This assignment evaluates students on:

CLO2 / LO2

i.   Build mobile applications with mobile technology, principles, design techniques, and development tools. (CLO2)
ii. Practical skills (LO2)

INSTRUCTIONS:

Students are required to build an Android application based on the given task:

Develop a mobile application for estimating monthly electricity bills.

The inputs for the application are as follows:

i.   Month (Jan ~ Dec)
ii. The number of electricity unit used (kWh)
iii. Rebate percentage (0% – 5%)

The outputs for the application are as follows:

i.   Total charges
ii. Final cost after rebate

The final cost for each month must be stored in local database and displayed in a list view format.

The electricity units are charged based on the block used. Refer to the table for the rate.

Block	Charges (sen/kWh)
For the first 200 kWh (1 - 200 kWh) per month	21.8
For the next 100 kWh (201 - 300 kWh) per month	33.4
For the next 300 kWh (301 - 600 kWh) per month	51.6
For the next 300 kWh (601 - *900* kWh) per month onwards	54.6

Please refer to the sample calculations for the expected output

Sample calculations:

Unit used (kwh)	Blocks	Charges	Total Charges
150	1 block of 150kwh	150 * 0.218 = 32	**RM 32**
250	1 block of 200 = 200 1 block of next 100 == 50	200 * 0.218 = 43.6 50 * 0.334 = 16.7	**RM 60.3**
467	1 block of 200 = 200 1 block of next 100 = 100 1 block of next 300 (467 – 200 – 100) = 167	200 *0.218 = 43.6 100 * 0.334 = 33.4 167 * 0.516 = 86.172	**RM 163.172**
551	1 block of 200 = 200 1 block of next 100 = 100 1 block of next 300 = (551 – 200 – 100) = 251	200 *0.218 = 43.6 100 * 0.334 = 33.4 251 * 0.516 = 129.516	**RM 206.516**
115	First 200 block = 115	115 * 0.218 = 25.07	**RM 25.07**

The final cost should be deducted by rebate percentage, for example :

Final cost = Total charges - (total charges * rebate %)

 = RM32 – (32 * 0.05)

= RM 30.40

REQUIREMENTS:

- The application must have customization in colors, application name in title bar, and unique icons using suitable layout.
- The application must handle user input and output properly based on good design practice such as using suitable input type, display error message, helpful notice, and instructions.
- The calculation final result must be stored in local/offline database and display the data in a List View based on month (display month and final cost only) . The list must be clickable to open new page to view detail information (month, unit, total charges, rebate, and final cost)
- The application also must include the about page which lists student's information (fullname, student id, course code and name, copyright statement and include a clickable URL of the application website – you can use your application Github page as website URL.
- The final application must be signed, and the project source code must be uploaded to GitHub (Generate signed apk and Push project from Android Studio to GitHub).
- Students are required to record a demonstration video of the application and upload the video on their individual YouTube Channel.

SUBMISSON

Deadline: Week 10

Platform: MS Teams Assignment

EVALUATION

Rubrics for marks:

1. Input and Output (6 marks)
2. Database (6 marks)
3. Layout (themes, title bar, icons) (6 marks)
4. About Page with details and clickable URL (6 marks)
5. Good Design Practice (Error message, helpful notice, and instructions) (6 marks)

Bil	0	2-3	4-5	6
Input Output	No Input or no output	1 input 1 output	2 input with all text fields, 2 output not formatted	All inputs, with at least one input in radio button, 2 output formatted appropriately
Database	No data stored in database	All input and output stored in database, cannot display on list view.	All input and output stored in database, able to display in List View only, and cannot view detail.	All input and output stored in database, able to display in List View, and can view detail in new page.
Layout	No Customization	Changed either Colour, icon or title bar	Changed at least two criteria	Changed themes, title bar and icons
About Page	No About Page	About page with no details	About Page with details no clickable URL	About Page with details clickable URL
Good Design Practice	No Error Messages, Notice or Instruction	Either error messages, notice or instructions	Either two of the criteria	All criteria present