

**Ahsanullah University of Science and  
Technology**



**CSE-1200: Software Development  
Balancedo Project Game Report**

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## **Contents**


<b><i>Name</i></b>	<b><i>Page No.</i></b>
<i>Game Description</i>	1-6
<i>Functions used in the game</i>	7
<i>Problems we faced</i>	7
<i>How We solved the problem</i>	7
<i>Ways to improve our Application</i>	7-8
<i>Contribution</i>	9


# Project Balencedo

**Game Description:** The name of the game is Balencedo. It is a 2D balancing game. The main task in this game is to catch fruits in a basket which is placed right at the centre of the mass of a seesaw while balancing on it. In a seesaw when a weight is put on at any side of the seesaw, the seesaw tends to move down on that side. Similarly in this game, when the basket on the seesaw starts getting heavier while collecting fruits, the seesaw will tend to move down on that particular side. So that's where our task begins. We have to balance the basket on the seesaw and also collect fruits at the same time. And if we fail to balance the basket and the seesaw touches the ground the game will be over. The game will run in an infinity loop. To increase the difficulty level we have added some bombs and rotten fruits which we should be careful of while playing the game.

 **Basket:** That's the main character of our game. The basket will balance on the seesaw and move while collecting the fresh fruits. But there are some dangers which the basket should be aware of. While collecting fruits we should keep it in our mind to not to move the basket towards the right or left edge of the seesaw or the basket will not be able to balance and as a result the seesaw will touch ground. And the game will be over right there.

 **Fruits:** Collecting the fresh fruits is the main goal of this game. The fruits those we are struggling to collect in this game are apple, papaya, lemon and orange. All these fruits are falling randomly from the trees. Each fruit have specific individual point which will be added as score when it falls on the basket.

 **Rotten fruits:** Rotten fruits are something we don't want to catch in the basket. So we need to make sure that the rotten fruits do not get inside of the basket. And if it does then points will be deducted.

 **Bomb:** Bombs are the scary part of this game. If even one bomb falls in the basket then the basket will explode and game will be over. So the player has to be aware of the bombs!

## **Controls:**

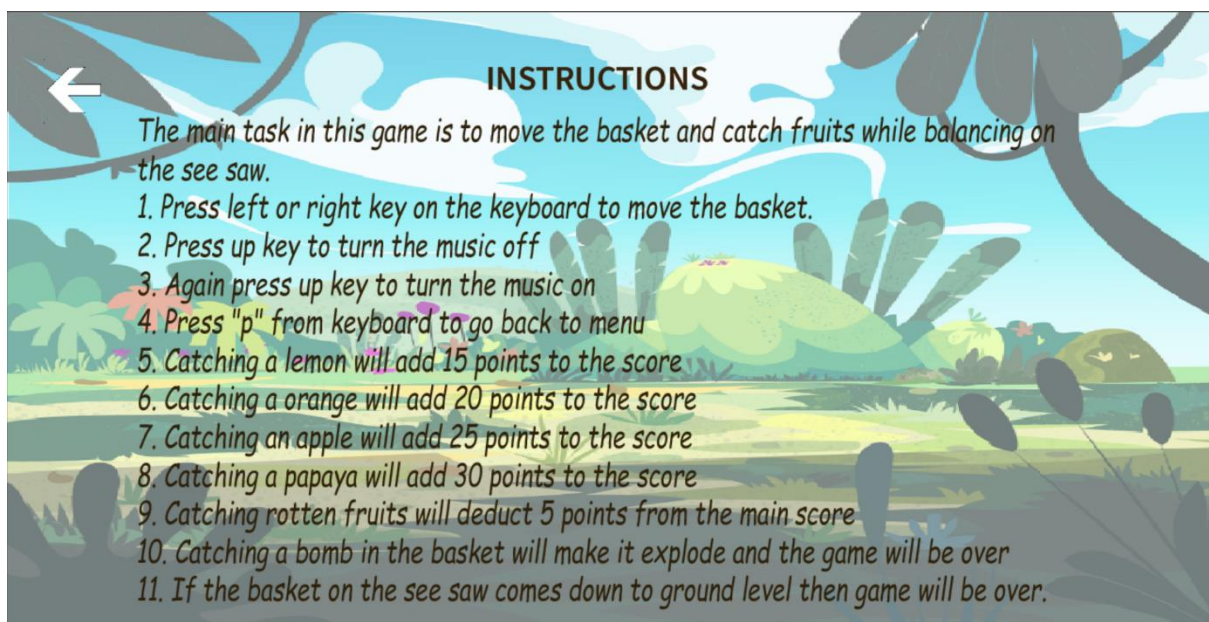
- Press “up” key to turn off the music
- Press “left” or “right” key to move the basket
- Press “p” key to go back to the menu

