“ASSIGNMENT NO 2”

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Class Section: A

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Computer Fundamentals

Department of Computer Systems Engineering

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Q1): Write a C++ code, pseudocode and draw flowchart for program to find the factorial of an integer entered by the user using for loop and display the factorial.

C++ code:-

```
#include <iostream>
using namespace std;
main(){
Int number, factorial, initial=1;
cout<<”enter integer  ”;
cin>>number<<endl;
for (int i=1; i<=number; i++){
initial=i*initial;
}
cout<<”factorial of the number is ”<<initial;
return 0;
}
```

PSUEDOCODE:-

Set an integer as factorial is equal to 1

Prompt the user to enter an integer as num

Read num

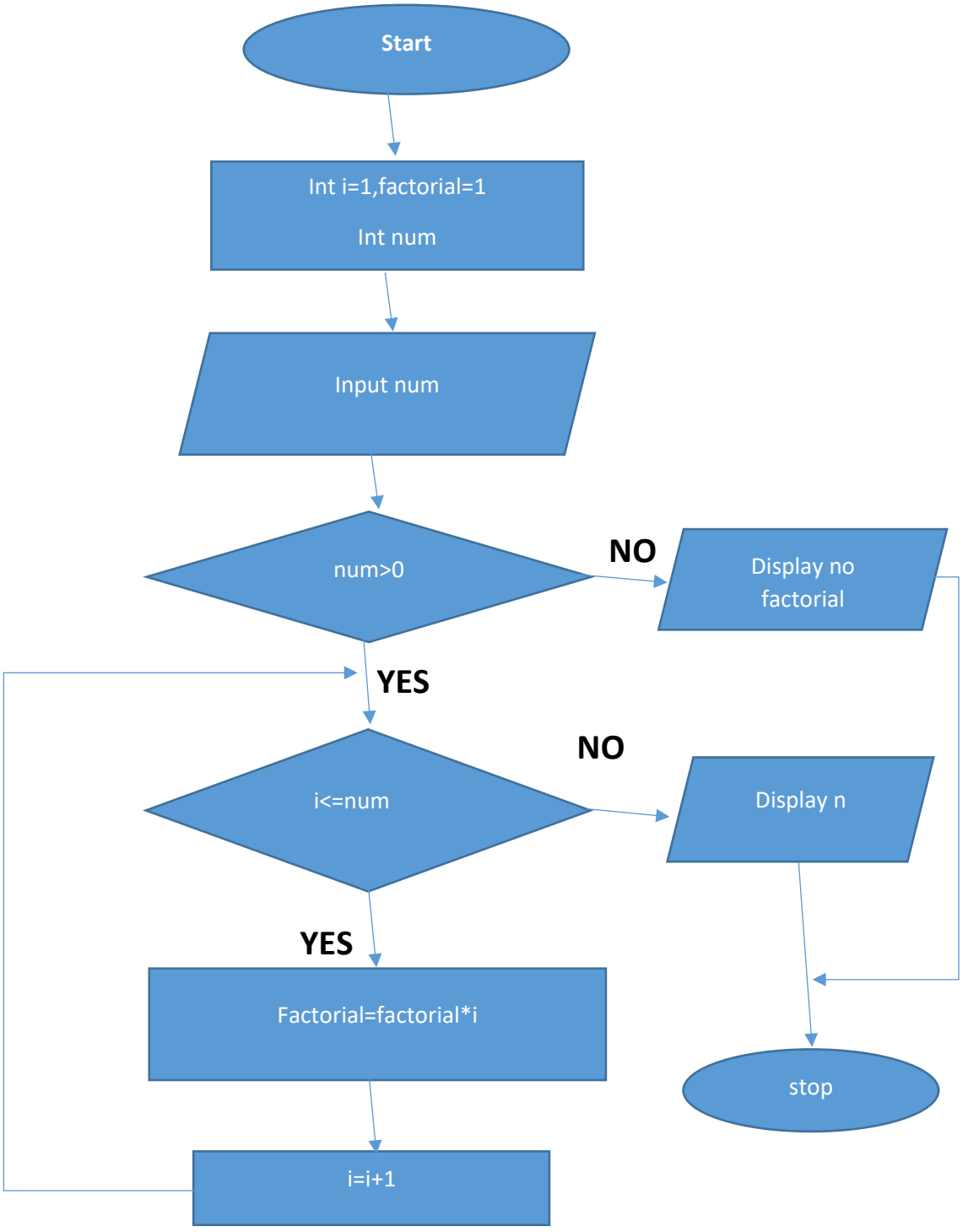
FOR integer i is equal 1 to num

Multiply i with 1 is equal to factorial

End FOR

Display factorial

FLOWCHART:-


Start
Int i=1,factorial=1
Int num
Input num
num>0
NO
Display no factorial
YES
