KOLEJ UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF COMPUTING AND INFORMATION TECHNOLOGY

ACADEMIC YEAR 2021/2022

DECEMBER EXAMINATION

AACS3353 MOBILE APPLICATION DEVELOPMENT

TUESDAY, 21 DECEMBER 2021 TIME: 2.00 PM – 5.00 PM (3 HOURS)

DIPLOMA IN INFORMATION SYSTEMS

Instructions to Candidates:

Answer **ALL** questions in the requested format or template provided.

- This is a final online assessment. You MUST answer the assessment questions on your own without any assistance from other persons or resources
- You must contact the lecturer immediately should there be any disruption to the video conferencing during the final online assessment.
- It is your responsibility to ensure all pages of the answer script are submitted. You will not be notified for any missing pages or incorrect submission of answer script.
- You must submit your answers within the following time frame allowed for this online assessment:
  - The deadline for the submission of your answers is **half an hour** from the end time of this online assessment.
- Penalty **WILL BE IMPOSED** on students who submit their answers late as follows:
  - The final marks of this online assessment will be reduced by 10 marks for answer scripts that are submitted within 30 minutes after the deadline for the submission of answers for this online assessment.
  - The final marks of this online assessment will be downgraded to zero (0) mark for any answer scripts that are submitted after one hour from the end time of this online assessment.
- Extenuation Mitigating Circumstance (EMC) encountered, if any, must be submitted to the Faculty/Branch/Centre within 48 hours after the date of this online assessment. All EMC applications must be supported with valid reasons and evidence. The UC EMC Guidelines apply.

FOCS Additional Instructions to Candidates:

- Include your **FULL NAME**, **STUDENT ID,** and **PROGRAMME OF STUDY** in your submission of the answer.
- Read all the questions carefully and understand what you are being asked to answer.
- Marks are awarded for your own (original) analysis. Therefore, use the time and information to build well-constructed answers.

STUDENT'S DECLARATION OF ORIGINALITY

By submitting this online assessment, I declare that this submitted work is free from all forms of plagiarism and is my own properly derived work. I understand that I have to bear the consequences if I fail to do so.

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Question 1

EasySend is one of the logistic companies that offers international express, overland transport, and air freight. EasySend offers a full range of customized solutions from express document shipping to supply chain management. EasySendApp is a smartphone app created by the company, allowing users to create accounts and register delivery requests. Upon receiving requests on the app by the customer, EasySend company will send the driver to pick up the goods at the requested place. Customers may track their packages using the app at any time. For delivering purposes, the driver must log in to the EasySendApp to use the app. Then, the driver must scan the QR code on the parcel to update the delivery status. Besides providing the service for delivering, the company also sells different types of boxes and envelopes. Customers may view the sample sizes of boxes and envelopes via images and videos that are available in the app, but it takes a long time for the information to load, and the user interface repeats a certain layout. EasySendApp has a mobile customer service centre that allows the customer to interact with the company assistant via live voice or video chat.

Answer the following questions based on the above-mentioned scenario.

a) Suggest and discuss **ONE (1)** data saving method that could be utilised by EasySend to perform each of the following tasks:

(i) To store customer information (5 marks)

(ii) To store driver username and password (5 marks)

(iii) To store boxes and envelopes sample images and videos (5 marks)

b) Identify and explain **TWO (2)** hardware sensors or components that could be used by EasySendApp. (10 marks)

[Total: 25 marks]

Question 2

a) Discuss how the company can improve the layout performance of the EasySendApp in terms of *optimizing the layout, re-using layouts with tag and loading views on demand*. (15 marks)

b) Among *Global Positioning System (GPS) and Wireless Network*, which is the best method for EasySendApp to deploy location-based services for the parcel delivery function? Justify your answer. (5 marks)

c) What monetization model for EasySendApp do you think is the best? Justify your answer. (5 marks)

[Total: 25 marks]

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Question 3

a) Before customers can use the app, they need to key in their details such as name, gender, date of birth, contact number, address, email, and password using a Create Account function. Suggest and justify an input component that is most appropriate for any **THREE (3)** input fields in the Create Account function. (15 marks)

b) What is a *manifest file* in Android? Give the reason why the manifest file is important to every Android app. (5 marks)

c) Briefly explain what are *Services* in Android. Give an example on when do we need to use Services in a mobile application. (5 marks)

[Total: 25 marks]

Question 4

a) Among *snackbar, notification, and dialog*, in your opinion, which of the components is suitable for the scenario given? Define the suggested component and justify why it is suitable for each of the scenarios.

(i) Receiving a new voice message from the company assistant (5 marks)

(ii) Cancel a delivery request (5 marks)

(iii) Deleting an item from the shopping cart (5 marks)

b) Between *explicit and implicit intents*, which one is suitable for each of the following tasks? Explain each of the intents and justify why the intent is suitable for the following task.

(i) The user would like to compose a new voice message to be sent to the company assistant. (5 marks)

(ii) The user would like to view a sales receipt in PDF format. (5 marks)

[Total: 25 marks]