Some picture of our game is added below:



**Figure 1.1:** Main Menu

This is the main menu of our game. If we click on the instruction button the picture given below will be shown.



**Figure 1.2:** Instructions

All the instructions regarding the game is given here. Player can read these instructions before playing the game. Clicking the arrow button will bring back the player to the main menu again.

After coming back to the main menu if the player clicks on the credits button below picture will be shown.



**Figure 1.3:** Credits

This is the credit page of the game. And to go back to the main menu we have to press the arrow button. And in the main menu if we click on the play button the game will start.



**Figure 1.4:** Main Picture of the game

Fruits falling  
from the trees

Seesaw

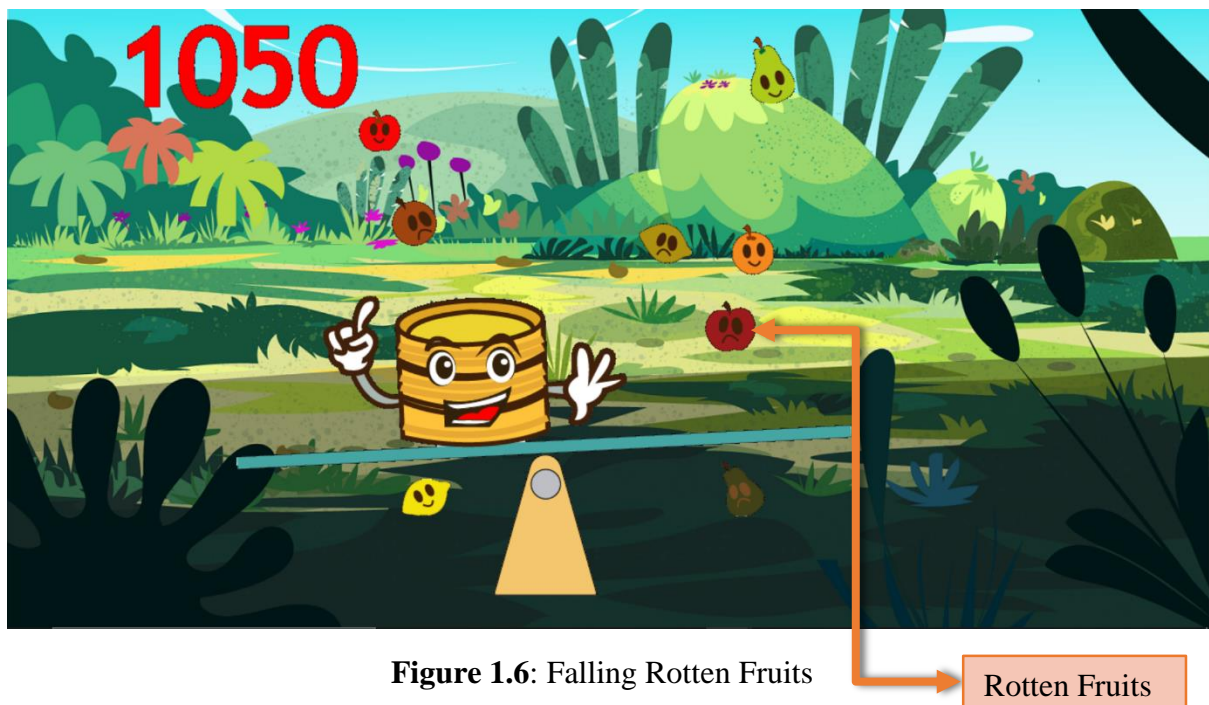
Basket





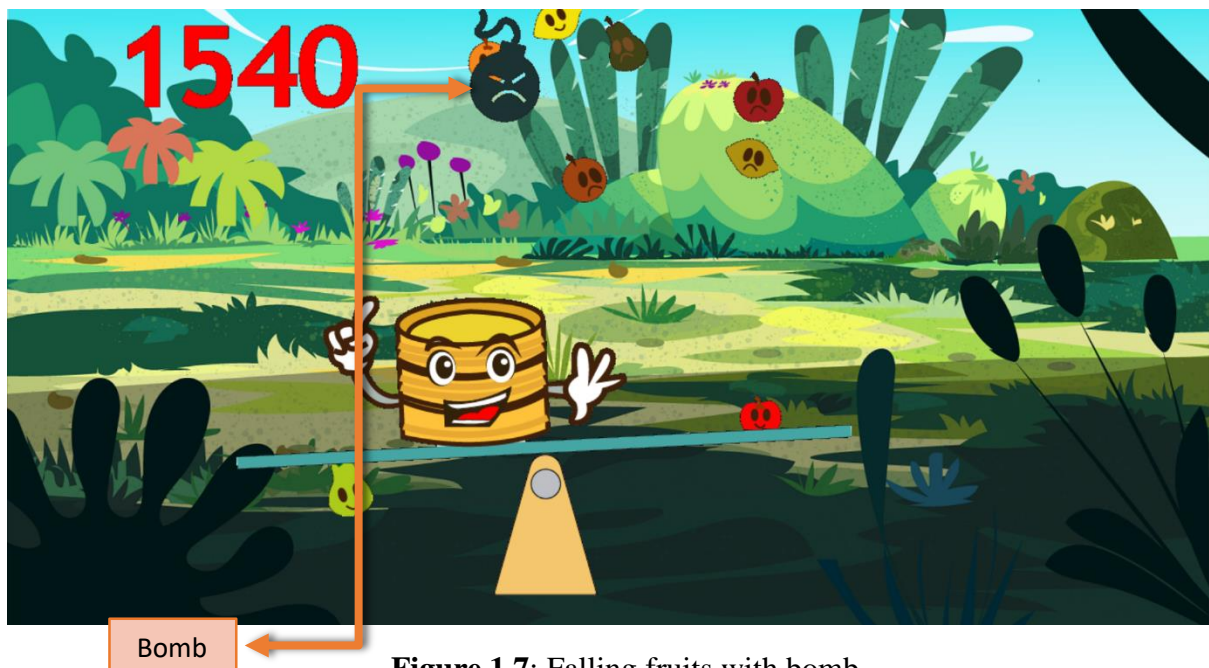
**Figure 1.5:** Falling Fruits in the basket showing scores

After catching each fruit in the basket the score will increase and when it crosses 1000 points to increase the difficulty of the game rotten fruits are going to fall just like the below picture.



