Bullet, and Player2Bullet.

HUD

The Heads-Up-Display class is the class responsible for printing out some important user-needed data like the Health bar and the Players names.

ID

It is an enum class which stores all the game objects we want to create in our game.

Player1/Player2/Enemy1

Both classes are classes which extend GameObject and used to create our users-players and enemy player too.

Player1Bullet/Player2Bullet/Enemy1Bullet

These classes extend GameObject too and used to create our player's/enemy's bullets.

Menu

The class Menu is a class created to build a beautiful main menu to our simple game that holds Play, Help, Credits, and Exit options. Also, it extends MouseAdaptor to select the preferred option easily.

KeyInput

Using KeyAdaptor inside the Game class? What a mess; we have created this class to gather all out key inputs used in our game.

Assets

- SpaceShooterRedux [1] – Beautiful assets which brought out our game to life, Designed by the professional game assets maker Kenny Group.
- iONEX Games/GalaxyRealm Logos – Are designed by Mohamed El Ghamry using simple tools of Adobe illustrator and Photoshop.

Programs Used

- Eclipse IDE
- Adobe illustrator CC
- Adobe Photoshop CC

Roles

- Mohamed El Ghamry: WelcomePage / Game / Handler / HUD / Menu / Player1 / GameObjects / KeyInput
- Mostafa Hazem: ID / Player1Bullet / Enemy1 / Enemy1Bullet / Player2 / Player2Bullet / Window

Additional Documentation

- Difficulties encountered and tricks used:
 - Keys Lag – solved by making a Boolean array to hold whether the key is pressed or no, in addition to that, we have a condition that if up and down are both not pressed we set the velY = 0.
 - Bullet Collision – we used getBounds() method which returns a rectangle around the object specified, when there is an intersection between the player/enemy with bullet, the player/enemy health drains and the bullet is removed from the array list.
 - Popping JFrame – many people makes a new JFrame for each new state and destroy the old one; but why? ... we have done an enum which indicates the current gameState followed by the specific render and tick methods in each state and switches inside the same JFrame.
 - Enemy Ai – we have made our enemy's speed increase each time it rebounds from the border, which makes it harder.
 - WelcomePage Logos – we didn't know how to use the fading methods, so we've made an integer timers set with a specific value to be suitable with the background music.

User Guide

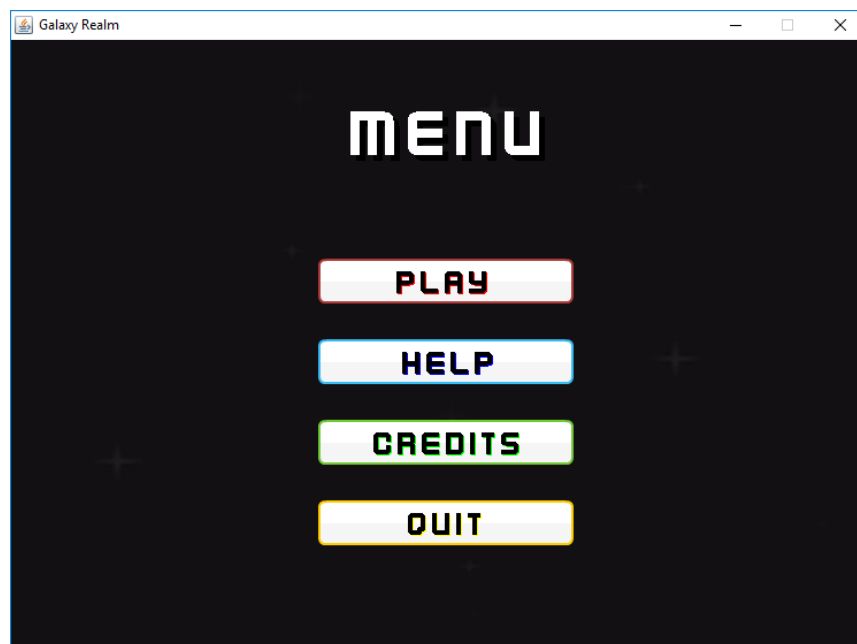
In the CSE126_GameProject zip file you will find:

- CSE126_GameProject folder
- Game folder
 - Res folder
 - GalaxyRealm.jar
 - GalaxyRealm.exe

