University School of Automation & Robotics

Course – Artificial Intelligence & Data Science

Batch – 2023-2027 [B1]

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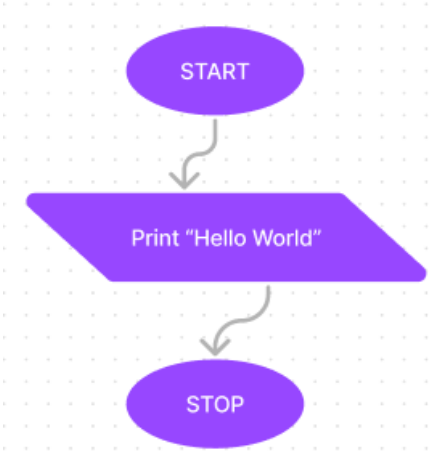
Aim: Write a Program to Print Hello World

Algorithm

Step 1 – START

Step 2 - Print Hello World

Step 3 - STOP



Program

```c
q1.c > main()
    You, 23 hours ago | 1 author (You)
1   //Q1-Hello World Program
2   //By-Utsav Maji(AIDS-B1)
3   #include <stdio.h>
4
5   int main(){
6       printf("Hello World");
7       return 0;
8   }       You, 23 hours ago • q1 done
```

Output

```
Output
/tmp/9SqRFTUyVQ.o
Hello World
```

Aim: Program to add two numbers

Algorithm

Step 1 – START

Step 2 – Create 2 Variable of Integer Data-Type, a & b.

Step 3 – Print “Enter First No.”.

Step 4 – Input the First No. , a.

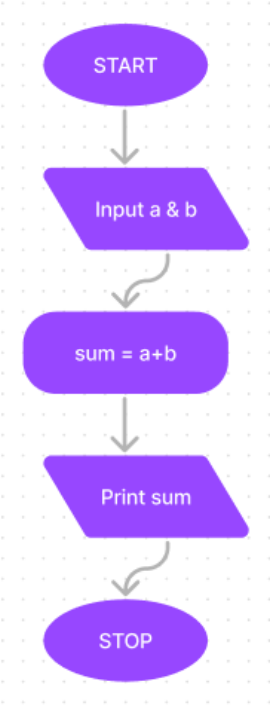
Step 5 – Print “Enter Second No.”.

Step 6 – Input the Second No. , b.

Step 7 – Add variable a & b and store then in another variable named sum.

Step 8 – Print the sum.

Step 9 – STOP.



Program

q2.c > main()

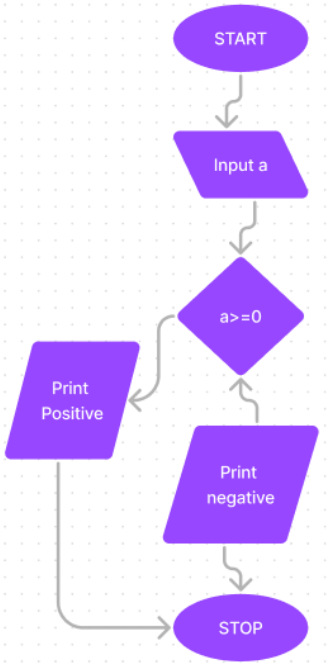
```
You, 23 hours ago | 1 author (You)
1   //Q2- Program of Sum
2   //Created by Utsav(AIDS-B1)
3   #include <stdio.h> //Importing the header files in this case, stdio.h
4
5   int main(){
6       int a=0,b=0; //declaring variables to store input by user
7       printf("Enter 1st no."); //Printing some labels for 1st integer.
8       scanf("%d",&a); //Taking Input from user for a.
9       printf("Enter 2nd no."); //Printing some labels for 2nd integer.
10      scanf("%d",&b); //Taking Input from user for b.
11      int sum = a+b; //declaring a variable to store the sum of both above integers
12      printf("The Sum of Both no. is %d",sum); //Printing the sum
13      return 0; //returning 0 after program is finished
14  }       You, 23 hours ago • q2 done
```

Output

```
Output
/tmp/9SqRFTUyVQ.o
Enter 1st no.56
Enter 2nd no.89
The Sum of Both no. is 145
```

```
Output
/tmp/NTcLf7wBas.o
Enter 1st no.41
Enter 2nd no.20
The Sum of Both no. is 61
```

Aim: Write a Program using Relational Operator



Algorithm

Step 1 – START

Step 2 – Create a variable a.

Step 3 - Print “Enter a no. ”.

Step 4 – Input a no. in ‘a’.

Step 5 – If ‘a>=0’ is true, print “Entered no. is Positive”

else print “Entered no. is Negative”.