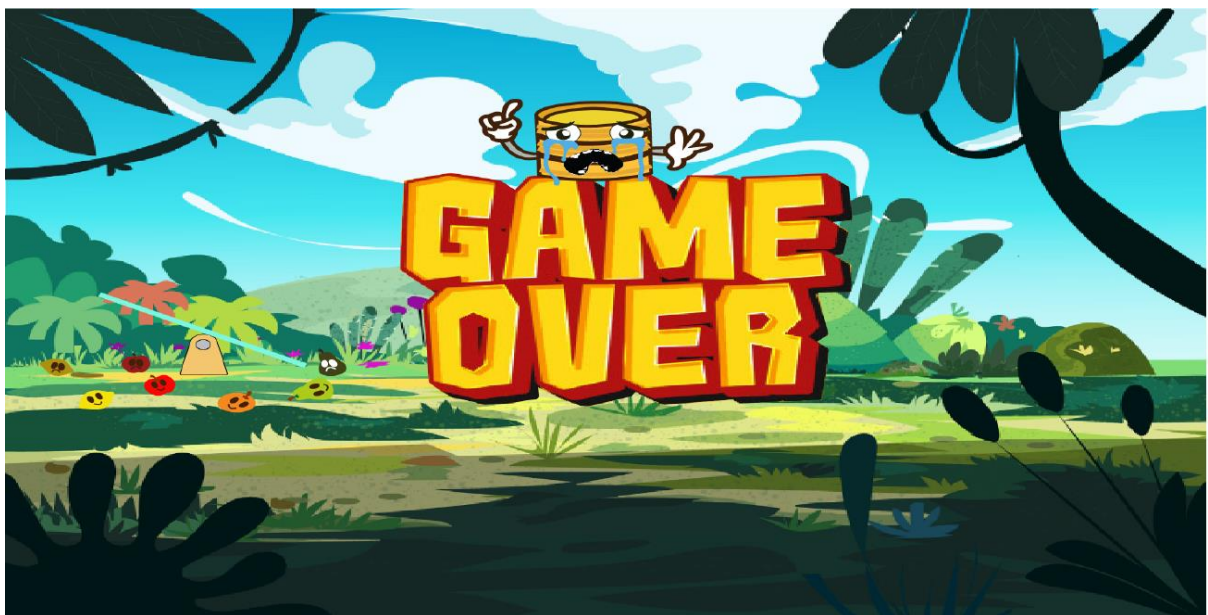
**Figure 1.6:** Falling Rotten Fruits

If the player catches rotten fruits in the basket points will be deducted. But once the score crosses 1500 points bombs are going to fall just like the below picture.



**Figure 1.7:** Falling fruits with bomb

And if the player catches a bomb in the basket the game will be over and below image will be shown



**Figure 1.8:** Game over Picture



Again while playing the game if the player fails to maintain the balance of the seesaw and it touches the ground the basket will fall down from the seesaw.



**Figure 1.9:** See-Saw Touching Ground

And again the game will be over showing the bellow picture. And the player will find himself back in the main menu.



**Figure 1.10:** Game Over



**Functions Used in the Game:** So the main three parts of our game is balancing, collision and scoring. In balancing part, the basket balances on the seesaw and collect fruits and if the basket on the seesaw moves down to the ground then the game will be over. In the collision part, the things those are happening are, the freely and randomly falling fruits, rotten fruits and bombs. Another thing that's happening is collision. We have set the condition in such a way that while coming down if the fruits touches the area of basket the fruit vanishes and it is considered that the fruit went inside the basket. Lastly in scoring part, we have set individual points for each fresh fruits. So when the collision happens and the fresh fruit vanishes the point of that particular fruit is added to the main score. And for rotten fruits 10 points are deducted from the main score.

