Basic programs

1. Write a C program to perform input/output of all basic data types.

```c
#include<stdio.h>
void main()
{
    int a;
    float b;
    char c;
    scanf("%d",&a);
    scanf("%f",&b);
    scanf("%c",&c);
    printf("Integer=%d\nFloat=%f\nCharacter=%c",a,b,c);
}
```

2. Write a C program to enter two numbers and find their sum.

```c
#include<stdio.h>
void main()
{
    int a;
    float b;
    char c;
    scanf("%d",&a);
    scanf("%f",&b);
    scanf("%c",&c);
    printf("Integer=%d\nFloat=%f\nCharacter=%c",a,b,c);
}
```

3. Write a C program to enter two numbers and perform all arithmetic operations.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int a,b;
    printf("Enter the value of a and b\n");
    scanf("%d %d",&a,&b);
    printf("Sum=%d",a+b);
    printf("Product=%d",a*b);
    printf("difference=%d",a-b);
    printf("division=%d",a/b);

    return 0;
}
```

4. Write a C program to enter length and breadth of a rectangle and find its perimeter.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int l,b;
    printf("Enter the length and breadth of the rectangle\n");
    scanf("%d %d",&l,&b);
    printf("Perimeter of the  rectangle is=%d",2*(l+b));
    return 0;
}

```

5. Write a C program to enter length and breadth of a rectangle and find its area.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int l,b;
    printf("Enter the length and breadth of the rectangle\n");
    scanf("%d %d",&l,&b);
    printf("Area of the  rectangle is=%d",l*b);
    return 0;
}
```

6. Write a C program to enter radius of a circle and find its diameter, circumference and area.

```c
#include<stdio.h>
void main()
{
    int r;
    printf("Enter the radius of the circle:");
    scanf("%d",&r);
    printf("Diameter of circle is=%d\n",2*r);
    printf("Circumference of circle is=%f\n",2*3.14*r);
    printf("Area of circle is=%f\n",3.14*r*r);
}
```

7. Write a C program to enter length in centimeter and convert it into meter and kilometer.

```c
#include<stdio.h>
void main()
{
    float l;
    printf("Enter the length in centimmeter\n");
    scanf("%f",&l);
    l/=100;
    printf("\nThe length in meter is %f\n",l);
    l/=1000;
    printf("\nThe length in kilometer is %f\n",l);
}
```

8. Write a C program to enter temperature in Celsius and convert it into Fahrenheit.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    float c;
    printf("Enter the temperature in celcius:");
    scanf("%f",&c);
    printf("Temperature in farenheit is=%f\n",c*1.8+32);
    return 0;
}
```

9. Write a C program to enter temperature in Fahrenheit and convert to Celsius

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    float f;
    printf("Enter the temperature in farenheit:");
    scanf("%f",&f);
    printf("Temperature in celcius is=%f\n",(f-32)*5/9);
    return 0;
}
```

10. Write a C program to convert days into years, weeks and days.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int d,w;
    printf("Enter the number of days:");
    scanf("%d",&d);
    float y=d/365;
    printf("Year=%f",y);
    printf("Enter the Number of weeks:\n");
    scanf("%d",&w);
    int x=7*w;
    printf("Number of days =%d\n",x);
    return 0;
}
```

11. Write a C program to find power of any number x ^ y.

```c
//Write a program to find power x^y.
#include<stdio.h>
#include<math.h>
int main(int argc, char const *argv[])
{
    int x,y;
    printf("enter a number\n");
    scanf("%d %d",&x,&y);
    int c=pow(x,y);
    printf("%d",c);
    return 0;
}
```

12. Write a C program to enter any number and calculate its square root.

13. Write a C program to enter two angles of a triangle and find the third angle.

```c
//Write a C program to enter two angles of a triangle and find the third angle.
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int a,b;
    printf("Enter the two angle of triangle:");
    scanf("%d %d",&a,&b);
    printf("Third angle of the triangle is=%d",180-(a+b));
    return 0;
}
```

14. Write a C program to enter base and height of a triangle and find its area.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int b,h;
    printf("Enter the base and height of the triangle\n");
    scanf("%d%d",&b,&h);
    float a=1/2*b*h;
    printf("Area of triangle is %f",a);
    return 0;
}
```

15. Write a C program to calculate area of an equilateral triangle.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int a;
    scanf("%d",&a);
    printf("Area of the equaliteral triangle is %d",(1.732/4)*a*a);
    return 0;
}
```

