✅ Day : Conditional Statements (4-8-2025)

1. Write a program to check if a number is positive, negative, or zero.

IPO

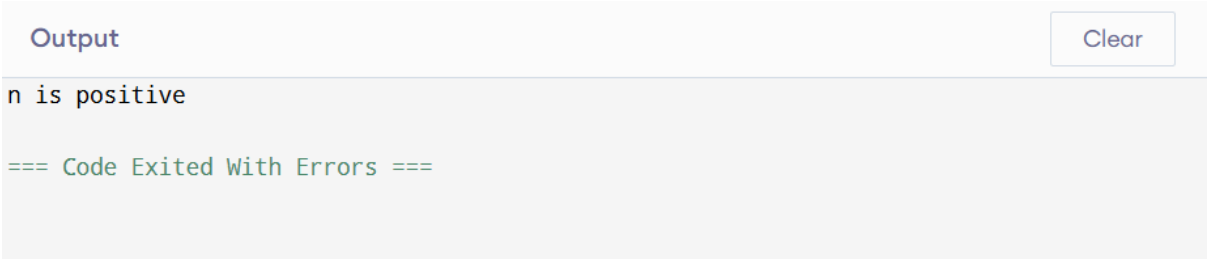
Input : get a value for input

Process: to check if a number is positive ,negative or zero using if else ,else if condition n<0 is negative , n>0 is positive, else it is zero

Output: output the positive, negative or zero for given input

```
#include<stdio.h>
void main()
{
   int n=6;
   {
      if (n<0)
      {
         printf("n is negative");
      }
      else if(n>0)
      {
         printf("n is positive");
      }
      else
            printf("n is zero");
    }
```

```
  }
}
```



2. Write a program to find the largest among three numbers.

IPO

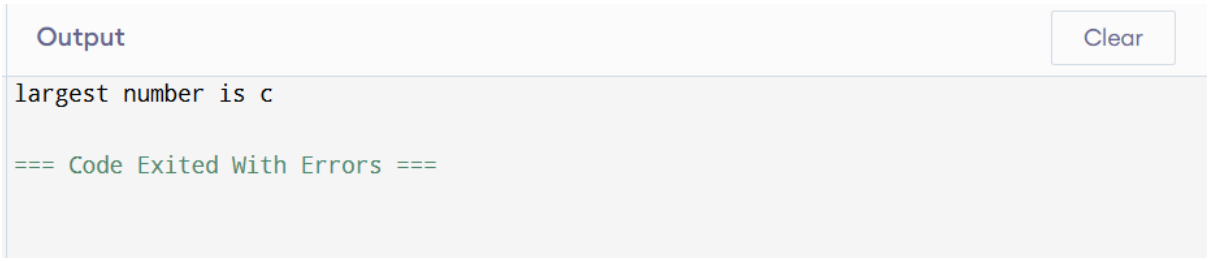
Input: to get 3 value as input

Process: to find the largest among three numbers using relational condition among 3 numbers.

output: output the value for largest among three numbers

```
#include<stdio.h>
void main()
{
   int a=2,b=2,c=3;
   {
    if (a>=b&&a>=c)
    {
      printf("largest number is a");
   }
    else if (b>=a&&b>=c)
```

```
    {
        printf("largest number is b");
    }
    else
        printf("largest number is c");
    }
}
```



3.Write a program to check if a year is a leap year.

IPO

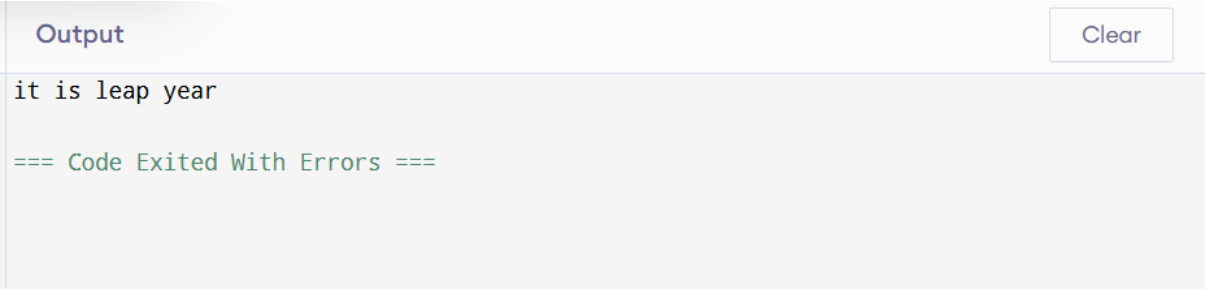
Input : to get a value as input

Process: to check if a year is leap year not using the condition a%4==0,a year is leap year if it is divisible by 4

