**2D Unity Game: Space Explorer**

## **Objective:**

**Create a simple 2D game named "Space Explorer" to reinforce the concepts of Unity Interface, Navigation, Basic Game Object Manipulation, Transformations, Unity's Component System, Scene Creation and Management, and Introduction to Physics and Colliders.**

## **Game Concept:**

**The player controls a spaceship in space, navigating through asteroids while collecting stars for points. The game will have two levels, each with a score threshold to progress.**

## **Game Elements:**

### **1. Spaceship (Player Object):**

**Description:**

* **A 2D spaceship controlled by the player.**

**Functionality:**

* **Movement in all directions using WAD keys.**
* **Shooting lasers using the Space key.**

### **2. Asteroids:**

**Description:**

* **2D asteroids floating in space.**

**Functionality:**

* **Move randomly in the scene.**
* **Can be destroyed by the spaceship's laser.**
* **Collisions with asteroids deduct points.**

### **3. Stars:**

**Description:**

* **2D stars scattered in space (used as the score asset).**

**Functionality:**

* **Collecting stars adds points.**

## **Game Flow:**

### **1. Menu Scene:**

* **Play Button: Transitions to the Gameplay Scene.**
* **Instructions Button: Displays a UI panel with game instructions.**

### **2. Guide Scene:**

* **Displays game instructions and controls.**
* **Option to return to the main menu.**

### **3. Level 1 Scene:**

**Game Elements:**

* **Spaceship, Asteroids, Stars.**

**Objective:**

* **Navigate the spaceship, shoot and destroy asteroids, and collect stars for points.**
* **Reach 6 points to progress to Level 2.**

### **4. Level 2 Scene:**

**Game Elements:**

* **Spaceship, Asteroids, Stars.**

**Objective:**

* **Continue navigating and shooting asteroids.**
* **Reach 11 points to win the game.**

### **5. Win Scene:**

* **Displays the player's final score.**
* **Options to return to the main menu or quit the game.**

## **Guide to Play:**

* **WASD keys to move the spaceship.**
* **Space key to shoot lasers.**

## **Lab Assignment:**

### **1. Create the Menu Scene:**

* **Design a simple main menu with Play and Instructions buttons.**

### **2. Create the Guide Scene:**

* **Implement a UI panel with game instructions and controls.**

### **3. Implement Player Controls:**

* **Allow the player to control the spaceship using WASD keys.**

### **4. Instantiate Asteroids and Stars:**

* **Populate the gameplay scene with randomly moving asteroids and stars.**

### **5. Implement Shooting and Scoring:**

* **Define shooting mechanics to destroy asteroids.**
* **Implement scoring based on collected stars.**

### **6. Scene Transition:**

* **Implement a smooth transition between all scenes: menu, guide, Level 1, Level 2, and win scene.**

## **Grading Criteria:**

### **1. Functionality (50 points):**

* **Spaceship movement and shooting.**
* **Random movement of asteroids.**
* **Collision logic and scoring.**
* **Scene transitions.**

### **2. Creativity (20 points):**

* **Design of spaceship, asteroids, and stars.**
* **Overall aesthetic appeal.**

### **3. Documentation (30 points):**

* **Well-documented code.**
* **Clear explanations for each game element and scene.**

## **Team Members:**

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