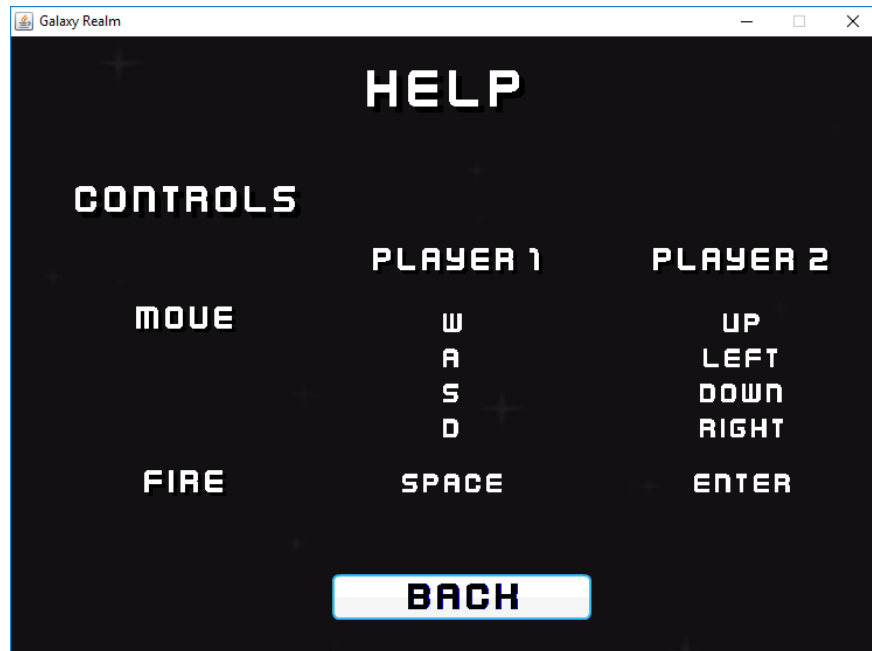
You can play the game on windows using the exe file or on any other operating system you can use the jar file.

If you want to check the source code; please import the project folder on eclipse IDE as NetBeans IDE does not support the used font.

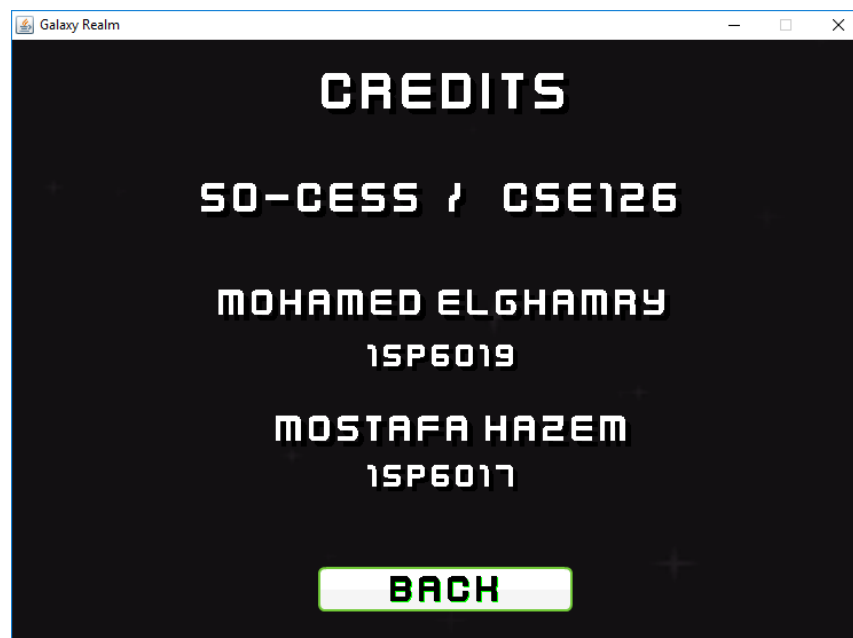
Snapshots of the game:



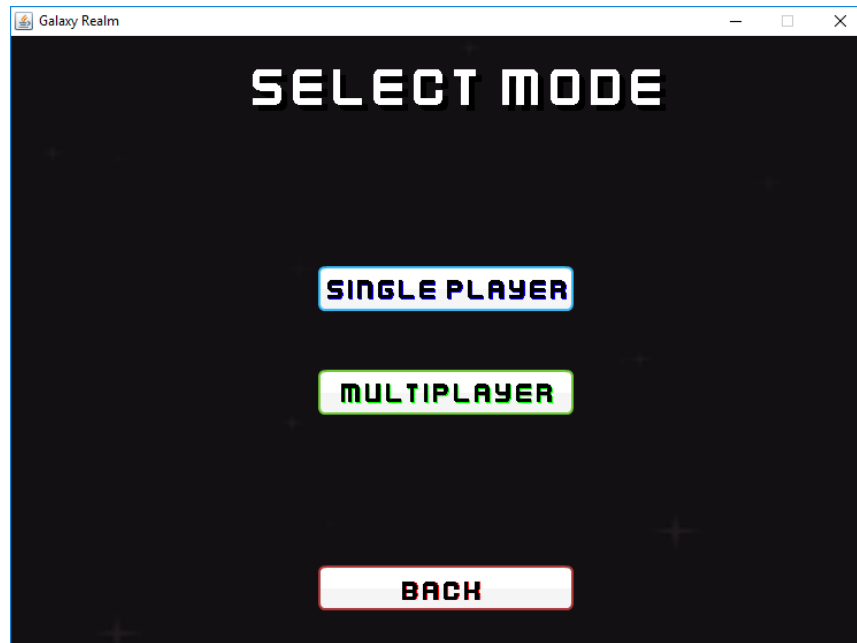
- Main Menu



- Help Menu



- Credits Menu



- Select Mode Menu

References

- [1] <http://kenney.nl/assets/space-shooter-redux>