Output : output the value using the condition

```
#include<stdio.h>
void main()
{
    int a=1964;
    if (a%4==0)
    {
        printf("it is leap year");
```

```
  }
else
  {
     printf("it is not leap year");
  }
}
```



4.Write a program to check whether a character is a vowel or consonant

IPO

Input: get a value as input

Process : to check whether a character is a vowel or consonant by ch is one of the vowels(a,e,i,o,u) which is lowercase using if statement.

Output: if a ch is not vowel it prints consonant as output

```
#include<stdio.h>
void main()
{
 char ch;
 scanf("%c",&ch);
  if (ch=='a'||ch=='e'||ch=='i'||ch=='o'||ch=='u'||
     ch=='A'||ch=='E'||ch=='I'||ch=='O'||ch =='U')
  {
```

```
    printf("%c is a vowel",ch);
  }
  else
  {
    printf("%c is a consonant",ch);
  }
}
```

```
Compiled Successfully. memory: 1664 time: 0 exit code: 0
a is a vowel
```

5. Write a program to assign grades based on marks.

IPO

Input: get a input based grades

Process: to assign grades based on marks for the given input using relational condition

Output: output the value grades

```
#include<stdio.h>
void main()
{
  int m=35;
  {
  if(m<0||m>100)
  {
    printf("invalid marks");
   }
```

```
   else if (m>=90)
   {
      printf("grade A");
   }
   else if(m>=80&&m<=70)
   {
      printf("grade B");
   }
   else if(m>=50)
   {
   printf("grade C");
   }
   else
   printf("grade D");
   }
}
```

Output Clear

```
grade D

=== Code Exited With Errors ===
```

6. Write a program to check whether a number is divisible by 5 and 11.

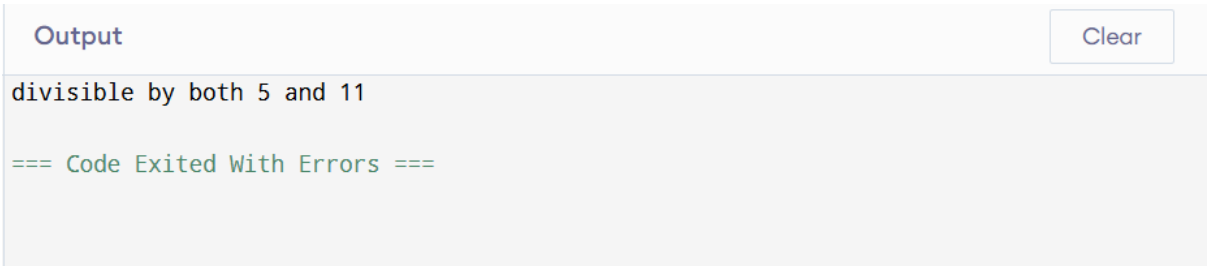
IPO

Input : get 1 value as input say a

Process: to check whether a number is divisible by 5 and 11 using modulor. Use the condition n%5==0 ,n%11==0.

