

Mobile Application Development (MAD)
CCIT4059, 2025-2026 Semester 2
Assignment 2 Question Paper
(Total Mark of WA2: 50)

- Questions related to program codes are based on Java for Android platform, unless specified.
- Finish this work, based on concepts and techniques learnt on our course.
- Students should finish reviewing the related course notes and materials before doing this assignment.
- **Zero mark will be given for late submission and no other means of submission.**
- Individual work: FINISH THIS WORK ALONE. Students cannot work with others.
- Plagiarism / Collusion / Shared work with others is not allowed. (Zero mark will be given, with possible disciplinary action).
- Follow the given instructions and guidelines (especially the question with adding SID in the answer, if not, mark penalty will be given).

Section A: (10 marks): ONLINE (SOUL-Quiz Feature)

Multiple Choice (MC)

- **Finish Section A Online (SOUL-Quiz Feature) as required.**
- Identify and select the option of choice that "best" completes the statement, matches the item, or answers the question.
- **Number of Attempts Allowed: 1**
- **Grading method: Highest Grade**
- **Make sure you have *successfully* completed, "Finished" and submitted before the deadline.**
- *** Attempts must be submitted before time expires, or they are NOT counted. (Zero mark given)**
- Questions related to program codes are based on Java programming language, unless specified.
- **15 Multiple-choice questions.** Each question carries the same mark.

Section B: Short and Long Questions (40 marks)

General guidelines for answering Section B: (Refer to the Question Paper)

- Read and follow the guidelines for answering all the questions.
- Answer all the questions on the space provided in the Answer Sheets **(Writing (by pen or stylus))**.
- **Submit the completed answer sheets both hardcopy and softcopy in PDF format on SOUL.**
- Ensure all the answers on the answer sheets provided have no typo mistakes with clear and concise manners and no misalignment.
- Mark penalties will be given if a student's name and student ID are missing in the answer sheets.
- 0 Mark will be given if Plagiarism is identified (may pass to the Guidance Committee for penalty).
- No email submissions or by other means will be accepted (0 mark).
- 0 Mark will be given for late submission on SOUL (student needs to reserve 30 – 50 earlier to submit the answer sheets on SOUL).
- Students have the responsibility to double check the validity of the file during submission and the submission status when the file has been submitted on SOUL.

1. (8 Marks)

A mobile app designer creates a customized AView class for user interface. This newly customized view class is supposed to show specific AI data. A valid class GView is given and shown in the following figure of code segment which can show integer data in a specific way. (8 marks)

```
public class GView{ // A general view show one data
    int [] vData; // view data field
    public GView() { //... details
    }
    public void show(){ //... show/view the data
    }
}
```

Write the AView class in Java for the project, which:

- i. inherits from the given class GView
- ii. Has one constructor:
 - The constructor has one input parameter of array of int named dAr:
 - The constructor body simply update the data with the parameter by calling its own method with the parameter accordingly.
- iii. Has one method update(), which accepts one parameter named dAr of int array type but no return:
 - The method simply assigns the input parameter to the field and then shows the data by calling the proper method.

** Ignore the import statements, and the implementation details of the given class GView.*

2. (16 Marks)

a) A 15-inch monitor with an aspect ratio of 4:3 has monitor resolution of 800 x 600.

- i) Calculate the width of the monitor (3 marks)
- ii) Calculate the pixel density on the monitor (3 marks)

b) Name and describe two different types of image transparency. (4 marks)

c) During the implementation stage, the client has given the team their AI (Artificial Intelligent) model, including the valid `InspectAI` Java class below, for detecting counterfeit components in a smart factory. Suppose the components to be detected could be represented with an array of integers.

(Remark: Ignore the implementation details of this given class `InspectAI`.)

Line	Program codes
1.	<code>Package com.factory.smart.aipack;</code>
2.	<code>public class InspectAI inherits BaseAI { // Client's given class</code>
3.	<code>int[] aiRefData; // reference component data</code>
4.	<code>public void InspectAI() { // ... implementation details HERE</code>
5.	<code>}</code>
6.	<code>public InspectAI(int[] refData) // ... details</code>
7.	<code>}</code>
8.	<code>public boolean isCounterfeit(int[] checkData) {//... method body</code>
9.	<code>}</code>
10.	<code>}</code>

i) Identify FOUR syntax errors (indicate the line number) and correct them according to the original intentions written in the comments. (Write the line number and the corrected codes) (4 marks)

ii) How many constructors does the given class have? (1 mark)

iii) What is the return type of the method above? (1 mark)

3. (16 Marks)

You are preparing a simple workshop poster of an Android Application Development event that will be shown on a phone screen and printed on a paper. The screen preview uses RGB colour model. The printing vendor requests CMYK model for paper printing. Two screen colours are specified below.

Screen previous colour A:	(255, 255, 0)
Screen previous colour B:	(0, 255, 255)

- a) For each screen previous colour of A and B with the given RGB values (0-255) above, which two colour light channels (full names) from RGB model should be combined to produce a resulting colour for A and B? Describe the colour formation process and identify the resulting colour of A and B. (6 marks)
- b) For colour printing, you will mix CMY inks.
1. Which two colour inks (full names) from CMY model should be mixed to produce an estimated green colour area? Describe the subtractive method for obtaining green colour. (4 marks)
 2. Which two colour inks (full names) from CMY model should be mixed to produce an estimated blue colour area? Describe the subtractive method for obtaining blue colour. (4 marks)
- c) Explain why black (K) colour is added into CMY model for printing, and what issue occurs if black is made using only C+M+Y. (2 marks)

- End of Written Assignment 2 -