ASSESSMENT

UCOL
Te Pae Mātauranga ki te Ao
Universal College of Learning

D303 – MOBILE DEVELOPMENT
PRACTICE TEST

DUE DATE

August 25th, 2025 (week 6)

FACULTY

Humanities and Business

DUE TIME

13:00AM – 15:00PM

SCHOOL

Business and ICT

WEIGHTING

0%

PROGRAMME

Bachelor of Information and Communications Technology (Applied)

SUBMISSION METHOD

Complete All Tasks and Submit your work via Moodle.

LEARNING OUTCOMES ASSESSED

1. Design and construct application for a mobile device
2. Apply current software technologies, framework architecture and standards used in mobile application development

CONDITIONS

Individual Assessment

LECTURER

Amardeep Singh

MODERATOR

1. AIM OF THE ASSESSMENT

In this assessment, you need to design and develop an Android App using Android Studio and Java programming language to fulfil the learning outcomes of this course.

2. ASSIGNMENT OVERVIEW

This assessment will consist of a series of tasks to be completed by student in a limited time in class. It is to be completed using the Android Studio, Java language and various techniques learnt in the course using the description given below.

- Time and Date: August 25th, 2025 from 13:00am to 15:00
- Total Marks: 50

3. DELIVERABLES

You will create an Android App Project in Android Studio. You will ZIP the Android project folder and submit it via Moodle.

4. SUBMISSION

You will find a Moodle submission link on Moodle to submit your ZIPED Solution. You have to submit your work by the due date and time mentioned above. Please name your ZIP file according to the following format:

YourStudent_ID_Full_Name.zip

In case, you cannot do it in time. Please contact your lecturer to explain your.

5. TASKS

App Scenario

You are required to design a .NET MAUI App that keeps track of the scores in a Dice Game. Scoring rulesin this dice game is as follows: Each player will have its turn to roll the dice turn by turn. A player will bedeclared winner if he is the one who got 20 or more points first.

You need to design and build a .NET MAUI App that implements the above scoring rules for a Dice game.The APP contains two pages (ContentPages) as explained below:

1. **MainPage**:This page receives the Player names from the App user and starts the game. Starting thegame navigates to a GamePage and passes the player names using navigation parameters. The gamecannot start if the player(s) name(s) is (are) missing. In this case, a proper message should be shown tothe user to enter the player names (using DisplayAlert). Your MainPage should look alike the Figure 1.
2. **GamePage**: In this page, you need to implement all the scoring rules that have been mentioned abovefor scoring a dice game. In this page, you will show each player in a Frame or Border with his nameon top, followed by his current score (In the beginning, it must show "0"). Player's name and score arefollowed by a Button with text "Roll Dice". Player 1's "Roll Dice" button must be enabled and Player2's "Roll Dice" button must be disabled to mark Player 1 will take the turn to roll a dice. When player1 has rolled the dice, then its button must be disabled and Player 2's button must be enabled. Thus, onevery turn for each player, its "Roll Dice" button must be disabled while the other must be enabled forthe next roll dice turn. On each turn, your app will generate a random number between 1 and 6 andshow this dice number in an Image just below the two players' sections as shown in Figure 2. A set ofImage Resources for dices with different numbers is available in Moodle for download. Thus, on eachturn, first you will generate a random number between 1 and 6, change the dice image according to thenumber. Add this number to the player's score and update the score in the GUI. Finally, check if theplayer has won the game or not. In case a player has won the game: you will show a DisplayAlertmessage who has won the game, e.g. "Alice has won the game!". Secondly, you will disable both "RollDice" buttons for both players as game has finished. Below the dice image, you will display a RESETSCORE Button that will reset the scores of the two players to restart the game. The whole UI is shownin Figure 2.

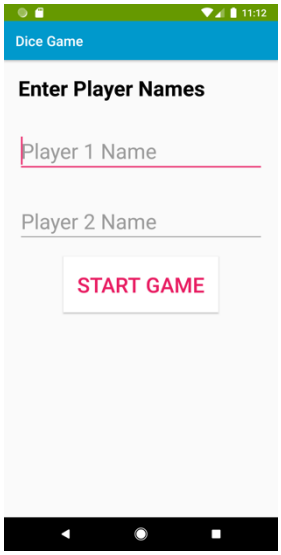

Figure 1

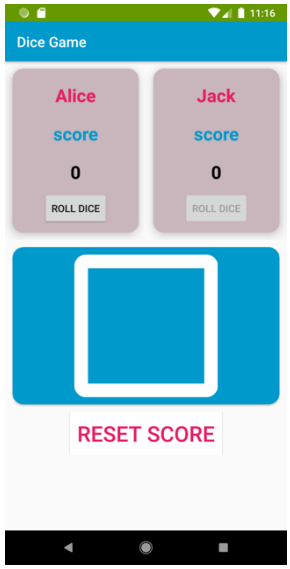

Figure 2

Once a player has won the game, your app should show an appropriate message to the user "<Player Name> has won the game!" and your app will disable the both "**ROLL DICE**" buttons for both player, unless and until the user has hit the **RESET** button.

For implementation of this app, you need to employ principles of human perception and cognition for you App Design. You also need to identify the use cases for this app and incorporate them into your implementation. You also need to identify the UI components and views that you will use in this mobile app and set their attributes to design the given layout.

You are free to use a different colour scheme than the colour scheme showed in the Figure 1 and Figure 2.

MARKS DISTRIBUTION and MARKING CRITERIA:

Activity/Task	Details & Marking Criteria	Individual Marks	Total Marks
MainPage UI Design	Title Text	1 mark	5 marks
	Player 1 Name Input	1.5 mark	
	Player 2 Name Input	1.5 mark	
	Game Start Button	1 mark	
GamePage UI Design	Card for Player 1	1.5 mark	12 marks
	Player 1 Name	1 mark	
	Player 1 Score	1 mark	
	Player 1 Button	1 mark	
	Card for Player 1	1.5 mark	
	Player 1 Name	1 mark	
	Player 1 Score	1 mark	
	Player 1 Button	1 mark	
	Reset Button	1 mark	
	Card for Dice Image	1 mark	
	ImageView for Dice	1 mark	
MainActivity Code	Coding		10 marks
	User Inputs	3 marks	
	Intent	4 marks	
	Error Message	3 marks	
GameActivity Code	Handling		19 marks
	Generating random number	2 marks	
	Players names from Intent	2 marks	
	Player 1 scores	3 marks	
	Player 1 disabling button	2 marks	
	Player 2 scores	3 marks	
	Player 2 disabling button	2 marks	
	Reset Button	3 marks	
	Disabling buttons	1 mark	
	Winning message	1 mark	
Coding Standard & user experience	Coding standard	2 marks	4 marks
	User experience	2 marks	
		Total Marks	**50 marks**