Day : Conditional Statements (4-8-2025)

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

Input: get a value as input,say a.

Process:if a is greater than zero,print positive;elseif a is lesser than zero ,print negative;else print zero.

Output:the output is positive or negative or zero.

Program:

```
#include<stdio.h>
void main()
{
 int a;
 scanf("%d",&a);
 if(a>0)
 {
  printf("a is positive");
 }
 else if(a<0)
 {
  printf("a is negative");
 }
 else
 printf("a is zero");
}
```

Output

```
5
a is positive
```

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

Input: get 3 value as input say a,b,c.

Process:if a is greater than zero and and a is greater than zero, print a is greater; else if b is greater than zero,print b is greater;else c is greater.

Output:the output is which varaiable is largest.

Program:

```
#include<stdio.h>
void main()
{
  int a,b,c;
  scanf("%d%d%d",&a,&b,&c);
  if(a>0&&a>c)
  printf("a is greater");
  else if(b>c)
  {
  printf("b is greater");
  }
  else
  printf("c is greater");
}
```

Output

```
45
69
57
b is greater
```

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

Input: get a value as input say y.

Process:if y %4 is equal to equal to zero,print y is leap year;else print y is not leap year.

Output: the output is y is leap year or not.

Program:

```
#include<stdio.h>
void main()
{
   int y;
   scanf("%d",&y);
   if(y%4==0)
   {
      printf("y is leap year");
   }
   else
   {
      printf("y is not a leap year");
   }
}
```

Output

```
2035
y is not a leap year
```

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

Input:to get a value as input say ch.

Process:

Output:the output is vowel or consonant.

Program:

```
#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.\n", ch);
   }
   else
   {
      printf("%c is a consonant.\n", ch);
   }
}
```

Output

```
n
n is a consonant.
```

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

Input:to get a value as input say a.

Process:if (a>=95&&a<=100)excellent;else if(a>=90&&a<=94)very good;else if(a>=80&&a<=89)good;elseif(a>=65&&a<=79)pass;else fail.

Output:the output is excellent or very good or good or pass or fail.

Program:

```
#include<stdio.h>
void main()
{
   int a;
   scanf("%d",&a);
   if(a>=95&&a<=100)
   {
    printf("excellent");
   }
   else if(a>=90&&a<=94)
  {
    printf("very good");
 }
    else if(a>=80&&a<=89)
    {
     printf("good");
    }
    else if(a>=65&&a<=79)
 {
     printf("pass");
 }
```

```
    else
  {
    printf("fail”);
  }
}
```

Output

```
110
a is divible by 5 and 11
```

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

Input:to get a value as input say a.

Process:if a modulor 55 equal to equal to zero, print a is divisible by 5 and 11;else print a is divisible by 5 and 11.

Output: the output a is divisible by 5 and11 or not.

Program:

```
#include<stdio.h>
void main()
{
  int a;
  scanf("%d",&a);
  if(a%55==0)
  {
     printf("a is divible by 5 and 11");
  }
  else
```

```
 {
    printf("a is not divisible by 5 and 11");
 }
}
```

Output

```
110
a is divible by 5 and 11
```

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

Input: to get a value as input and say n.

Process: if n is lesser than zero ; n=-10.

Output: the will be in n.

Program:

```
#include<stdio.h>
void main()
{
  int n=-7;
  if(n<0)
  n=-n;
  {
     printf("the absolute value=%d\n",n);
  }
}
```

Output

```
the absolute value=7
```

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

Input:

Process:

Output:

Program:

```
#include<stdio.h>
void main()
{
   float n,m,r;
   int choice;
   scanf("%d",&choice);
   if(choice>=1&&choice<=4)
   {
     scanf("%f%f",&n,&m);
   }
   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 and 5.\n");
  }
```

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

Input:get a input as say a,b,c

Process:

Output:roots of a quadratic equation

Program:

```
#include<stdio.h>
#include<math.h>
int main()
{
   float a, b, c;
   float discriminant, root1, root2;
   float realPart, imaginaryPart;
   printf("Enter coefficients a, b, and c: ");
   scanf("%f %f %f", &a, &b, &c);
   discriminant = b * b - 4 * a * c;
   if (discriminant > 0)
   {
      root1 = (-b + sqrt(discriminant)) / (2 * a);
```

```
        root2 = (-b - sqrt(discriminant)) / (2 * a);
        printf("Roots are real and distinct: %.2f and %.2f\n", root1, root2);
    }
    else if (discriminant == 0)
    {
        root1 = root2 = -b / (2 * a);
        printf("Roots are real and equal: %.2f and %.2f\n", root1, root2);
    }
    else
    {
        realPart = -b / (2 * a);
        imaginaryPart = sqrt(-discriminant) / (2 * a);
        printf("Roots are complex: %.2f + %.2fi and %.2f - %.2fi\n", realPart,
imaginaryPart, realPart, imaginaryPart);
    }
}
```

Output

```
Enter coefficients a, b, and c:
9
20
55
Roots are complex: -1.11 + 2.21i and -1.11 - 2.21i
```

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

Input:

Process:

Output:

Program: