

GamePlayer (Entity)

- Responsibilities:
- Stores the username of the account once signed in
 - Stores the dimension of the player
 - Initializes and stores the location of the player
 - Keeps track of whether the player is "dead" or not
 - Tells the current location of the Player
 - Increases and decreases the y location of the player to let it "fly"

- Collaborators:
- Obstacle
 - Reward
 - Gameboard

Obstacle (Entity)

- Responsibilities:
- Stores the dimensions of the upper obstacle and the top obstacle
 - Stores the location of the obstacle
 - Changes the x position of the obstacle
 - Tells the current height and width of both the top and bottom obstacle

- Collaborators:
- Gameboard
 - Player
 - Reward

Rewards - subclasses GoldenApple and PoisonApple (Entity)

- Responsibilities:
- Stores the location of the reward
 - Sets the dimension of the reward
 - Gives the x coordinate of the reward
 - Gives the height and width of the reward
 - Moves the reward to the left

- Collaborators:
- Poison apple
 - Golden apple

Stopwatch (Entity)

- Responsibilities:
- Tells whether the stopwatch is running or not
 - Starts the stopwatch in nanoseconds
 - Stops the stop watch
 - Returns the amount of time passed in seconds

- Collaborators:
- GameManager

Leaderboard (Use Case)

- Responsibilities:
- Stores a pairing of the top scores and their respective usernames
 - Updates a users score if they are already on the leaderboard
 - Gives current standing of the leaderboard
 - Adds a new score with its username to the leaderboard

- Collaborators:
- GameManager

Gameboard/Grid (Use Case)

- Responsibilities:
- Controls movement of the entities on the Gameboard
 - Initializes the playing space and starts the timer
 - Tells if two entities are touching each other
 - Ends the game
 - Updates the score at the end of the game
 - Updates the score after an award is touched
 - Keeps track of the score

- Collaborators:
- Player
 - Obstacle
 - Rewards
 - Stopwatch

Gameboard/Grid (Use Case)

- Responsibilities:
- Sets location of the rewards, obstacles and player in space
 - Creates instance of player
 - According to length and width randomly creates instances of rewards and obstacles
 - List of all possible obstacles (various heights)
 - Sets distance between each obstacle (as score increases, distance will change)
 - Decides whether the Player is touching an obstacle or reward

- Attributes:
- Length
 - width

- Collaborators:
- GamePlayer
 - Obstacle
 - Rewards
 - GameManager

PlayGame (Controller)

- Responsibilities:
- Controls user keyboard input
 - Starts/runs the game
 - Initializes action based on user menu selection
 - Tells whether the class is controlling user input

- Collaborators:
- GameBoard
 - GameManager
 - LeaderBoard

Menu (Presenter/Text UI)

- Responsibilities
- Welcomes user to the game once they sign in
 - Presents the user their menu options
 - Regulates outcome of each user choice
 - Displays the menu option again after choice is made in case user changes their option

- Collaborators
- PlayGame
 - Login
 - GUI

GUI

- Responsibilities
- Creates each entity visual
 - Creates the frame (visual gameboard) with a title
 - Changes the location of the entities on the frame
 - Moves the entities in the frame to the left

- Collaborators:
- GameManager