Practical Test – Functions

Description

Write a program in C/C++ that computes monthly payment on a loan. The program prompts the user to enter the *loan amount*, *annual interest rate* and *number of monthly payments* to be made. It also computes the *total payment* and *total interest*. The program is to prompt the use for the input as shown below. (Bold numbers are typical responses.)

```
Loan amount: $15000
Annual interest rate (in the format 0.03 (for 3%): 0.03
Number of monthly payments : 36
```

The output is shown below. Be aware to align the decimal points.

```
 - - Report - -

Loan Amount                   : $ 15000.00
Annual Interest Rate          : 3.00%
Number of Payments            : 36
Total Interest                : $  1350.00
Total Payment                 : $ 16350.00
Monthly Payment               : $   454.17
```

The program's design should use `main` (*20 marks*) and at least the FOUR(4) functions described below:

a. <u>Function 1</u>: Read *loan amount*, *annual interest rate* and *number of monthly payments* from the keyboard. This function is to use addresses/references to read all data and place them in the calling function's variables. (*15 marks*)

b. Compute values. This section consists of two sub-functions. Each function will return the respective value.
   - <u>Function 2</u>: Compute *total interest amount* with *loan amount*, *annual interest rate* and *number of monthly payments*. (*15 marks*)
   - <u>Function 3</u>: Compute *monthly payment* with *loan amount*, *total interest amount* and *number of monthly payments*. (*15 marks*)

c. <u>Function 4</u>: Print the report. (*25 marks*)

Note that *10 marks* are reserved for the presentation of the program, such as indent style, comments, and choice of variable and function names.

Submission

This is a practical assessment. You are allowed to refer to reference books and notes. However, **NO** *discussion* and **NO** *online access* (except WBLE) allowed during the practical session.

This practical assessment will be 2 hours. You have another 20 minutes to prepare your program and upload it to WBLE. There is a link created in WBLE subject page for you to submit source code of your program. The source code should have your name (e.g. **Tan Ah Kow.cpp**) and your name should also be included in the comments at the start of the source code file. You are required to upload the soft copy of your program by the deadline. Late submission will not be entertained.

In addition, prepare a report (preferable using word processing software) that contains print out of your program and sample output(s). Submit the report to your tutor on **Week 9** during your practical session. Do remember to attach marking sheet as the cover page of your report.

The total mark of this practical assessment is 100. The 100 marks will contribute 10% of your final mark. Your program will be marked for **correctness**, **programming style**, **adequate testing** and

documentation/comments. It's your responsibility to understand the requirements of the task and prepare well for your submission. No mark will be given if the report is not received and marks will be deducted for late submissions.