UNIVERSITI MALAYA
UNIVERSITY OF MALAYA

PEPERIKSAAN IJAZAH SARJANA MUDA SAINS KOMPUTER
EXAMINATION FOR THE DEGREE OF BACHELOR OF COMPUTER SCIENCE

SESI AKADEMIK 2022/2023   : SEMESTER I
ACADEMIC SESSION 2022/2023   : SEMESTER I

WIA2007/WIX3004 :Pembangunan Aplikasi Mudah Alih
                  Mobile Application Development

Januari 2023   Masa : 2 jam
January 2023   *Time : 2 hours*

ARAHAN KEPADA CALON:
INSTRUCTIONS TO CANDIDATES:

(1)   Jawab semua soalan.
        Answer all questions.

(2)   Kertas soalan ini mengandungi 6 SOALAN (30 Markah).
        This question paper contains 6 QUESTIONS (30 Marks).

Kertas soalan ini mengandungi 6 soalan dalam **4** halaman yang dicetak)
*(This question paper consists of 6 questions on **4** printed pages)*

Online Test 2 (30 marks)

Week   : 13
Platform   : SpectrumExam (Question) and Google Form (Submission)
Instructions   :

1. This is an open-book individual test. You are required to complete the test by yourself. Discussion or sharing of answers in any form is strictly prohibited.

2. Please join the Microsoft Team and turn on the webcam throughout the test.

3. You are required to complete **ALL** the questions in **2 hours (4 pm to 6 pm)**. Another 30 minutes of the grace period for submission, all the answers have to be submitted latest at 6.30 pm.

4. Create a folder with your [StudentID]_[FullName]. Put all the answers (your project and word document, and/or draft/drawing) and make sure you put your student ID in all files and related java/kotlin and XML files (as a comment). Files without student ID **WILL NOT BE MARKED**.

5. If there are any questions regarding the current test, you may contact the lecturer via Microsoft Team immediately.

6. All the projects will be run through Turnitin for plagiarism checking. If similar answers are found, the involved students will be given zero marks immediately.

7. Zip your folder and submit it to the given Google Form link. Only a file in .zip format is accepted. If there is any technical error in the Google Form (of your respective occurrence) during the submission time, please contact the lecturer immediately.

8. Once you started the test, it indicates that you **HAD READ and AGREED** to the instructions listed above. Disciplinary action will be taken against the candidate who violates any of the instructions.

Please answer ALL the questions (30 marks).

You are required to develop a mobile application called **RethinkYourDrink** to allow adolescents (10-19 years old) in keeping track of their beverage drinking habits.

Adolescents in this stage prefer to drink different types of sweetened beverages such as Milk Tea, Soda drinks, etc., rather than drinking plain water. A study has shown that excessively sweetened beverages can cause depressive symptoms and aggressive behaviors, aside from the problem of obesity and its related health conditions in adolescents.

Hence, **RethinkYourDrink** mobile application can help adolescents to monitor their beverage intake. Their beverages are recorded and divided according to the following three categories:
  i.   Plain water,
  ii.   Other Beverages (Non-sweetened), and
  iii. Other Beverages (Sweetened).

The mobile application only needs to store the beverage drinking habits for 3 days. Following are the activities required in the mobile application and their descriptions:

Table 1: Function and description for each activity for **RethinkYourDrink**.

Activity	Function and description
Main Java file: MainActivity.java XML file: activity_main.xml	▪ This is the launcher activity. ▪ Navigation to the other activities. ▪ Display a summary of the total amount of water (total of all three categories) taken today.
Record Drink Java file: RecordActivity.java XML file: activity_record.xml	▪ User will use this activity to record their daily beverages every time they consumed their beverage. ▪ The user needs to enter the current day (Day 1, Day 2, or Day 3), the beverage category, and the amount (in milliliters (ml)) of their drink. ▪ For other beverages, the name of the beverages such as Coke, Black Coffee, etc., should be entered for recording purposes. ▪ All these data should be stored in local storage.

Summary
Java file: SummaryActivity.java
XML file: activity_summary.xml
	▪ User will see the summary of their drinking habits in this activity.
	▪ The activity will display the:
	  ▪ The total amount of water (total of all three categories) taken daily for 3 days.
	  ▪ The total amount of water for each category was taken daily for 3 days.
	  ▪ The detail list shows all data entered by the user for 3 days.

Based on the descriptions and information given in Table 1, complete the following tasks:

1. The target user for this mobile application is adolescents. By using any **THREE (3)** accessibility guidelines (e.g., Writing, Layout, and Typography, etc.), suggest **ONE (1)** design idea for each guideline to create an accessible design for this mobile application.

(3 marks)

2. Adolescents usually lack of patience and motivation to keep track of their own drinking habits.

   (a) Create the user interface (UI) draft for each activity mentioned in Table 1 that is suitable for adolescents.

(4.5 marks)

   (b) Then, explain how each UI can encourage this target user group to use your mobile application.

(1.5 marks)

   Note: Your UI draft can be in the form of pen-paper or using any online/offline prototyping tool. But the colors used should be clearly indicated/specified in the UI draft.

3. Prepare a simple navigation chart for this mobile application.

(1 mark)

4. Choose **ONE (1)** UI draft from Q2, identify the ViewGroup you will use to implement its frontend, and explain the reason why you selected the ViewGroup.

(1 mark)

5. Implement the frontend (user interface in XML file) of each activity.

(6 marks)

6. Complete the mobile application by implementing the backend codes of each activity / fragment.

(13 marks)

TAMAT
END