

ASSIGNMENT 2
PROGRAMMING TECHNIQUE 1 (SECJ1013)
SEM 1 (2024/2025)

INSTRUCTIONS TO THE STUDENTS

- This assignment can be done in pairs (a group consisting of 2 members only) or individually.
- Your program must follow the input and output as required in the text and shown in the examples. You must test the programs with (but not limited to) all the input given in the examples.
- Any form of plagiarism is **NOT ALLOWED**. Students who copied other students' programs will get **ZERO** marks (both parties, students who copied, and students that share their work).
- Please insert your **name and partner's name, matrix number, and date** as a comment in your program.

SUBMISSION PROCEDURE

- Only one submission per pair (group) that includes one file is required for the submission which is the source code (the file with the extension .cpp).
- Submit the assignment via the UTM's e-learning system.

Based on the problem given below, write a complete C++ program. You need to develop a Loan Calculator to estimate a monthly installment and to help you to plan your finances. The example of program output is shown in **Figure 1**. **Note:** The values in **bold** are input by the user. **Figure 2** and **Figure 3** show the example of Proton and Perodua loan calculator applications as a guide to develop your own loan calculator. Choose either **one** as reference to write the C++ program.

```
Proton Car Loan Calculator

Model [1-X50, 2-Exora, 3-Persona]: 3
Variants [1-1.6L Standard CVT, 2-1.6L Premium CVT]: 2
Region [1-Peninsular Malaysia, 2-East Malaysia]: 1

Car Info
Model: Persona
Variant: 1.6L Premium CVT
Region: Peninsular Malaysia
Paint Type: Metallic
Price (MYR): 54600.00

Down Payment (MYR): 5460
Interest Rate (%): 3.5
Repayment period (in years): 9

MONTHLY INSTALLMENT (MYR): 598.33

Do you want to enter other data? [Y @ N]: n

Thank you :)
```

Figure 1: The example of inputs and outputs

SO YOU'VE GOT YOUR EYES SET ON A PROTON

Use our loan calculator to help plan your finances in owning a Proton Car.

Vehicle*

X50

Variants*

1.5T Standard

Paint Type*

Solid

Region*

Peninsular Malaysia

Terms (In-Years)*

5 years

Down Payment*

8,630

Interest Rate (%)¹

3.5

Insurance Premium*

0.0

Monthly Installment

1,521.04

PROTON X50



Monthly installment

1,521.04

BOOK NOW

KNOW MORE

Figure 2: Proton loan calculator application
(Source: <https://www.proton.com/en/purchase/loan-calculator>)

LOAN CALCULATOR

(OTR Price Without Insurance)

1. Select Your Ride

Select Car Model

Ativa

Aruz

Bezza

Axia

Alza

Myvi

Select Car Variant

Myvi 1.5L AV (A.S.A. 2.0) (Auto) ▼

Select Location

Peninsular Malaysia ▼

2. Loan Details

OTR Price

RM52,697

Deposit Amount

RM5,270

Figure 3: Perodua loan calculator application
(Source: <https://www.perodua.com.my/loan-calculator.html>)

Please take note that in your program, you **MUST** apply:

- Branching/ selection (if..else)
- Loop/ repetition (repeat..until/ do..while)
- User-defined function. Besides the **main** function, your program needs to define at least **ONE** more other functions. Use appropriate arguments for the function.