16. Write a C program to enter marks of five subjects and calculate total, average and percentage.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int a,b,c,d,e;
    printf("Enter the marks in math:");
    scanf("%d",&a);
    printf("Enter the marks in English:");
    scanf("%d",&b);
    printf("Enter the marks in computer:");
    scanf("%d",&c);
    printf("Enter the marks in physics:");
    scanf("%d",&d);
    printf("Enter the marks in electrical:");
    scanf("%d",&e);
    float t=a+b+c+d+e;
    printf("The total marks=%f\n",t);
    printf("The average of the marks=%f\n",t/5);
    printf("The Percentage=%f\n",t/500*100);
    return 0;
}
```

17. Write a C program to enter P, T, R and calculate Simple Interest.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int p,r,t;
    printf("Enter principle,rate  and time\n");
    scanf("%d %d %d",&p,&r,&t);
    float si=p*r*t/100;
    printf("Simple Interest=%f\n",si);
    return 0;
}
```

18. Write a C program to enter P, T, R and calculate Compound Interest.

```c
#include<stdio.h>
#include<math.h>
int main(int argc, char const *argv[])
{
    int p,r,t;
    printf("Enter principle,rate  and time\n");
    scanf("%d %d %d",&p,&r,&t);
    float ci=p*(pow((1+r/100),t));
    printf("Compound Interest=%f",ci);
    return 0;
}
```

Bitwise Operator

1. Write a C program to check Least Significant Bit (LSB) of a number is set or not.

```c
#include <stdio.h>
void main()
{
    int n;
    printf("Enter any number: ");
    scanf("%d", &n);
    if(n & 1)
        printf("LSB of %d is set (1).", n);
    else
        printf("LSB of %d is unset (0).", n);
}
```

2. Write a C program to check Most Significant Bit (MSB) of a number is set or not.

```c
#include <stdio.h>
#define BITS sizeof(int) * 8

int main()
{
    int num, msb;
    printf("Enter any number: ");
    scanf("%d", &num);
    msb = 1 << (BITS - 1);
    if(num & msb)
        printf("MSB of %d is set (1).", num);
    else
        printf("MSB of %d is unset (0).", num);

    return 0;
}
```

3. Write a C program to get nth bit of a number.

```c
#include <stdio.h>

int main()
{
    int a,n,b;

    printf("Enter any number: ");
    scanf("%d", &a);
    printf("Enter nth bit ");
    scanf("%d", &n);

    b = (a >> n) & 1;

    printf("The %d bit is set to %d", n, b);

    return 0;
}
```

4. Write a C program to set nth bit of a number.

```c
#include <stdio.h>

int main()
{
    int a,n,b;

    printf("Enter any number: ");
    scanf("%d", &a);
    printf("Enter nth bit ");
    scanf("%d", &n);

    b = (a >> n) & 1;

    printf("The %d bit is set to %d", n, b);

    return 0;
}
```

5. Write a C program to clear nth bit of a number.

```c
#include <stdio.h>

int main()
{
    int num, n, newNum;
    printf("Enter any number: ");
    scanf("%d", &num);
    printf("Enter nth bit to clear (0-31): ");
    scanf("%d", &n);
    newNum = num & (~(1 << n));
    printf("Bit cleared successfully.\n\n");
    printf("Number before clearing %d bit: %d (in decimal)\n", n, num);
    printf("Number after clearing %d bit: %d (in decimal)\n", n, newNum);

    return 0;
}
```

6. Write a C program to toggle nth bit of a number.

```c
#include <stdio.h>

int main()
{
    int num, n, newNum;
    printf("Enter any number: ");
    scanf("%d", &num);
    printf("Enter nth bit to toggle (0-31): ");
    scanf("%d", &n);
    newNum = num ^ (1 << n);
    printf("Bit toggled successfully.\n\n");
    printf("Number before toggling %d bit: %d (in decimal)\n", n, num);
    printf("Number after toggling %d bit: %d (in decimal)\n", n, newNum);

    return 0;
}
```

7. Write a C program to get highest set bit of a number.

```c
#include <stdio.h>
#define INT_SIZE sizeof(int) * 8
int main()
{
    int num, order = -1, i;
    printf("Enter any number: ");
    scanf("%d", &num);
    for(i=0; i<INT_SIZE; i++)
    {
        if((num>>i) & 1)
            order = i;
    }
    if (order != -1)
        printf("Highest order set bit in %d is %d", num, order);
    else
        printf("0 has no set bits.");

    return 0;
}
```

