Introduction to PL/SQL

- PL/SQL is procedural language for SQL like C, Java, C#, Python etc.
- In PL/SQL code, we normallly use 2 distinct blocks:
    - Declare: Here we define variables, parameters etc
    - Begin END: In this bblock we write normal procedural code.
- To write PL/SQL code, we have to use any text-editor such as notepad/notepad++.
- The extension for any PL/SQL file must be .sql. e.g., myprog.sql.
- Normally we are supposed to save the files usnder Orcle folder. However, if we can not save it in the oracle folder, then we can save it anywhere, but e have to remember the path where the PL/SQl file has been saved.
- To execute any PL/SQL code, we go this way:

```
# Suppose the file is saved in th plsql folder under the D-drive, and
the file name is myprog.sql.
SQL> d:/plsql_folder/myprog.sql
```

- Before we start to execute PL/SQL code, we have to execute the folowing lines:

```
set serveroutput on;
set verify off;
set feedback off;
```

- Some arithmatic operations in PL/SQL:
    1. Addition: `+`,
    2. Substraction: `-`,
    3. Multiply: `*`,
    4. Division: `/` (exact division, i.e., 5/2 = 2.5);
    5. Exponent: `**`,
    6. Mod(x,y): `mod` , will return x modulo y.

- Some comparison operators:

    1. Equal: `=`,
    2. Greater than: `>`,
    3. Less than: `<`,
    4. Greater than or equal to: `>=`,
    5. Less than or equal to: `<=`,
    6. Not equal: `!=, ~=, <>`.

- Logical operators:

    1. `and`,
    2. `or`,
    3. `not`,
    4. `nor`
    5. `xor`.

- To display output on screen:

```
dbms_output.put_line(var1 || var2 || var3)
```

- Every statement must be terminated by semicolon.

Prob1: Write a program in PL/SQL to input 2 numbers a, b. Calculate and print: (i) $a+b$, (ii) $a-b$, (iii) $a*b$, (iv) a/b.

Prob2: Write a program in PL/SQL to input values of $'c'$ and then calculate $'f'$ from $\frac{c}{5} = \frac{f-32}{9}$. Print c,f.

Prob3. Calculate f from $\frac{c}{5} = \frac{f-32}{9}$ for $c = 10, 20, 30, 40, 50, 60, 70, 80, 90, 100$.

Prob4. Input $'n'(1 \sim 10)$. Calculate and print $S = (1) + (1+2+3) + \ldots + (1+2+\ldots+n)$. Use for loop.

Syntax for loop:

```
FOR i in range 1...n
LOOP
END LOOP
```