Documentation and Class diagram for the Lazarus Game

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Repository at: https://github.com/CSC-413-SFSU-02/csc413-secondgame-team06/tree/master/LazarusGame

The goal of Lazarus (the game) is to get the character, Lazarus, out of the pit. Boxes are dropped on Lazarus, but once Lazarus hits the stop button the machine that drops boxes is stopped. If a box falls on Lazarus, the game is lost. Lazarus must climb on the boxes to get to the stop button. The kinds of boxes are, from lightest to heaviest: cardboard, wood, stone and metal. If a heavier box falls on a lighter one, the lighter one is crushed. The movement of Lazarus is controlled by the left and right arrow keys. There are three levels for the game.

Source Packages:

**Package name**: resource

This package contains the files used by the java program for sound and images. It has also a file contains the map of the walls, the stop button location and Lazarus initial location.

**Package name**: Lazarus

This package contains the java code.

Class Description:

***SoundEffects.java*** : This class has methods to play sounds continuously or just once.

***KeyControl.java*** : This class extends KeyAdapter and will get the keyboard actions, which then is passed to EventNotifier.

***EventNotifier.java*** : This class implements the Observable class. It will notify the observer whenever collisions and keyboard events occur.

***GameObject.java***: This class has the data fields and behaviors that are shared among the objects of the game, such as position and speed. It contains update, draw, get, set methods.

***Box.java***: This class extends GameObject and implements Observer. This class has data fields for the position, speed, kind of box, and the box situation (dropping or not). There are get methods, method to detect the collision event, draw and update methods.

***StopButton.java***: This class extends GameObject and implements Observer. The stop button is used to stop the boxes from falling and then advancing the level to the next level. It has setters and update methods.

***Lazarus.java***: This class extends GameObject and implements Observer. It has methods related to the position and movements of Lazarus. It has get, set, collision event identification, update, and draw methods.

***GameWorld.java***: This class extends JApplet and implements Runnable. It has methods to convert image files in buffered images, as well as, start, run, get and set methods.

***LazarusWorld.java***: This class extends GameWorld.java. It loads the background, the sprites images, and checks the collisions between boxes, Lazarus, wall, and stop buttons.

***GameStart.java***: This class instantiates objects of the SoundEffects.java and LazarusWorld.java classes, as well as sets up the frame for the game. It has the “main” method that initializes the game.

Lessons learned: to reuse code (we reused SoundEffects.java). Had more practice with GitHub.

Challenges: To work with images and frames.

Helpful source: Plane game (wingman) and internet tutorials, such as www.tutorialspoint.com

Reusable :

Inherits or implements:

Creates objected of the class

EventNotifier

Observablee

KeyControl

KeyAdapter

GameWorld

JApplet

Runnable

LazarusWorld

GameStart

SoundEffects

Observer

Lazarus

StopButton

GameObject

Box