8. Write a C program to get lowest set bit of a number.

```c
#include <stdio.h>
#define INT_SIZE sizeof(int) * 8
int main()
{
    int num, order, i;
    printf("Enter any number: ");
    scanf("%d", &num);
    order = INT_SIZE - 1;
    for(i=0; i<INT_SIZE; i++)
    {
        if((num>>i) & 1)
        {
            order = i;
            break;
        }
    }
    printf("Lowest order set bit in %d is %d", num, order);
    return 0;
}
```

9. Write a C program to count trailing zeros in a binary number.

10. Write a C program to count leading zeros in a binary number.

```c
#include <stdio.h>
#define INT_SIZE sizeof(int) * 8

int main()
{
    int num, count, msb, i;
    printf("Enter any number: ");
    scanf("%d", &num);
    msb = 1 << (INT_SIZE - 1);

    count = 0;
    for(i=0; i<INT_SIZE; i++)
    {
        if((num << i) & msb)
        {
            break;
        }

        count++;
    }

    printf("Total number of leading zeros in %d is %d", num, count);

    return 0;
}
```

conditional operators

1. Write a C program to find maximum between two numbers using conditional operator.

```c
//  Write a C program to find maximum between two numbers using conditional operator.
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int a,b;
    printf("Enter the numebrs:");
    scanf("%d%d",&a,&b);
    a>b?printf("A is greater") : printf("B is greater");
    return 0;
}
```

2. Write a C program to find maximum between three numbers using conditional operator.

```c
#include<stdio.h>
int main()
{
int a,b,c,big;
printf("\nEnter 3 numbers:");
scanf("%d %d %d",&a,&b,&c);
big=(a>b&&a>c?a:b>c?b:c);
printf("\nThe biggest number is:%d",big);
return 0;
}
```

3. Write a C program to check whether a number is even or odd using conditional operator.

```c
//  Write a C program to check whether a number is even or odd.
#include<stdio.h>
void main()
{
    int a;
    printf("Enter the number:");
    scanf("%d",&a);
    a%2?printf("odd") : printf("even");
}
```

4. Write a C program to check whether year is leap year or not using conditional operator.

```c
//  Write a C program to check whether a year is leap year or not.
#include <stdio.h>
int main()
{
    int year;
    printf("Enter year : ");
    scanf("%d", &year);
    if(((year % 4 == 0) && (year % 100 !=0)) || (year % 400==0))
    {
        printf("leap year");
    }
    else
    {
        printf("not leap year");
    }

    return 0;
}
```

5. Write a C program to check whether character is an alphabet or not using conditional operator.

If-else programming

1. Write a C program to find maximum between two numbers.

```c
//  Write a C program to find maximum between two numbers using conditional operator.
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int a,b;
    printf("Enter the numebrs:");
    scanf("%d%d",&a,&b);
    if(a>b)
    printf("A is greater");
    else
    printf("B is greater");
    return 0;
}
```

2. Write a C program to find maximum between three numbers.

```c
//Write a C program to find maximum between three numbers.
#include<stdio.h>
void main()
{
    int a,b,c;
    printf("Enter the three numbers");
    scanf("%d %d %d",&a,&b,&c);
    if(a>b && a>c )
            printf("a is greatest");
    if(b>a && b>c)
        printf("B is greatest");
    else
    printf("C is geatest");
}
```

3. Write a C program to check whether a number is negative, positive or zero.

```c
//  Write a C program to check whether a number is negative, positive or zero.
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int a;
    printf("Enter the number");
    scanf("%d",&a);
    if(a>0)
    printf("The  number is positive\n");
    else if(a==0)
    printf("The number is zero\n");
    else
    printf("The number is negative\n");
    return 0;
}
```

4. Write a C program to check whether a number is divisible by 5 and 11 or not.

```c
//  Write a C program to check whether a number is divisible by 5 and 11 or not.
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int a;
    printf("Enter the number:");
    scanf("%d",&a);
    if(a%5==0)
    printf("The number is divisible by 5\n");
    if(a%11==0)
    printf("The number is divisible by 11\n");
    return 0;
}
```

5. Write a C program to check whether a number is even or odd.

```c
//  Write a C program to check whether a number is even or odd.
#include<stdio.h>
void main()
{
    int a;
    printf("Enter the number:");
    scanf("%d",&a);
    if(a%2==0)
    printf("The number is even\n");
    else
    printf("The number is odd\n");
}
```

6. Write a C program to check whether a year is leap year or not.

```c
//  Write a C program to check whether a year is leap year or not.
#include <stdio.h>
int main()
{
    int year;
    printf("Enter year : ");
    scanf("%d", &year);
    if(((year % 4 == 0) && (year % 100 !=0)) || (year % 400==0))
    {
        printf("leap year");
    }
    else
    {
        printf("not leap year");
    }

    return 0;
}
```

7. Write a C program to check whether a character is alphabet or not.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    char c;
    printf("Enter a character:");
    scanf("%c",&c);
    if((c>='A' && c<='z') || (c>='a' && c<='z'))
    printf("The given character is alphabet\n");
    else
    printf("The number is not alphabet\n");
    return 0;
}
```

8. Write a C program to input any alphabet and check whether it is vowel or consonant.

```c
#include<stdio.h>
void main()
{
    char c;
    printf("Enter the character to be checked:\n");
    scanf("%c",&c);
    if(c=='a' || c=='e' || c=='i' || c=='o' || c=='u' || c=='A' || c=='E' || c=='I' ||
c=='O' || c=='U')
    {
        printf("The entered character is vowel");
    }
    else
    printf("The entered character is consonant");
}
```

9. Write a C program to input any character and check whether it is alphabet, digit or special character.

```c
#include<stdio.h>
void main()
{
    char c;
    printf("Enter the character to be checked:\n");
    scanf("%c",&c);
    if(c>='A' && c<='Z' && c>='a' && c<='z')
    {
        printf("The entered character is Alphabet");
    }
    else if(c>='1' && c<='9')
    printf("Entered character is Number");
    else
    printf("The entered character is Special character");
}
```

10. Write a C program to check whether a character is uppercase or lowercase alphabet.

```c
#include<stdio.h>
void main()
{
    char c;
    printf("Enter the character to be checked:\n");
    scanf("%c",&c);
    if(c>='A' && c<='Z')
    {
        printf("The entered character is Upper Case");
    }
    else
    printf("Entered character is Lower Case");
}
```

11. Write a C program to input week number and print week day.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int w;
    printf("Enter the number of weeks:");
    scanf("%d",&w);
    if(w==1)
    printf("Monday");
    if(w==2)
    printf("Tuesday");
    if(w==3)
    printf("Wednesday");
    if(w==4)
    printf("Thursday");
    if(w==5)
    printf("Friday");
    if(w==6)
    printf("Saturday");
    if(w==7)
    printf("Sunday");
}
```

12. Write a C program to input month number and print number of days in that month.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int y;
    printf("Enter the number of weeks:");
    scanf("%d",&y);
    if(y==1)
    printf("January=31");
    if(y==2)
    printf("February=28 or 29");
    if(y==3)
    printf("March=31");
    if(y==4)
    printf("April=30");
    if(y==5)
    printf("May=31");
    if(y==6)
    printf("June=30");
    if(y==7)
    printf("July=31");
    if(y==8)
    printf("August=31");
    if(y==9)
    printf("September=30");
    if(y==10)
    printf("October=31");
    if(y==11)
    printf("November=30");
    if(y==12)
    printf("December=31");
}
```

13. Write a C program to count total number of notes in given amount.

```c
#include<stdio.h>
int main()
{
    int amount,a,b,c,d,e,f;
    printf("enter amount");
    scanf("%d",&amount);
    amount=amount-100;
    a=amount/2000;
    b=amount%2000;
    c=b/500;
    d=b%500;
    e=d/100;
    f=d%100;
    e=e+1;
    printf("\n2000 notes=%d\n500 notes=%d\n100 notes=%d\nothers=%d",a,c,e,f);
    return 0;
}
```

14. Write a C program to input angles of a triangle and check whether triangle is valid or not.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int a,b,c;
    printf("Enter the three angles of triangles\n");
    scanf("%d %d%d",&a,&b,&c);
    if((a+b+c)==180)
    printf("The triangle is valid");
    else
    printf("Invalid triangle");
    return 0;
}
```

15. Write a C program to input all sides of a triangle and check whether triangle is valid or not.

```c
#include<stdio.h>
int main()
{
int a,b,c;
printf("enter 1st side of triangle=");
scanf("%d",&a);
printf("enter 2nd side of triangle=");
scanf("%d",&b);
printf("enter 3rd side of triangle=");
scanf("%d",&c);
if((a+b>c)&&(b+c>a)&&(c+a>b))
printf("triangle is valid");
else
printf("triangle is invalid");
return 0;
}
```

16. Write a C program to check whether the triangle is equilateral, isosceles or scalene triangle.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int a,b,c;
    printf("Enter the three angle of the triangle\n");
    scanf("%d%d%d",&a,&b,&c);
    if(a==b && b==c)
    printf("Equiliteral triangle");
    if((a==b)!=c || (b==c)!=a || (c==a)!=b)
    printf("Isosceles triangle");
    else
    printf("Scalen triangle");
    return 0;
}
```

17. Write a C program to find all roots of a quadratic equation.