Step 6 – STOP

Program

q3.c > main()

```
You, now | 1 author (You)
//Q3-Program to tell if input no. is positive/negative
//By Utsav(AIDS-B1)
#include <stdio.h> //Importing header files, in this case its stdio.h
int main(){
    int a; //declaring a integer variable to store the input integers.
    printf("Enter a no. "); //printing a label to receive an integer.
    scanf("%d",&a); //taking input from user for an integer

    // Conditional/Ternary operator - is 'a' greater than or equal to 0 '?'
    //, If yes then print "Entered no. is POSITIVE"
    //otherwise ':' print "Entered no. is NEGATIVE";      You, now • Uncommitted ch
    (a>=0) ? printf("Entered no. is POSITIVE") : printf("Entered no. is NEGATIVE");

    return 0; //Returning 0 from main funcn denoting program is finished.
}
```

Output

```
Output
/tmp/9SqRFTUyVQ.o
Enter a no. 89
Entered no. is POSITIVE
```

```
Output
/tmp/NTcLf7wBas.o
Enter a no. -10078
Entered no. is NEGATIVE
```

Aim: Program using Relational Operator

Algorithm

Step 1 – START

Step 2 – Create two variables a & b.

Step 3 - Print “Enter First No.”.

Step 4 – Input the First No. , a.

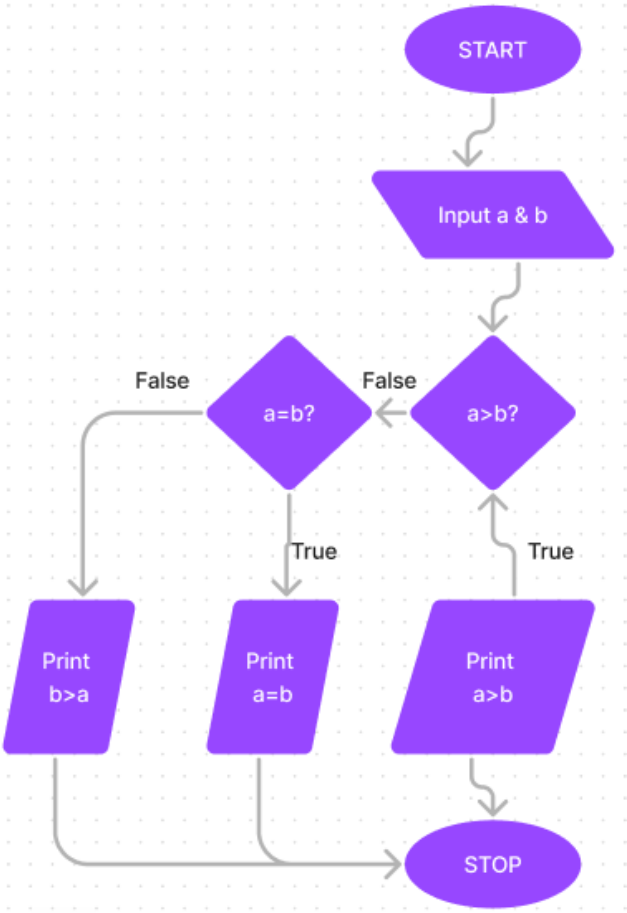
Step 5 – Print “Enter Second No.”.

Step 6 – If ‘a>b’ is true, print “1st number is greater than 2nd number”.

Step 7 – else if ‘a=b’ is true , print “Both nos. are equal”.

Step 8 – Else print “2nd number is greater than 1st”.

Step 9 – STOP



Program

q4.c > main()

```
You, 6 hours ago | 1 author (You)
1   //Q4-Program to decide which of entered nos. is greater
2   //By- Utsav (AIDS-B1)
3
4   #include <stdio.h> //Importing header file
5
6   int main(){
7       int a,b; //declaring integer variables to store input data
8       printf("Enter 1st no. :"); //label for 1st input
9       scanf("%d",&a); //input from user
10
11      printf("Enter 2nd no. :"); //label for 2nd input
12      scanf("%d",&b); //input from user
13
14      if(a>b){ //conditional statement- if a is greater than b
15          printf("1st No. is Greater than 2nd No.");
16          //then print, 1st is greater than 2nd
17      }
18      else if(a==b){ //conditional statement- else if a is equal to b
19          printf("Both no. are equal");
20          //then print both are equal
21      }
22      else{ //conditional statement- else print b is greater than a
23          printf("2nd No. is Greater than 1st No.");
24      }
25      return 0; //return 0 after executing all above code blocks
26  }
```