i<=num
NO
Display n
YES
Factorial=factorial*i
stop
i=i+1

Q2): Write a C++ code, pseudocode and draw flowchart for program that asks the user to enter a series of integers. When the number entered is 0, the while loop terminates.

C++ CODE:-

```
#include <iostream>
using namespace std;
main(){
int num;
cout<<"enter integer ";
cin>>num;

while ( num!=0)
   {
      cout<<"enter integer ";
cin>>num;
}
}
```

PSUEDOCODE:-

SET integer int as num

WHILE int is not equal to 0

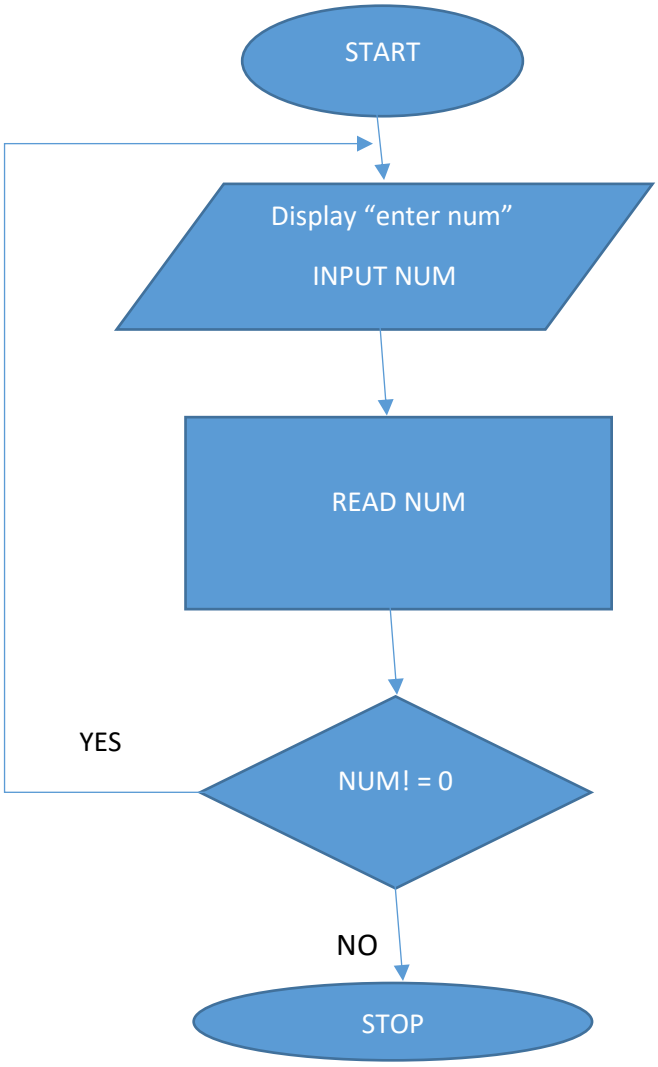
DISPLAY “enter an integer”

Prompt the user to enter int

Read int

END While

FLOWCHART:-



Q3): Write a C++ code, pseudocode and draw flow chart for a program where the user input is monthly salary. The program has to determine the salary after tax deduction and display it on the screen. The tax for salary above 100,000 should be 10% of the salary. The tax for salary above 50,000 up to 100,000 should be 8% of the salary. Whereas the tax percentage for salary less than or equal to 50,000 should be 5%.