```c
#include<stdio.h>
#include<math.h>
int main(int argc, char const *argv[])
{
    float a,b,c;
    printf("Ente the coefficient of quadratic equation\n");
    scanf("%f%f%f",&a,&b,&c);
    printf("Root of quadratic equation is %f",(-b+sqrt(b*b-4*a*c))/2*a);
    printf("Another Root of quadratic equation is %f",(-b-sqrt(b*b-4*a*c))/2*a);

    return 0;
}
```

18. Write a C program to calculate profit or loss.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int cp,sp,mp,d;float pp=0.0,lp=0.0;
    printf("Enter the cost price,selling price  and maintainance price:");
    scanf("%d %d %d",&cp,&sp,&mp);
    d=cp+mp;
    int p=sp-(cp+mp);
    int l=(cp+mp)-sp;
    if(p>0)
    {
        printf("profit of worth %d",p);
        pp=(p*100)/d;
        printf("The profit percentage =%f",pp);
    }
    else
    {
        printf("The loss of worth %d",l);
        lp=(l/d)*100;
        printf("The loss percentage=%f ",lp);
    }


    return 0;
}
```

19. Write a C program to input marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer. Calculate percentage and grade according to following:
    Percentage >= 90% : Grade A
    Percentage >= 80% : Grade B
    Percentage >= 70% : Grade C
    Percentage >= 60% : Grade D
    Percentage >= 40% : Grade E
    Percentage < 40% : Grade F

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int ph,chem,com,mat,bio;
    printf("Enter the marks\n");
    scanf("%d%d%d%d%d",&ph,&chem,&com,&mat,&bio);
    float per=(ph+chem+com+mat+bio)/5;
    if(per>=90)
    printf("Percentage=%f\nGrade=A",per);
    if(per>=80 && per<90)
    printf("Percentage=%f\nGrade=B",per);
    if(per>=70 && per<80)
    printf("Percentage=%f\nGrade=C",per);
    if(per>=60 && per<70)
    printf("Percentage=%f\nGrade=D",per);

    return 0;
}
```

20. Write a C program to input basic salary of an employee and calculate its Gross salary according to following:
    Basic Salary <= 10000 : HRA = 20%, DA = 80%
    Basic Salary <= 20000 : HRA = 25%, DA = 90%
    Basic Salary > 20000 : HRA = 30%, DA = 95%

```c
#include <stdio.h>

int main()
{
    float basic, gross, da, hra;
    printf("Enter basic salary of an employee: ");
    scanf("%f", &basic);
    if(basic <= 10000)
    {
        da  = basic * 0.8;
        hra = basic * 0.2;
    }
    else if(basic <= 20000)
    {
        da  = basic * 0.9;
        hra = basic * 0.25;
    }
    else
    {
        da  = basic * 0.95;
        hra = basic * 0.3;
    }
    gross = basic + hra + da;

    printf("GROSS SALARY OF EMPLOYEE = %.2f", gross);

    return 0;
}
```

21. Write a C program to input electricity unit charges and calculate total electricity bill according to the given condition:
    For first 50 units Rs. 0.50/unit
    For next 100 units Rs. 0.75/unit
    For next 100 units Rs. 1.20/unit
    For unit above 250 Rs. 1.50/unit
    An additional surcharge of 20% is added to the bill

