| **Department of Computer and Software Engineering – ITU** |
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| **MD442: Mobile Application and Development** |

| **Course Instructor: Usama Bin Shakeel** | **Dated: 25/04/2025** |
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| **Teaching Assistant: Hateem Hassan & Hammad Kamran** | **Semester: Spring 2025** |
| **Session: 2021-2025** | **Batch: BSCE2021& BSEE2021** |

# **Assignment 5. Roll a Ball Game**

| **Name** | **Roll number** | **Obtained Marks/35** |
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Checked on: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Submission:**

• Email instructor and team, if there are any questions. Plagiarism will be dealt with according to the course policy.

Instructor’s email: [ubs@itu.edu.pk](mailto:ubs@itu.edu.pk)

Teaching Assistant’s: [bsce20029@itu.edu.pk](mailto:bsce20029@itu.edu.pk), [bsce20039@itu.edu.pk](mailto:bsce20039@itu.edu.pk), bsee20063@itu.edu.pk

**• Submission after due time will not be accepted.**

# **Roll-a-Ball Game**

## **Objective**

This lab will focus on completing the Solar System simulation started in the previous lab.

## **Tasks Overview:**

**Task 1: GamePlay Scene**

**Collectibles:**

l Move Ball using velocity.

l Place 12 small cubes around the map.

l When touched, they should disappear (OnTriggerEnter).

l Add a tag to them like "Pickup".

l Animate Pickups

l Move the ball using Joystick.

**Task 2: Popups**

l Show a counter of items collected.

l Display a "You Win!" message when all are collected.

l Add "Restart Level" and "Back to Menu" buttons on win screen.

l Add Pause Scene

l Save and display the best collectable using PlayerPrefs.

**Task 3: Build**

l Make Build on Android

**Task 4: Complete Game**

l Add background music to both scenes.

l Add jump functionality.

l Add power-ups (speed boost, jump boost, etc.)

l Add a timer to track completion time.’

l Add Enemies

**Assessment Rubric for Assignment**

| **Performance metric** | **CLO** | **Able to complete the task over 80% (4-5)** | **Able to complete the task 50-80% (2-3)** | **Able to complete the task below 50% (0-1)** | **Marks** |
| --- | --- | --- | --- | --- | --- |
| 1. Realization of experiment | 3 | Executes without errors excellent user prompts, good use of symbols, spacing in output. The testing has been completed. | Executes without errors, user prompts are understandable, minimum use of symbols or spacing in output. Some testing has been completed. | Does not execute due to syntax errors, runtime errors, user prompts are misleading or non- existent. No testing has been completed. |  |
| 1. Conducting experiment | 2 | Able to make changes and answer all questions. | Partially able to make changes and few incorrect answers. | Unable to make changes and answer all questions. |  |
| 1. Computer use | 4 | Document submission timely. | Document submission late. | Document submission not done. |  |
| 1. Teamwork | 4 | Actively engages and cooperates with other group member(s) in an effective manner. | Cooperates with other group member(s) in a reasonable manner but conduct can be improved. | Distracts or discourages other group members from conducting the experiment |  |
| 1. Laboratory safety and disciplinary rules | 2 | Code comments are added and do help the reader to understand the code. | Code comments are added and do not help the reader to understand the code. | Code comments are not added. |  |
| 1. Data collection | 2 | Excellent use of white space, creatively organized work, excellent use of variables and constants, correct identifiers for constants, No line-wrap. | Includes name, and assignment, white space makes the program fairly easy to read. Title, organized work, good use of variables. | Poor use of white space (indentation, blank lines) making code hard to read, disorganized and messy. |  |
| 1. Data analysis | 3 | Solution is efficient, easy to understand, and maintain. | A logical solution that is easy to follow but it is not the most efficient. | A difficult and inefficient solution. |  |
| **Total (out of 35):** | | | | |  |