C++ CODE:-

```
#include <iostream>
using namespace std;
main(){
int salary;
cout<<"enter salary";
cin>>salary;
If (salary>100,000){
cout<<"salary after tax deduction is "<<salary*0.1<<endl;
}
else if(100,000>salary>50,000){
cout<<"salary after tax deduction is "<<salary*0.08<<endl;
}
else if(salary<50,000){
cout<<"salary after tax deduction is "<<salary*0.05<<endl;
}
return 0;
}
```

PSUEDOCODE:-

Prompt the user to enter integer as salary

IF salary is greater than 100,000

salary is equal to salary multiply by 0.1

ELSE IF salary is less than 100,000 and greater than 50,000

salary is equal to salary multiply by 0.08

ELSE IF salary is less than 50,000

salary is equal to salary multiply by 0.05

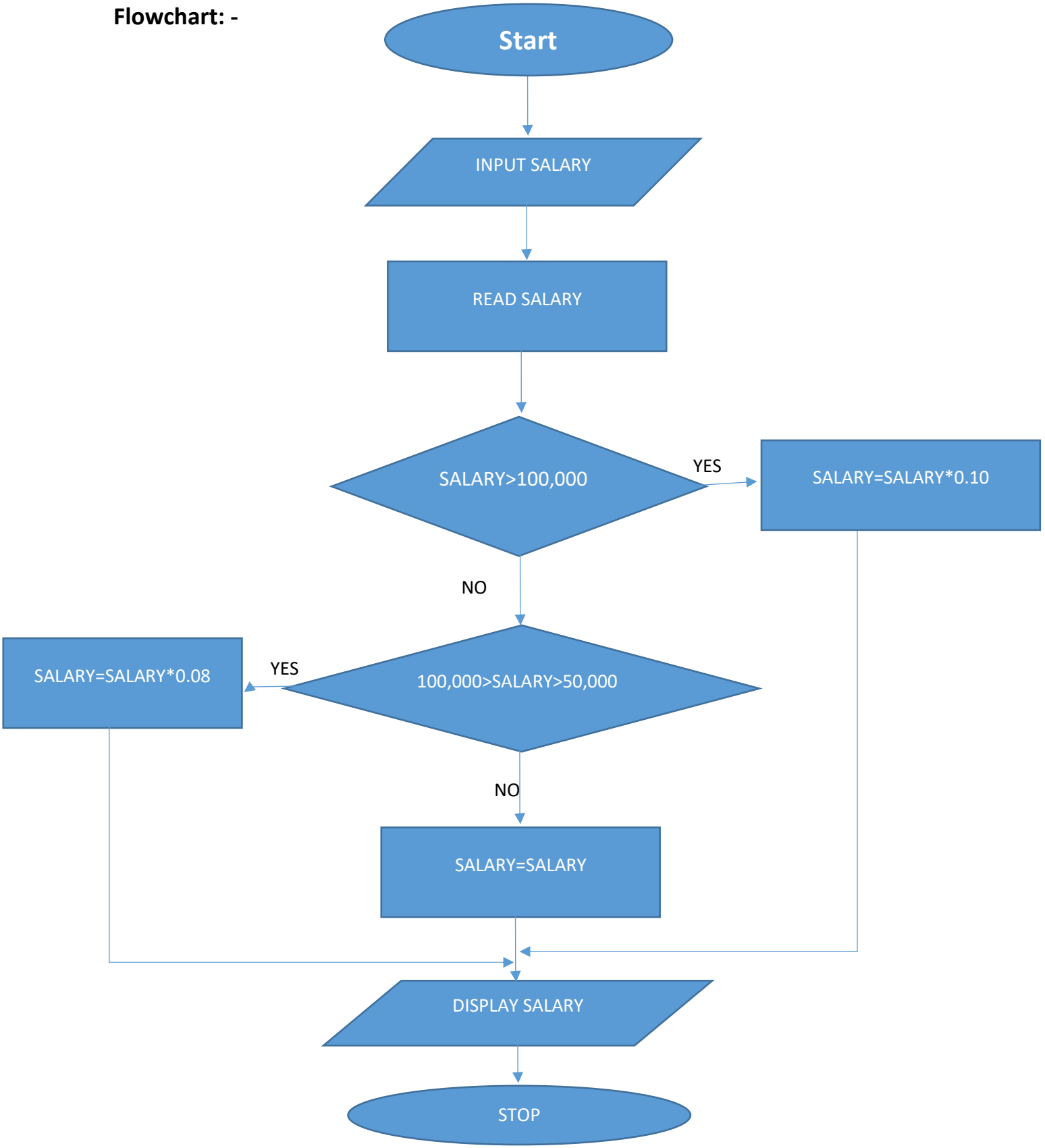
END IF

END IF

END IF

DISPLAY salary

Flowchart: -


Start
INPUT SALARY
READ SALARY
SALARY>100,000
YES
SALARY=SALARY*0.10
NO
SALARY=SALARY*0.08
YES
100,000>SALARY>50,000
NO
SALARY=SALARY
DISPLAY SALARY
STOP

➢ **Also perform the following additional tasks by creating two new flowcharts as well as pseudocodes.**

 Display “Rich” if salary is above 100,000, “Average” if salary is above 50,000 up to 100,000, “Poor” if salary is less than or equal to 50,000.