```c
#include<stdio.h>
void main()
{

    float u,ec,tax,total;
    scanf("%d",&u);
    if(u<=100)
    {
        ec=u*2;
        tax=ec*10/100;
        total=ec+tax;
    }
    if(u>100 && u<=200)
    {
        ec=100*2;
        u=u-100;
        ec+=u*3.50;
        tax=ec*10/100;
        total=ec+tax;
    }
    if(u>200)
    {
        ec=100*2;
        ec+=100*3.50;
        u=u-200;
        ec+=u*4.50;
        tax=ec*10/100;
        total=ec+tax;
    }
    printf("The total due bill is=%f",total);
}
```

Switch case programming

1. Write a C program to print day of week name using switch case.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int ch;
    printf("Enter the number of your choice");
    scanf("%d",&ch);
    switch(ch)
    {
        case 1:
        printf("Sunday");
        break;
        case 2:
        printf("Monday");
        break;
        case 3:
        printf("Tuesday");
        break;
        case 4:
        printf("Wednesday");
        break;
        case 5:
        printf("Thursday");
        break;
        case 6:
        printf("Friday");
        break;
        case 7:
        printf("Saturday");
        break;
    }
    return 0;
}
```

2. Write a C program print total number of days in a month using switch case.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int ch;
    printf("Enter the number of your choice");
    scanf("%d",&ch);
    switch(ch)
    {
        case 1:
        printf("January=31");
        break;
        case 2:
        printf("February=28/29");
        break;
        case 3:
        printf("March=31");
        break;
        case 4:
        printf("april=30");
        break;
        case 5:
        printf("May=31");
        break;
        case 6:
        printf("june=30");
        break;
        case 7:
        printf("july=31");
        break;
         case 8:
        printf("August=31");
        break;
         case 9:
        printf("September=30");
        break;
         case 10:
        printf("October=31");
        break;
         case 11:
        printf("November=30");
        break;
         case 12:
        printf("December=31");
        break;
    }
    return 0;
}
```

3. Write a C program to find maximum between two numbers using switch case.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int a,b;
    printf("Enter the number \n");
    scanf("%d%d",&a,&b);
    switch(a>b)
    {
        case 0:
        printf("B is greater");
        break;
        case 1:
        printf("A is greater");
        break;
    }
    return 0;
}
```

4. Write a C program to check whether a number is even or odd using switch case.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int a;
    printf("Enter the number \n");
    scanf("%d",&a);
    switch(a%2)
    {
        case 0:
        printf("Even");
        break;
        case 1:
        printf("Odd");
        break;
    }
    return 0;
}
```

5. Write a C program to create Simple Calculator using switch case.

```c
#include<stdio.h>
int main(int argc, char const *argv[])
{
    int ch;
    printf("Enter the number of your choice\n");
    printf("1.Sum\n2.Difference\n3.Divide\n4.Product");
    scanf("%d",&ch);
    switch(ch)
    {
        case 1;
        {
            int a,b;
            printf("Enter the value of a and b\n");
            scanf("%d%d",&a,&b);
            printf("Sum=%d",a+b);
            break;
        }
        case 2;
        {
            int a,b;
            printf("Enter the value of a and b\n");
            scanf("%d%d",&a,&b);
            printf("Difference=%d",a-b);
            break;
        }
        case 3;
        {
            int a,b;
            printf("Enter the value of a and b\n");
            scanf("%d%d",&a,&b);
            printf("Divide=%d",a/b);
            break;
        }
        case 4;
        {
            int a,b;
            printf("Enter the value of a and b\n");
            scanf("%d%d",&a,&b);
            printf("Product=%d",a*b);
            break;
        }
    }
    return 0;
}
```

6. Write a C program to find roots of a quadratic equation using switch case.

```c
#include <stdio.h>
#include <math.h>

int main()
{
    float a, b, c;
    float root1, root2, imaginary;
    float discriminant;

    printf("Enter values of a, b, c of quadratic equation (aX^2 + bX + c): ");
    scanf("%f%f%f", &a, &b, &c);
    discriminant = (b * b) - (4 * a * c);
    switch(discriminant > 0)
    {
        case 1:
            root1 = (-b + sqrt(discriminant)) / (2 * a);
            root2 = (-b - sqrt(discriminant)) / (2 * a);

            printf("Two distinct and real roots exists: %.2f and %.2f",
                    root1, root2);
            break;

        case 0:
            switch(discriminant < 0)
            {
                case 1:
                    root1 = root2 = -b / (2 * a);
                    imaginary = sqrt(-discriminant) / (2 * a);

                    printf("Two distinct complex roots exists: %.2f + i%.2f and %.2f -
i%.2f",
                            root1, imaginary, root2, imaginary);
                    break;

                case 0:
                    root1 = root2 = -b / (2 * a);

                    printf("Two equal and real roots exists: %.2f and %.2f", root1,
root2);

                    break;
            }
    }

    return 0;
}
```