Project Proposal

SECJ1023 Programming Technique II

Final Project Presentation

Section 03

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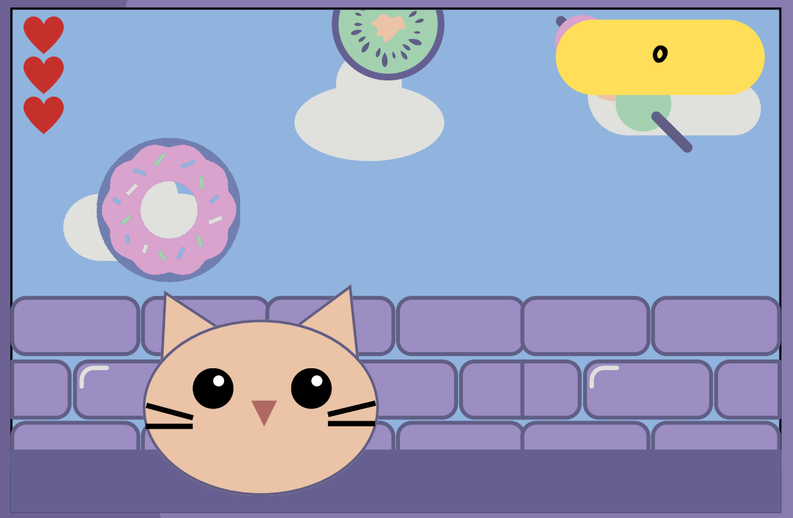
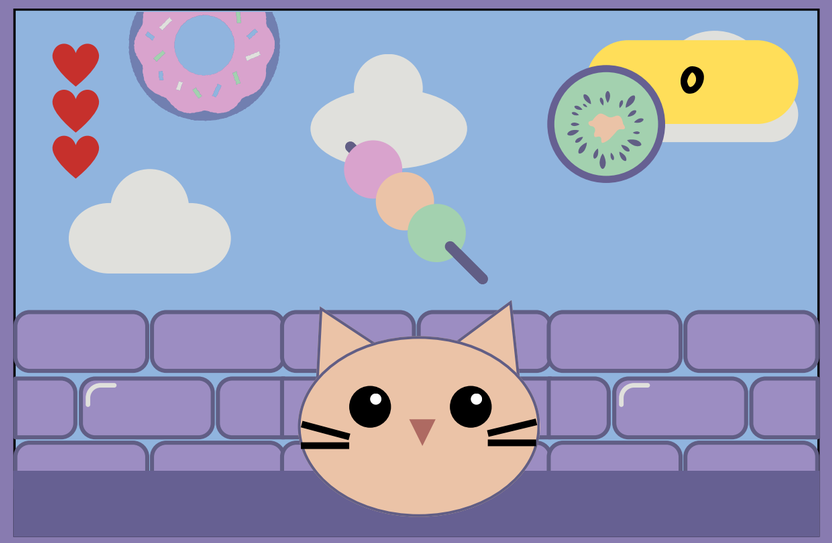


Players need to press the left or right arrow key to change the cat's direction in the game and catch the food. In order to get the highest score, the player must catch all the food while maintaining lives by not letting the food touch the floor.

Game Mission

After the game starts, Players need to control the cat's movement across the screen using the left and right arrow keys on the keyboard. As foods rain down, players must position the cat under the food to catch it. Each successful catch earns points, while missed food items deduct the player's lives.

Since there is no maximum limit on the number of food consumed, the player will try to obtain the highest score. After all, the maximum number of player’s lives is only 3, so after the player used up all the lives, the game ends.



Explanation of Classes

Point Class

The Point class serves as the base for the entire project's coordinate system. The class has constructors for initializing the coordinates, as well as methods for manipulating and accessing the coordinate values.

Food Class

The Food class inherits from the Point class, leveraging the coordinate system defined in Point. The Food class forms an association with the Player class, as the player interacts with multiple food items throughout the game. There are also aggregations between the Score and Food class which indicates that different foods may have an effect on or relate to the game's score.

Explanation of Classes

HitArea Class

The HitArea class defines the area that can be hit by food. It includes methods to check if a hit occurred, and to set and get the coordinates. Encapsulation is used to manage the hit area's coordinates and interaction logic.

Floor Class

The Floor class represents the game floor, with attributes including location, height , and length. It provides methods such as to set color and getting choordinte get coordinates. This class encapsulates all floor-related properties, ensuring that changes to the floor's appearance or position are managed through defined methods.

Explanation of Classes

Score Class

The Score class manages the player's score. It includes methods to set, get, increment and print the score. This class displays the player’s score throughout the game.
It also have the lives of player’s function inside this class which when the food was hit either the player or floor, the score or lives might have been changed.

Background Class

This class encapsulates all properties and behaviors related to the background, allowing for a consistent and controlled way to manage the game's backdrop.

Explanation of Classes

Player Class

The Player class encapsulates all aspects of the player's behavior, including scoring and interactions with food, demonstrating both encapsulation and polymorphism through its methods. The Player class forms a significant association with the Food class, as the player's primary action is to catch food items. This class also inherits from the Point class, utilizing the coordinate system defined by Point.

Inheritance

```
class Food : public Point, public Score
{
    protected:
        int size;
        int color;  // Using an int to repre
```

polymorphism

```
class HitArea
{
    public :
        HitArea(){}
        virtual void gotHit(int i) = 0;
};

#endif
```

array of objects

```
vector<Food> foods;
srand(static_cast<unsigned>(time(0)));
```

Thank You!!

By S03_PixCrew