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 multiple scenes to represent different space environments.

### Game Elements:

### 1. Spaceship (Player Object):

**Description**:

A 2D spaceship controlled by the player.

**Functionality**:

Movement in all directions using arrow keys.

Shooting lasers.

### 2. Asteroids:

**Description**:

2D asteroids floating in space.

**Functionality**:

Move randomly in the scene.

Collisions with asteroids deduct points.

### 3. Stars:

**Description**:

2D stars scattered in space.

**Functionality**:

Collecting stars adds points.

### Game Flow:

### 1. Main Menu Scene:

**Play Button**: Transitions to the Gameplay Scene.

**Instructions Button**: Displays a UI panel with game instructions.

### 2. Gameplay Scene:

**Game Elements**:

Spaceship, Asteroids, Stars.

**Objective**:

Navigate the spaceship, avoid asteroids, and collect stars for points.

Game ends if the spaceship collides with an asteroid.

**UI Elements**:

Score display.

### 3. End Game Scene:

Displays the player's score.

Options to return to the main menu or quit the game.

### Lab Assignment:

Create the Main Menu Scene:

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

Implement Player Controls:

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

Instantiate Asteroids and Stars:

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

Implement Collisions and Scoring:

* Define collision logic between the spaceship, asteroids, and stars.
* Implement scoring based on collected stars.

Scene Transition:

* Implement a smooth transition between the main menu, gameplay, and end game scenes.

### Grading Criteria:

Functionality (50 points):

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

Scene transitions.

* Creativity (20 points):
* Design of spaceship, asteroids, and stars.
* Overall aesthetic appeal.

Documentation (30 points):

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