Pseudocodes:-

Prompt the user to enter integer as salary

IF salary is greater than 100,000

salary is equal to salary multiply by 0.1

DISPLAY RICH

ELSE IF salary is less than 100,000 and greater than 50,000

salary is equal to salary multiply by 0.08

DISPLAY AVERAGE

ELSE IF salary is less than 50,000

salary is equal to salary multiply by 0.05

DISPLAY POOR

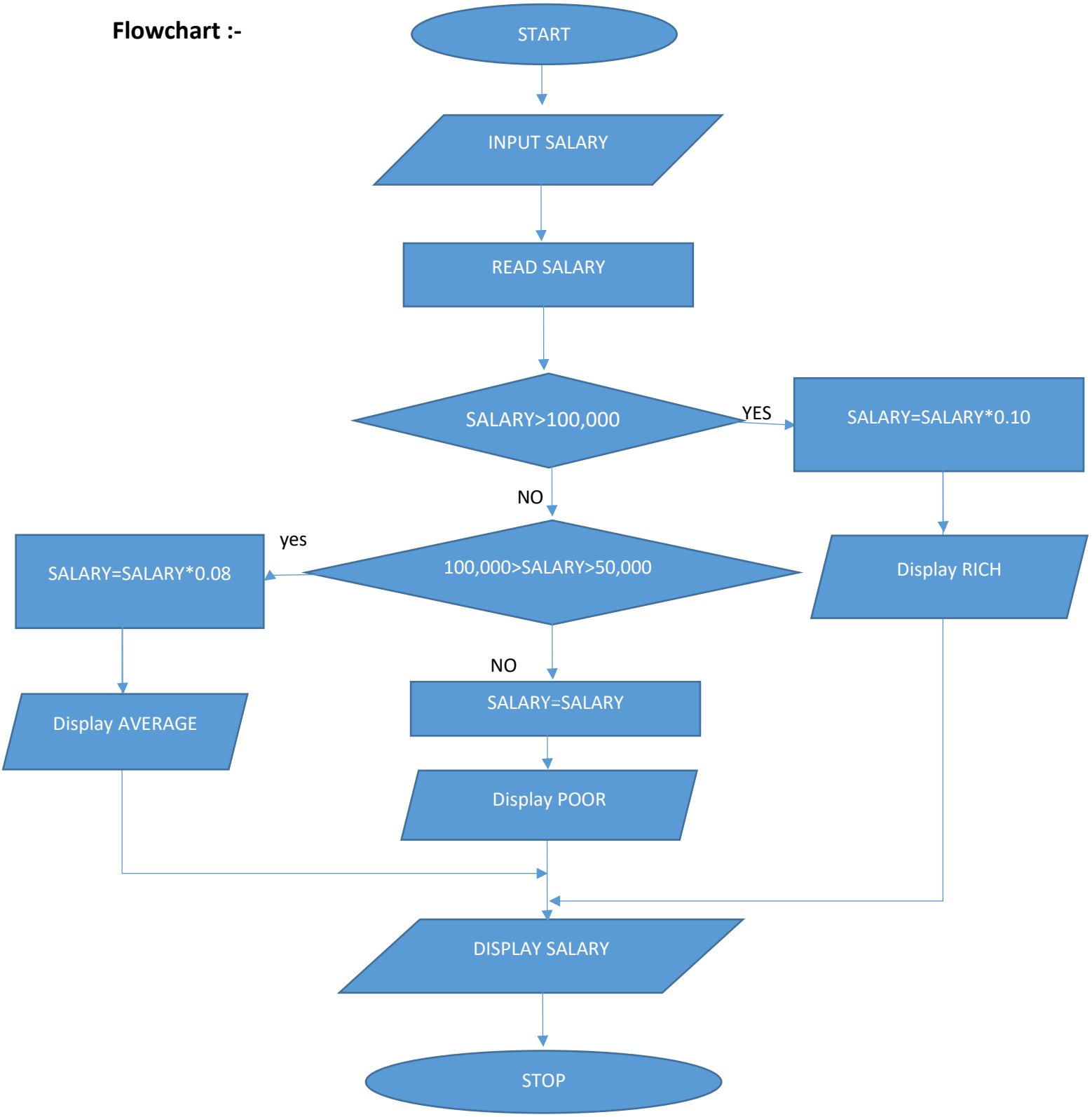
END IF

END IF

END IF

DISPLAY salary

Flowchart :-


START
INPUT SALARY
READ SALARY
SALARY>100,000
YES
SALARY=SALARY*0.10
NO
Display RICH
yes
100,000>SALARY>50,000
SALARY=SALARY*0.08
NO
Display AVERAGE
SALARY=SALARY
Display POOR
DISPLAY SALARY
STOP

Display “Rich” if salary after tax deduction is above 100,000, “Average” if salary after tax deduction is above 50,000 up to 100,000, “Poor” if salary after tax deduction is less than or equal to 50,000