The functions those we used in the coding of the game are:

- ✚ **papaya():** This function handles the random falling of papayas and adds 30 points to the main score when collision happens.
- ✚ **lemon():** This function handles random falling of lemons and adds 15 points to the main score when collision happens.
- ✚ **orange():** This function handles random falling of oranges and adds 20 points to the main score when collision happens.
- ✚ **apple():** This function handles random falling of apples and adds 25 points to the main score when collision happens.
- ✚ **rottenApple():** This function handles random falling of rotten apples and deducts 10 points from the main score when collision happens.
- ✚ **rottenPapaya():** This function handles random falling of rotten papayas and deducts 10 points from the main score when collision happens.
- ✚ **rottenLemon():** This function handles random falling of rotten lemons and deducts 10 points from the main score when collision happens.
- ✚ **rottenOrange():** This function handles random falling of rotten oranges and deducts 10 points from the main score when collision happens.
- ✚ **bomb():** This function handles random falling of bomb and when the bomb touches the basket the game is over.
- ✚ **iMouse():** In this function the work of menu is done. Through iPassiveMouse() we took input of the axis's of the image of menu.
- ✚ **iSpecialKeyboard():** This function handles the balancing part. Different positions of the seesaw are shown when left or right input is given through keyboard.
- ✚ **score():** This function handles the scoreboard part. That means the constantly changing score that is shown on the screen while playing.

**Problems We Faced:** While doing the coding of the game we faced some problems. Those problems are mentioned below:

- ✚ **iGraphics():** As iGraphics was a completely new library to us we confronted some complications to apprehend it's built-in functions and other features.
- ✚ **Adding BMP Pictures:** While adding the pictures in bmp format there was no function available in iGrapahics to fix the width and height of the picture.
- ✚ **Timer Related Issue:** We were not able to use more than 9 timers in the project.
- ✚ **Collision:** When we were working on the part where the fruits vanishes into the basket we faced an issue and the issue was the fruits vanished a lot faster than we wanted.
- ✚ **Sound Adding Issue:** We could not play more than one sound simultaneously.
- ✚ **Fruits Falling Issue:** We were using a definite value of x axis to make the fruits fall from the tree and because of these the fruits were not falling randomly.

**How We Solved the Problems:** To solve the issues mentioned above we took below steps:

- ✚ To solve the issues with BMP format pictures we had to resize the pictures and use their co-ordinates to add them perfectly in place.
- ✚ In iGraphics it is not possible to use more than one music simultaneously so we used only one music throughout the whole game.
- ✚ To fix the issue with the collision of the fruits in the basket we tried to take bigger range of co-ordinate of the y axis of the basket.
- ✚ To fix the issue with fruits we used a function called rand() which helped to make the fruits fall from the trees randomly.

**Ways to Improve Our Application:** We tried our best to make the application flawlessly and we believe that we have succeeded on that particular point. Because there is no bug in our application and it is running seamlessly without facing any errors. But to further improve our game we can do many things. Such as

- ✚ We can divide our game into three modes which would be easy, medium and hard based on the difficulty level. In the **Easy Mode**, there won't be any difficulties. Here the only obstacle would be if he fails to balance the seesaw and it touches the ground the game will be over. In the **Medium Mode**, rotten fruits will also start falling with the fresh fruits and it would be hard for the player to achieve points because if he catches the

rotten fruits they will decrease the points. Lastly, in the **Hard Mode**, bombs will also start to fall with the rotten fruits and if the player catches the bomb in the basket, the basket will explode and the game will be over. By doing these process player will be able to choose his/her own choice of mode.

- ✚ Again we can add more levels in the game and increase the obstacles which will make our application more interesting.
- ✚ We can also add another option in our main menu which would be the High Score and we can add the name of the player too.
- ✚ Also if we could add more than one sound effect in our game then it will be much more interesting for the player.

### **Contribution:**

#### **ID: 190204091**

- Code for fruits falling and collision
- Code for scoring
- Code for balancing the seesaw
- Code for setting the timer for the fruits
- Adding Background

#### **ID: 190204102**

- Code for fruits falling and collision
- Code for scoring
- Code for showing the game over part
- Code for adding music in the game

#### **ID: 190204109**

- Code for the main menu
- Code for balancing the seesaw
- Code for adding a special key to go back to the main menu while playing the game.
- All the graphics work

#### **ID: 190204114**

- Adding pictures in the game
- Resizing the picture