SCHOOL OF COMPUTING

COMP2750/COMP6750 – Applications Modelling and Development

2025

ASSIGNMENT THREE (25%)

Application Development
Multiple submission dates

Table of Contents

Overview of Assignment-3

This assignment focuses on the development and testing aspects of a mobile application.

Task Descriptions

Task 1: Application Development Demo and Viva (15 marks) (Group Task)

You will be developing a prototype application for the Sigma Dog Care System (SDCS), based on the concept initiated by Finn Bentley at Macquarie University. Your team has explored this system through earlier assessments, and this final task brings it together in the form of a functional demo. The prototype should represent a simplified version of the SDCS, focusing on usability and logic implementation.

Your application must include the following core features:

1. **Welcome Heading:**
   Display the title "Sigma Dog Care System (SDCS)" prominently at the top of the screen.

2. **Logo or Image:**
   Include an image (e.g., of a dog, pet care, or the SDC logo) placed directly below the heading to reflect the purpose of the system.

3. **Dog+Cost dropdown**:
   In the first dropdown, provide at least five (5) dog names with the hourly rate (5). They should contain values like this:
   'Finn-$15'
   'Bluey-$18'
   At least two (2) of the dogs should have the same hourly rate (you can make this up).

   For simplicity reasons, we will assume the price to be a double-digit value without any decimal point.

4. **Service + Cost dropdown**:
   In the second dropdown, provide at least five (5) services. They should contain values like this:
   'Grooming-$20'
   'Walking -$10'
   At least two (2) of the services, should have the same cost (you can make this up).

   For simplicity reasons, we will assume the price to be a double-digit value without any decimal point.

5. **Choose Hours/Quantity dropdowns**:
   For each of the chosen item (name/service), there is a corresponding hours/quantity. These dropdowns will have numbers between 1 and 5.

6. **Calculate** button:
   Once the values are selected, when the calculate button is clicked, it should display the total price in a label below with a label:

Total Cost: $ Total Price

7. 'App developed by names of the group members' as label at the bottom of the app.

A partial visualisation of how the dropdowns would look like is below

An empty layout of the app is provided in the assignment folder. **You are not allowed to add any extra screens**. However, if you want to add extra details on the screen, that is acceptable. You must change the **look and feel of the app**. The application should work **without crashing and must display the right output**. Please remember you must also **_handle non-selections_**. E.g., The total price should not have a NaN error when calculating the total cost. In other words, in the image provided above, if you click on calculate, it should display $0.

This task is due for submission on Sunday (25/05/2025 at 11.55 pm).

The Viva will take place in the Week 12 workshops. All group members must attend the workshop in week 12. During this demonstration, you will be asked questions based on the code to test each group's understanding of the system. If you are not present for the discussion component, you will be awarded zero marks for the entire assignment.

Task 2: Exploring the Mobile Application development (35 marks) (Individual Task)

1. (5 marks) How would you explain to the client the difference between native app development vs cross-platform development with emerging frameworks in use today? Give an example of what that explanation might look like (~400 words). You will be marked on how easy it is for a non-technical person to understand the explanation. Please see the rubric below for details.

2. (5 marks) You have a programmer pair working on code when you find your peer has used a piece of proprietary code but not provided any credit to your coding. When you ask them to add the credit, they say it is not that important, and asks you not to fuss about it. You take this to

your development lead who also chooses to downplay it. You have been waiting for a week to receive a response. Using the ACS code of ethics principles covered in lectures, outline what principles in the code are relevant to your decision about what you intend to do next?

    a. Identify relevant points in the code of professional ethics (ACS)
    b. What choices / options for action do you have (if any)?
    c. What do the relevant ACS codes guide you to do, to prioritise this scenario?
    d. What would you do based on the above 3 points?

3. (10 marks) A thorough testing document must be created with two possibilities of testing the app you created as a group. Choose any two of the following:

    (a) Dog + Hours of care selected, Service + Quantity not selected;
    (b) Service + Quantity selected, Dog + Hours of care not selected;
    (c) Both Dog + Hours of care / Service + Quantity not selected.

Note: We have not included the basic testcase - which covers the ideal testcase of both dropdowns being selected to calculate the total cost, as this would be a standard use case test.

4. (15 marks) What are the tables you would have for the app to store the following data?
   - Dog, their details, including the prices.
   - Services, their details, including the prices.
   - Dog Owners, their details, and their request history.
   - Dog Carers, their details, and their applications history.
   - Dog Services offered by carers when their application has been accepted.

You must draw a schema diagram to answer this question. Include table names, column names (no need to specify data types), primary and foreign keys in your answer.

You must use references and citations if using any external references (APA style) as part of this report.

This task is due for submission on Sunday (08/06/2025 at 11.55 pm). Please submit your answers as a pdf document. Rename your file to your full name E.g., Anakin_Skywalker.pdf

Marking Criteria

Task 1 (out of 15)	
Existence of elements (out of 4)	
Welcome heading?	/0.5
Image?	/0.5
4 dropdowns?	/1
Calculate button?	/1
Text to display the total?	/0.5
App developed by message	/0.5
Total	**/4**
Functionality (out of 11)	
All dropdowns filled with correct elements?	/2
Correct programming logic? (Calculation of total cost)	/5
Total cost of the order displayed correctly	/2
Effort in changing the look and feel of app	/2
Total	**/11**
Task 2 (out of 35) [Individual]	
Background and Ethics (out of 10)	
Explanation of native vs. cross app development	/5
Ethical Dilemma Consideration – related to ACS ethics, reasoning is sound	/5
Total	**/10**
Test Cases (out of 10)	
Tests detailed well?	/5
Shows results (pass/fail)	/1
Includes expected results	/1
Clearly documented with set up, steps?	/2
Choice explanation	/1
Total	**/10**
Tables (out of 15)	
Tables and Columns, Overall Schema provides a good overview of the data	/10
Are primary keys and foreign keys specified?	/5
Total	**/15**
Assignment submitted after deadline? (5% penalty per day)	