Pseudocodes:-

Set integers as salary and income

Prompt the user to enter integer as salary

IF salary is greater than 100,000

Income is equal to salary multiply by 0.1

If Income is greater than 100,000

DISPLAY Rich

ELSE

DISPLAY Average

END ELSE

END IF

ELSE IF salary is less than 100,000 and greater than 50,000

salary is equal to salary multiply by 0.08

If Income is greater than 50,000

DISPLAY Average

ELSE

DISPLAY Poor

END ELSE

END IF

ELSE IF salary is less than 50,000

Income is equal to salary multiply by 0.05

DISPLAY Poor

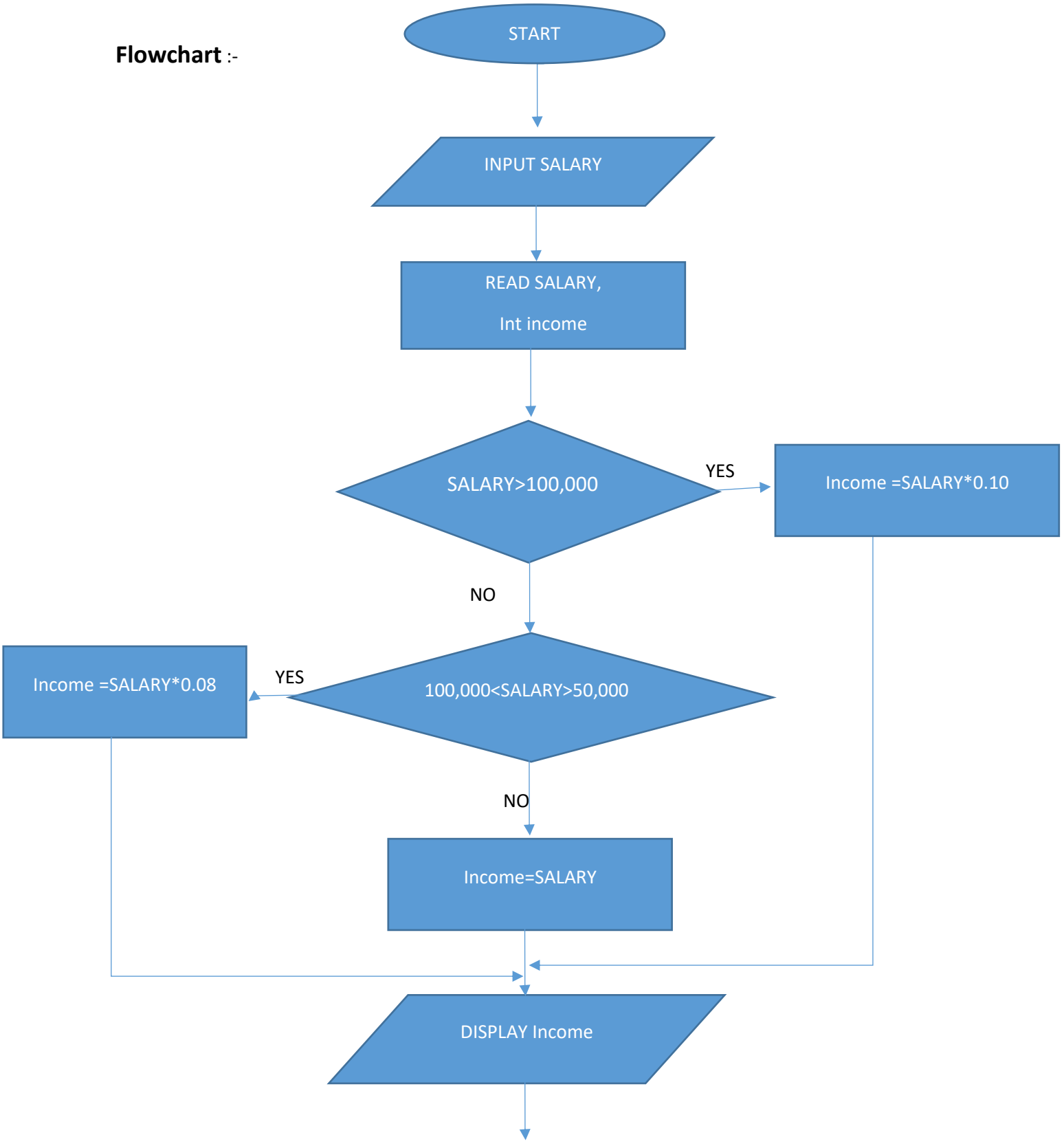
END IF

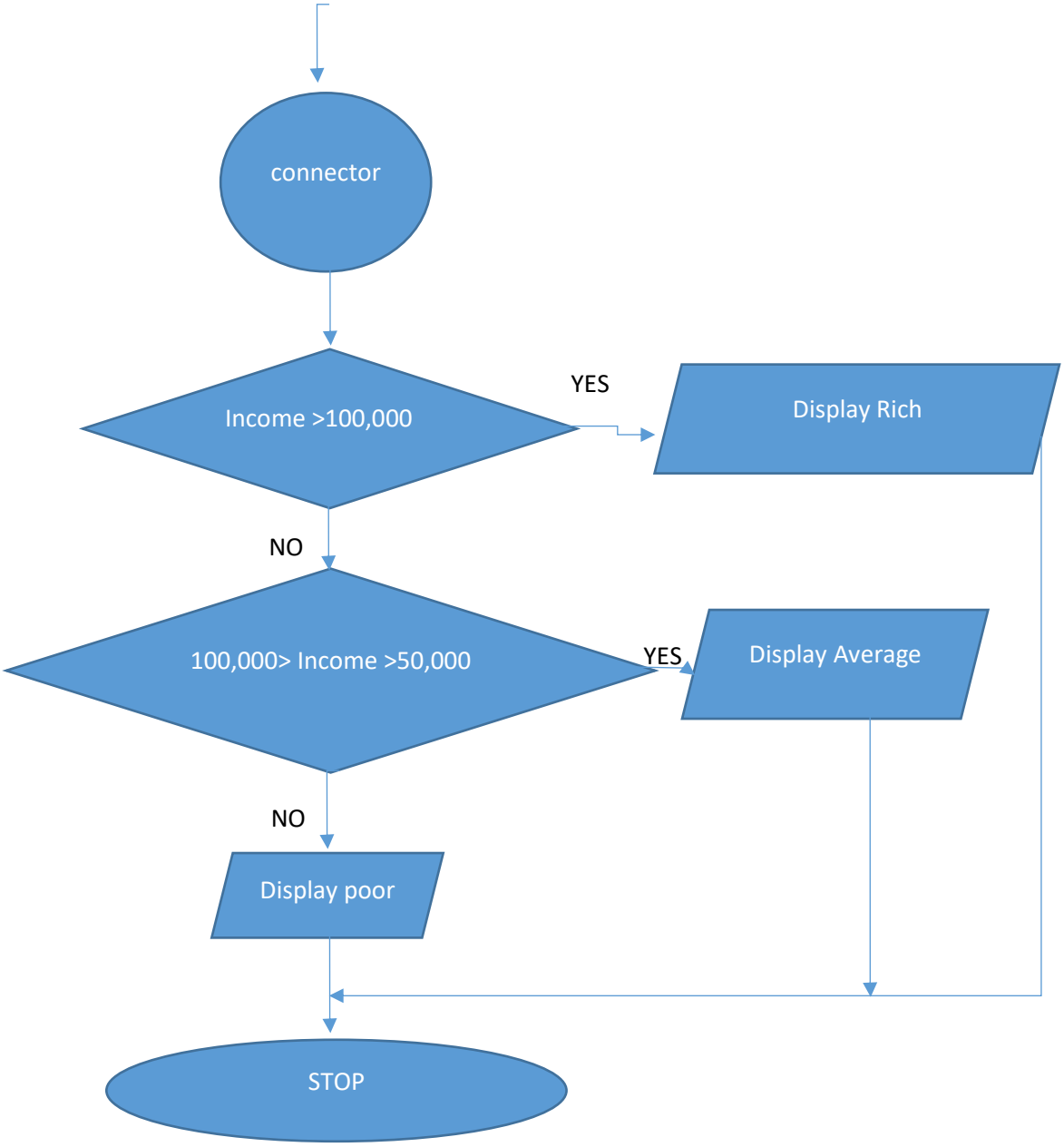
END IF

END IF

DISPLAY salary

Flowchart :-


START
INPUT SALARY
READ SALARY,
Int income
SALARY>100,000
YES
Income =SALARY*0.10
NO
Income =SALARY*0.08
YES
100,000<SALARY>50,000
NO
Income=SALARY
DISPLAY Income


connector
Income >100,000
YES
Display Rich
NO
100,000> Income >50,000
YES
Display Average
NO
Display poor
STOP