### Midterm COMP 3074

## **Multiplication Table [Times table] Application (Using Activities or Fragments)**

Duration: 60 minutes

#### Instructions:

You are required to create an Android application that generates and displays multiplication tables.

You may implement your solution using either:

- Two Activities, or
- Two Fragments (within a single Activity)

The functionality and behavior must match the description below.

### Part 1 – Multiplication Table Screen

- 1. The first screen (Activity or Fragment) must contain:
  - An **EditText** for entering a number
  - A Button to generate the table
  - A ListView to display the multiplication results
- 2. When the user enters a number and clicks the button:
  - o Display the **multiplication table (1 to 10)** for that number in the ListView (Example: for  $7 \rightarrow 7 \times 1 = 7$ ,  $7 \times 2 = 14$ , ...,  $7 \times 10 = 70$ )
- 3. When an item in the ListView is clicked:
  - Show a confirmation dialog (AlertDialog.Builder) asking if the user wants to delete that row.
  - If the user confirms:
    - Delete the selected item from the list.
    - Show a **Toast message** (e.g., "Deleted: 7 × 3 = 21").
- 4. Provide a **button or menu option** labeled "**History**" to move to the next screen (Activity or Fragment).
  - You may pass data using an Intent, a shared ViewModel, or any other proper method.

#### Part 2 - History Screen

- 1. The second screen (Activity or Fragment) should display a **ListView** of all numbers for which multiplication tables have been generated.
  - o eq., if the user generated tables for 3, 5, and 8, this list should show [3, 5, 8].
- 2. When returning to the first screen, the previously generated tables should still be available (you may use static lists, a shared ViewModel, or saved instance state).

#### **Bonus Features (Optional for Extra Marks)**

- Add a "Clear All" option in a menu to delete all items from the current list (after showing a confirmation dialog).
- Display a **Toast message** confirming that all rows were cleared.
- Implement smooth navigation with BottomNavigationView (for Fragment version) or Intents (for Activity version).

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## Concepts Assessed

- **UI components:** EditText, Button, ListView
- **Data display:** ArrayAdapter and dynamic list updates
- User interactions: Click events, dialogs, and Toasts
- **Navigation:** Activities (Intents) or Fragments (navigation)
- Data management: Passing or retaining state between screens

# Marking Breakdown

Component	Description	Marks
Layout (EditText, Button, ListView)	Functional and well-organized	3
Multiplication logic	Generates correct table dynamically	2
Item click with dialog	Functional confirmation and deletion	2
Toast feedback	Correct and user-friendly	1
Navigation between screens	Working Activities or Fragments	2
Bonus: Clear All / History	Optional extra credit	1

#### **Submission Instruction:**

- Your project name should be as follows: Midterm\_yourFirstName\_yourLastName
- You should host your work on GitHub and Provide your GitHub repository link in your submission.
- You should have minimum 5 commits for your project.

### Layout example for the first screen:

This is just an example of the first screen layout. Feel free to implement your own style.

