

Name and Surname: _____

Student ITS No: _____

Qualification: _____ Year of Study: _____ Semester: _____

Assignment due date: _____ Date submitted: _____

QUESTION	EXAMINER MARKS	MODERATOR MARKS	REMARKS

ASSIGNMENT INSTRUCTIONS

Please tick each box to confirm completion.

Use Times New Roman font, size 12, with 1.5 line spacing throughout the document.

Apply Harvard Referencing Style for all citations and references.

For essay-style assignments, please include the following sections:

Table of Contents

Introduction

Main Body (with relevant subheadings)

Conclusion

References

Submit the assignment in PDF format on Moodle.

Use the specified cover page provided.

Include a signed declaration of originality.

DECLARATION OF ORIGINALITY:

I hereby declare that this assignment is my own work and has not been copied from any other source except where due acknowledgment is made. I affirm that all sources used have been properly cited and that this submission complies with the institution's policies on academic integrity and plagiarism.

Student Signature: _____

Date: _____

Assignment Instructions

1. All assignment must be typed, not handwritten.
2. Every assignment should include the cover page, table of contents and a reference list or bibliography at the end of the document
3. A minimum of five current sources (references) should be used in all assignments and these should reflect in both in-text citations as well as the reference list or bibliography
4. In-text citations and a reference list or bibliography must be provided. Use the Harvard Style for both in-text citations and the reference list or bibliography
5. Assignments submitted without citations and accompanying reference lists will be penalized.
6. Students are not allowed to share assignments with fellow students. Any shared assignments will attract stiff penalties.
7. The use of, and copying of content from websites such as chegg.com, studocu.com, transtutors.com, sparknotes.com or any other assignment-assistance websites is strictly prohibited.

This also applies to Wiki sites, blogs and YouTube.
8. Any pictures and diagrams used in the Assignment should be properly labelled and referenced.
9. Correct formatting as indicated on the Cover Page should be followed (font-size 12, font-style Calibri, line spacing of 1.0 and margins justified).
10. All Assignments must be saved in PDF using the correct naming-convention before uploading on Moodle. E.g. StudentNumber_CourseCode_Assignment (402999999_WBT512A_Assignment).
11. **For each question in the assignment, paste the screenshot of the output. Below the screenshot, paste all the code for that particular question.**

Question One

(20 marks)

- 1.1 Describe the step-by-step process of creating a simple Android application from start to finish using Android Studio. Your answer should include the following: project setup, layout design, activity implementation, testing, and deployment. ***Provide well explained step-by-step and well referenced using Havard style intext reference***(10 Marks)
- 1.2 Explain the role of XML in Android application development. In your answer, discuss how XML is used for designing user interfaces, defining layouts, and configuring app resources. Provide examples of at least three different XML files commonly used in Android projects and describe their functions. ***Intext referencing is required***(10 Marks)

Question Two

(20 marks)

Create a simple contact management application with the following requirements:

The main activity should contain three `TextInputLayout` components wrapping `EditText` fields for contact name, phone number, and email, each implementing Material Design's floating label behavior and built-in error handling capabilities. Include a `ToggleButton` to switch between view and edit modes, dynamically enabling or disabling the `TextInputLayout` fields accordingly.

- Add a Save button that stores contact information using `SharedPreferences`, with comprehensive input validation that leverages `TextInputLayout`'s `setError()` method to display real-time validation feedback - ensuring the name field contains only alphabetic characters, the phone number follows valid numeric format with appropriate length, and the email field matches proper email patterns using regular expressions.
- The application should provide immediate visual feedback through `TextInputLayout` error states that clear automatically when users correct their input, along with `Toast` messages for successful saves and validation errors, creating a polished contact management solution demonstrating Material Design implementation, advanced `TextInputLayout` validation, data persistence, and effective user feedback mechanisms.

Question Three

(20 marks)

3. Create an app called RestaurantRaterApp that uses fragments to display and rate dishes at a restaurant. Your implementation must include the following:

1. MainActivity with Bottom Navigation View that switches between two fragments:
 - RestaurantFragment – Displays the restaurant name and address (hardcoded or passed through a Bundle).
 - DishRatingFragment – Allows the user to enter a dish name, select its type (entrée, dessert, etc.) using a Spinner, and rate it using a RatingBar.
2. Use FragmentManager and FragmentTransaction to switch between the fragments without reloading the whole activity.
3. The DishRatingFragment must include:
 - An EditText for the dish name.
 - A Spinner for dish type.
 - A RatingBar to capture the user's rating (1–5).
 - A Button to display the entered information as a Toast or in a TextView.
4. Pass data between fragments using a shared ViewModel or interface communication, ensuring that user interaction feels seamless.

Question Four

(40 marks)

Create a comprehensive business inventory management system that demonstrates advanced Android development skills. Your application should feature four main activities (Dashboard, Inventory, Sales, Reports) connected through either **a bottom navigation bar** or **navigation drawer** for seamless user experience. The system must include a professional splash screen, consistent UI theming, and custom branding throughout.

Requirements:

- Design and implement a robust SQLite database with Products table (ID, name, price, stock, category) and Sales table, supporting full CRUD operations for inventory management,

automated sales transaction recording with real-time stock updates, and intelligent low stock alert notifications.

- Develop professional UI components including RecyclerView with custom adapters for displaying product and sales data, comprehensive input forms with proper validation using EditText, Spinner, and DatePicker components, confirmation dialogs for critical operations, and progress indicators for enhanced user feedback.
- proper Android architecture with consistent navigation patterns, professional splash screen, and unified branding across all activities.
- Create analytical features that calculate sales totals, profit margins, and inventory valuations, generate comprehensive daily/weekly sales reports with basic data visualization, and include user preferences with CSV export functionality.

END OF ASSIGNMENT!!