Output : output the number divisible by both 5 and 11

```
#include<stdio.h>
void main()
{
   int n;
   scanf("%d",&n);
   if(n%5==0&&n%11==0)
   {
      printf("divisible by both 5 and 11");
   }
   else
   {
      printf(" not divisible by both 5 and 11");
   }
}
```



7. Write a program to find the absolute value of a number.

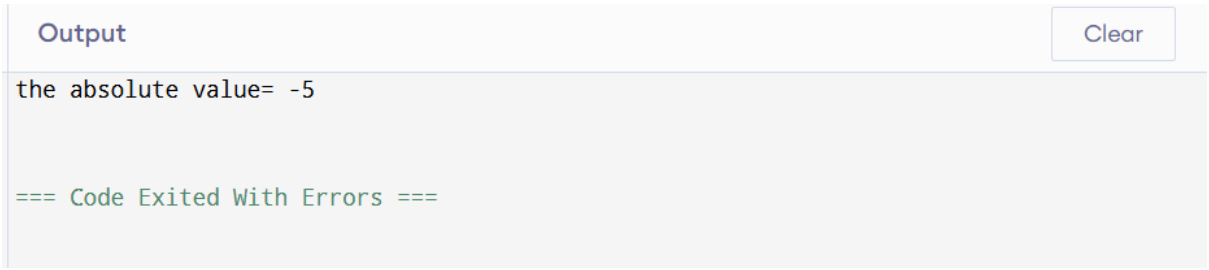
IPO

Input : get a value as input say as k

Process : to find the absolute value of a number using the condition number = - number if the k < 0

Output : output the absolute value of given number

```
#include<stdio.h>
void main()
{
   int k=5;
   k=-k;
   if(k<0)
   {
      printf("the absolute value= %d\n",k);
   }
}
```



8. Write a menu-driven program to perform +, -, *, / operations.

IPO

Input: get two numbers as input say num1 ,num2

Process: to program menu driven program to perform +,-,*,/ operators using switch create calculator setup

Output: output the operators of num1 and num2

```
#include<stdio.h>
void main()
{
   float n=2,m=4,r;
   int choice;
```

```
   scanf("%d",&choice);
   if(choice>=1&&choice<=4)
   switch(choice)
   {
      case1:
      r=n+m;
      printf("r:%.2f+%.2f=%.2f\n",n,m,r);break;
      case2:
      r=n-m;
      printf("r:%.2f-%.2f=%.2f\n",n,m,r);break;
      case3:
      r=n*m;
      printf("r:%.2f*%.2f=%.2f\n",n,m,r);break;
      case4:
      if(m!=0)
      {
         r=n/m;
         printf("r:%.2f/%.2f=%.2f\n",n,m,r);break;
      }
   default:printf("invalid choice.please enter number between 1 and5.\n");
    }
}
```

9. Write a program to find roots of a quadratic equation

IPO

Input : get a value as input

Process: to find roots of a quadratic equation by root1,root2,real part,imaginary part using d=b^2 – 4ac,root1=(-b+sqrt(d))/2a,d=(-b-sqrt(d))/2a . if d=0 it is real and equal,d<0 it is roots are complex,d>0 its roots are real and distinct

Output : output the value of roots

```
#include <stdio.h>

#include <math.h>

void main()

{

   int a, b, c, d, rt1, rt2, realPart, imagPart;

    scanf("%d %d %d", &a, &b, &c);

   d= b * b - 4 * a * c;

   if (d > 0)

   {

      rt1 = (-b + sqrt(d)) / (2 * a);

      rt2 = (-b - sqrt(d)) / (2 * a);

   }

   else if (d == 0)

   {

      rt1 = rt2 = -b / (2 * a);

      printf("Roots are real and equal: rt1 = rt2 = %.2lf\n", rt1);

   }

   else

   {

      realPart = -b / (2 * a);
```

```
      imagPart = sqrt(-d) / (2 * a);
      printf("Roots are complex: rt1 = %.2lf + %.2lfi and rt2 = %.2lf - %.2lfi\n", realPart, imagPart, realPart, imagPart);
   }
}
```

```
Compiled Successfully. memory: 1920 time: 0 exit code: 0
Roots are complex: rt1 = 00 + 00i and rt2 = 00 - 00i
```

10. Write a program to find the number of digits in a number.

IPO

Input : get a number as input say num

Process : divide the number by 10 to get the remainder and then divide by 10 to get quoient

Output : output the number of digits

```
#include<stdio.h>
void main()
{
 int count= 0,num=4567,r;
 while(num>0)
 {
    r=num%10;
    count++;
    num=num/10;
 }
```

```
printf("number of digits:%d\n",count);

}
```

```
Compiled Successfully. memory: 1792 time: 0 exit code: 19
number of digits:4
```