Output

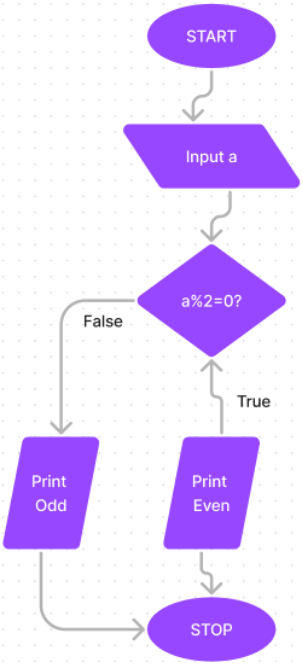
Output

```
/tmp/9SqRFTUyVQ.o
Enter 1st no. :56
Enter 2nd no. :89
2nd No. is Greater than 1st No.
```

Output

```
/tmp/NTcLf7wBas.o
Enter 1st no. :10
Enter 2nd no. :-89625
1st No. is Greater than 2nd No.
```

Aim: Program to check whether a no. is Even or Odd



Algorithm

Step 1 – START

Step 2 – Create a variable ‘a’.

Step 3 – Print “Enter a no.”

Step 4 – Input a no. to “a”.

Step 5 – If remainder of a/2 is zero, print “Entered no. is Even”.

Step 6 – else print “Entered no. is odd”.

Step 7 – STOP

Program

q5.c > main()

```c
//Q5- Program to check wether a no. is even or odd
//By- Utsav(AIDS-B1)
#include <stdio.h>//importing header files

int main(){
    int a;//declaring an integer variable to store input no.
    printf("Enter a no.: ");//label to get input no.
    scanf("%d",&a); //taking input no. from user

    //conditional statement-if the remainder on division of a with 2 is equal to 0
    if(a%2==0){
        printf("Entered no. is Even");
        //then the input no. is even.
    }
    //connditional statement- else the no. is odd
    else{
        printf("Entered no. is Odd");
    }
    return 0;//return 0 after the program is done.
}
```

You, 6 hours ago | 1 author (You)

You, 6 hours ago • q5 done

Output

```
Enter a no.: 56
Entered no. is Even
```

```
Enter a no.: -3
Entered no. is Odd
```

Aim: Program to check whether a no. is prime or not

Algorithm

Step 1 – START

Step 2 – Create a variable ‘a’ to store input.

Step 3 – Input a no. for ‘a’.

Step 4 – Create a Bool Variable ‘isPrime’ and set it as false default.

Step 5 – if “a>3” is true, move to further steps.

Step 6 – initialize integer ‘i’ as ‘2’.

Step 7 – if ‘a/I = 0’ is true, set ‘isPrime’ as false.

Step 8 – break the loop.

Step 9 – else, set ‘isPrime’ as True.

Step 10 – Increment ‘i’ by 1, i = i+1.

Step 11 – Repeat Steps 7 - 10 until ‘i<a’.

Step 12 – (After Step 5), else if ‘a=2’ or ‘a=3’ is true, set ‘isPrime’ as True.

Step 13 – else set ‘isPrime’ as false.

Step 14 – if ‘isPrime = true’ is true, Print “Entered no. is Prime”.

Step 15 – else Print “Entered no. is Prime”.

Step 16 – STOP

Program

```c
//Q6- Program to check if a no. is even or odd.
//by - Utsav(AIDS-B1)

//importing header files, in this case its stdio.h and stdbool.h
#include<stdio.h>
#include<stdbool.h>
int main(){
    int a; //declaring an integer varible to store input no.
    printf("Enter a no.: "); //label to input a no.
    scanf("%d",&a); //taking integer input from user

    //declaring a bool type variable and setting it as false by default
    bool isPrime=false;

    //conditional statement- if entered no. is greater than 3
    //then proceed and check it for prime or not
    if(a>3){
        //initializing a loop starting with i=2 and will end when i is just
smaller than entered no.
        //incrementing i after every end of code block
        for(int i=2;i<a;i++){
            //conditional statement- if the entered no. on division with all the
nos.
            //which are smaller than the entered no. and greater and equal to 2
            //gives remainder 0, then the entered no. is not prime
            if(a%i==0){
                isPrime=false;
                break;
            }
            //conditional statement- else the entered no. is prime
            else{
                isPrime=true;
            }
        }
    }
    //conditional statement- if the entered no. is 2 or 3
    //then the entered no. is prime
    else if(a==2 || a==3){
        isPrime=true;
    }

    //conditional statement-if the entered no. is prime
    //print entered no. is prime
    if(isPrime){
        printf("Entered no. is Prime");
    }
    //conditional statement- else print entered no. is not prime
    else{
        printf("Entered no. is not Prime");
    }
    return 0; //return 0 after program is successfully implemented
```

```
}
```

Output

```
Output

/tmp/9SqRFTUyVQ.o
Enter a no.: 45
Entered no. is not Prime
```

```
Output

/tmp/NTcLf7wBas.o
Enter a no.: 11
Entered no. is Prime
```