Hacettepe University
Department of Electrical and Electronics Engineering
ELE122 - Computers And Programming Laboratory

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Experiment 4

Q1) Write a function called letter grade that has a type int input parameter called points and returns through an output parameters gradepLetter and gradepNumber. The appropriate letter grade matching is given in the table below. Return through a second output parameter (just_missedp) an indication of whether the student just missed the next higher grade (true for 89, 79, 64 and so on).

Prototype: `void letter_grade(int points, char *gradepLetter, char *gradepNumber, char *just_missedp);`

Points	Grade		Points	Grade
95-100	A1		65-69	C1
90-94	A2		60-64	C2
85-89	A3		55-59	C3
80-84	B1		50-54	D
75-79	B2		49-0	F3
70-74	B3			

Example results:

```
Please enter the points for grading: 94
Letter grade is : A2
Student missed the next grade with a single point? Y
--------------------------------
```

```
Please enter the points for grading: 80
Letter grade is : B1
Student missed the next grade with a single point? N
--------------------------------
```

Q2) Write a program to model a simple calculator. Each data line should consist of the next operation to be performed from the list below and the right operand. Assume the left operand is the accumulator value (initial value of 0). You need a function `scan_data` with two output parameters that returns the operator and right operand scanned from a data line. You need a function `do_next_op` that performs the required operation. `do_next_op` has two input parameters (the operator and operand) and one input/output parameter (the accumulator).

The valid operators are:

```
+ add
- subtract
* multiply
/ divide
^ power (raise left operand to power of right operand)
q quit
```

Your calculator should display the accumulator value after each operation. A sample run follows.

```
+ 5.0
result so far is 5.0
^ 2
result so far is 25.0
/ 2.0
result so far is 12.5
q 0
final result is 12.5
```