IAP LAB 5

BY

ENG. JOUD KHATTAB

2 INPUT STATEMENT

- Syntax:
  - cin >> variableName ;
- Job:
  - Read from screen (from user) value to **store** and **process**.
  - After input statement always come **variable** name to store the given value.

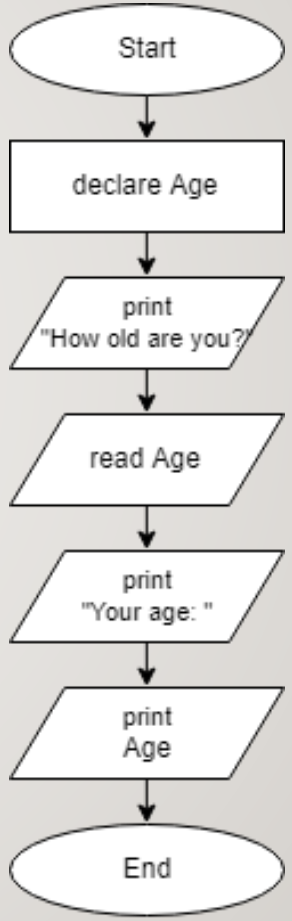
3 NUMERIC DATA TYPES (VARIABLES)

- Variables are containers needed to hold the data in algorithm.
- Numeric Data types:
  - int: to store discrete values.
  - double: to store continues values.
  - float: to store continues values.
- Declare variable syntax: (Declaration Statement)
  - int variableName ;
  - Ex:
    - int x ;
    - double x ;

EXERCISES

EXERCISE 1
OUTPUT AND INPUT EXERCISE

- Problem:
  - Write program (algorithm) that asks the user to enter his age then the program should prints the user age.
- Flowchart:



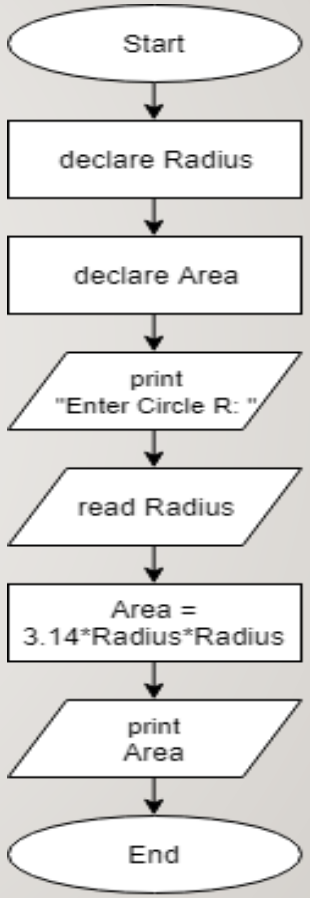
6 EXERCISE 1
OUTPUT AND INPUT EXERCISE

- Solution:

```
#include <iostream>
Using namespace std;
int main()
{
        int Age;
        cout << "How old are you?" ;
        cin >> Age ;
        cout << "Your age:" << Age << endl ;
}
```

EXERCISE 2
CIRCLE EXERCISE

- Problem:
  - Write a program (algorithm) to calculate the area of a circle. The Radius of the circle is entered by the user.
- Flowchart:



8 EXERCISE 2
CIRCLE EXERCISE

- Solution:

```
#include <iostream>
Using namespace std;
int main()
{
        double Radius ;
        double Area ;
        cout << "Enter Radius:" ;
        cin >> Radius ;
        Area = 3.14 * Radius * Radius ;
        cout << "Area: " << Area << endl ;
}
```

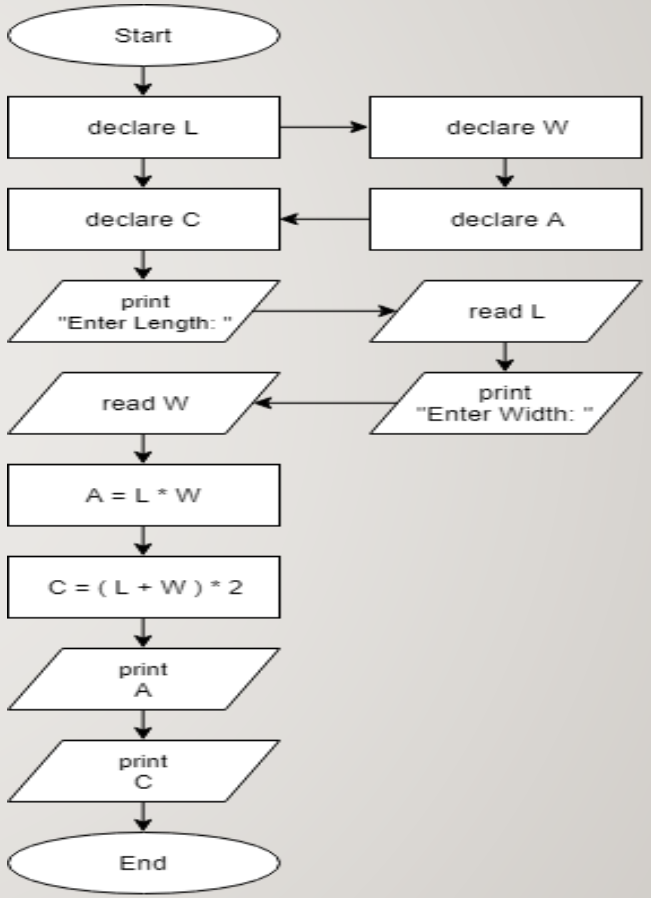
EXERCISE 2
CIRCLE EXERCISE (V2)

- Solution:

```
#include <iostream>
Using namespace std;
int main()
{
        double Radius, Area ;
        cout << "Enter Radius: " ;
        cin >> Radius ;
        Area = 3.14 * Radius * Radius ;
        cout << "Area: " << Area << endl ;
}
```

EXERCISE 3
RECTANGLE EXERCISE

- Problem:
  - Write a program (algorithm) that asks the user to enter the length and the width of rectangle The program should calculate and print the area and the circumference of the rectangle
- Flowchart:



11 EXERCISE 3
RECTANGLE EXERCISE

- Solution:

```
#include <iostream>
Using namespace std;
int main()
{
        double L ,W ,  A , C ;
        cout << "Enter Length:" ;
        cin >> L ;
        cout << "Enter Width:" ;
        cin >> W ;
        A = L * W ;
        C = ( L + W ) * 2 ;
        cout << "Area:" << A << endl ;
        cout << "Circumference:" << C << endl ;
}
```

12 HOMEWORK

- Problem:
  - Write a program that works as a simple calculator, that means it talk two number as a inputs and outputs their sum, subtract, multiplication, division, and the square root for each on of them.