

Introduction to Programming

High Distinction Task 9.3: Custom Program

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Design Report of Rock Rider Extended

Summary of Program

The game was created using gosu library which allow player to travel around a highway using arrow buttons on keyboard and pick up fruits to gets score and avoid objects in order not to lose their score. Foods and objects will be randomly spawn on the map, fruits will be moving down towards the bottom of the map and the objects also do the same, but it will change the direction up or down randomly. The game has 3 levels and different difficulty by each, at level 1 the moving functions is basic by using arrow keys to move. When player reach 5 points or more the background will change and it is level 2, in this level player will have their arrow keys reverse for example press left to go right. And finally, when player has 10 or more points, they will be switching to level 3 when the speed of object will be increase by twice of it's original. When the player reaches 15 or more points, the congratulation message will pop up including a golden cup for the winner, after that player can press E to exit the game or press P to continue playing. Each level will have a notifications message at the bottom of the screen showing the instruction of level. All the designs of the game are based on classic 8-bit design, also the background music have the influence of 8bit.

List of records and enumerations

```
SCREEN_WIDTH = 430  
SCREEN_HEIGHT = 720
```

```
module ZOrder  
  BACKGROUND, FOOD, PLAYER, UI = *0..3  
end
```

```
class Rider  
  attr_accessor :score, :image, :minus, :plus, :vel_x, :vel_y, :angle, :x, :y, :s  
  core
```

```
class Food
```

```
attr_accessor :x, :y, :image, :vel_x, :vel_y, :angle, :score, :type
```

```
class Object  
  attr_accessor :x, :y, :image, :vel_x, :vel_y, :angle, :score, :type
```

```
class Notifications  
  attr_accessor :x, :y, :image, :angle, :color, :scale_x, :scale_y
```

```
class Endscreen  
  attr_accessor :x, :y, :image, :angle, :color, :scale_x, :scale_y
```

Main function and procedures

Player movement: allow player to move up, down, left, right using arrow key

Player collect food: When approach food the player score increase by one

Player met object: When approach object player's score got minus 1

Food spawn: Food will be spawn randomly

Food moving: Food moving up and down

Object spawn and move: Spawn food and move up and down randomly

Object change direction: During the moving, it will change the direction to up or down

Reverse move of player: Reverse the functions of arrow keys

Display notifications: Display instruction and congrats message.

Structure chart

