1. Write a program in C++ to print "Hello World".

```
#include <iostream.h>
#include <conio.h>
void main()
 {
clrscr();
cout << "Hello World";
getch();
}
```

Output

Hello World

2. Write a program in C++ to display your name address and city in different lines.

```
#include <iostream.h>
#include <conio.h>
void main()
 {
clrscr();
cout << "Name:" << endl;
cout << "Address: \n";
 cout << "City: ";
getch();
}
```

Output

Name:

Address:

City:

3. Write a program in C++ to display all Arithmetic operators without using input function.

```
#include <iostream.h>
 #include <conio.h>
void main()
 {
clrscr();
int a = 20, b = 10;
 cout << "Values: a = " << a << ", b = " << b << endl;
 cout << "Addition(a + b):: " << a + b << endl;
 cout << "Subtraction(a- b):: " << a - b << endl;
 cout << "Multiplication(a* b):  : " << a * b << endl;
 cout << "Division(a/ b):: " << a / b << endl;
cout << "Modulus(a% b):: " << a %b;
 getch();
}
```

Output

```
Values: a = 20, b = 10
 Addition (a + b): 30
 Subtraction (a - b): 10
 Multiplication (a * b): 200
Division (a / b): 2
Modulus (a % b): 0
```

4. Write a program in C++ to display all Arithmetic operators using input function.

```
#include <iostream.h>
#include <conio.h>
void main()
```

```
{
clrscr();
int a, b;
cout << "Enter the first number : ";
cin >> a;
cout << "Enter the second number: ";
cin >> b;
cout << "\nArithmetic Operations:" << endl;
cout << "Addition (a + b): " << a + b << endl;
cout << "Subtraction (a - b): " << a - b << endl;
cout << "Multiplication (a * b): " << a * b << endl;
if (b != 0)
{
cout << "Division (a / b): " << a / b << endl;
cout << "Modulus (a % b): " << a % b << endl;
}
Else
{
cout << "Division and Modulus are not possible as b is 0." << endl;
}
getch();
}
```

output

```
Enter the first number: 20
Enter the second number: 5
Arithmetic Operations:
Addition (a + b): 25
Subtraction (a - b): 15
```

Multiplication (a * b): 100

Division (a / b): 4

Modulus (a % b): 0

5. Write a program in C++ to display swapping of two numbers using third variable.

```
#include <iostream.h>
#include <conio.h>
void main()
 {
    clrscr();
    int a, b, swap;
     cout << "Enter the first number: ";
    cin >> a;
    cout << "Enter the second number : ";
    cin >> b;
   cout << "\nBefore Swapping:" << endl;
    cout << "a = " << a << ", b = " << b << endl;
   swap = a;
    a = b;
    b =  swap;
    cout << "\nAfter Swapping:" << endl;
    cout << "a = " << a << ", b = " << b ;
    getch();
}
```

Output

Enter the first number: 15

Enter the second number: 30

Before Swapping: a = 15, b = 30

After Swapping: a = 30, b = 15

6. Write a program in C++ to display swapping of two numbers without using third variable.

```
#include <iostream.h>
#include <conio.h>
void main()
{
   clrscr();
   int a, b;
   cout << "Enter the first number: ";
   cin >> a;
   cout << "Enter the second number: ";
   cin >> b;
   cout << "\nBefore Swapping:" << endl;
   cout << "a = " << a << ", b = " << b << endl;
   a = a + b;
   b = a - b;
   a = a - b;
   cout << "\nAfter Swapping:" << endl;
   cout << "a = " << a << ", b = " << b << endl;
   getch();
}
```

Output

Enter the first number: 5

Enter the second number: 10

Before Swapping:

a = 5, b = 10

After Swapping:

a = 10, b = 5

7. Write a program in C++ to calculate area of a circle using formula.

```
// Calculate the area using the formula Area = π * r^2


#include <iostream.h>
#include <conio.h>
 void main()
{
   clrscr();
    float  radius, area,pi=3.14;
   cout << "Enter the radius of the circle: ";
   cin >> radius;
    area = pi * radius * radius;
   cout << "\nThe area of the circle is: " << area;
   getch();
}
```

Output

```
Enter the radius of the circle: 7
The area of the circle is: 153.938
```

8. Write a program in C++ to calculate simple interest.

```
#include <iostream.h>
#include <conio.h>
void main()
{
   clrscr();
   float principal, rate, time, simpleInterest;
   cout << "Enter the Principal amount (P): ";
   cin >> principal;
```

```
   cout << "Enter the Rate of Interest (R): ";
   cin >> rate;
   cout << "Enter the Time (T) in years: ";
   cin >> time;
    simpleInterest = (principal * rate * time) / 100;
   cout << "\nSimple Interest = " << simpleInterest << endl;
   getch();
}
```

Output

```
Enter the Principal amount (P): 55000
Enter the Rate of Interest (R): 2
 Enter the Time (T) in years: 5
simple interest=5500
```

9. Write a program in C++ to calculate compound interest.

```
#include <iostream.h>
#include <conio.h>
#include <math.h>
void main()
 {
   clrscr();
   float principal, rate, time, amount, ci;
   cout << "Enter Principal Amount: ";
   cin >> principal;
   cout << "Enter Rate of Interest (in %): ";
   cin >> rate;
   cout << "Enter Time (in years): ";
   cin >> time;
   amount = principal * pow((1 + rate / 100), time);
```

```
   ci= amount - principal;
   cout << "\nFinal Amount: " << amount;
   cout << "\nCompound Interest: " <<ci;
   getch();
}
```

output

```
Enter Principal Amount: 1000
Enter Rate of Interest (in %): 5
Enter Time (in years): 3
Final Amount: 1157.63
Compound Interest: 157.63
```

10. Write a program in C++ to accept length and width of rectangle display Area and perimeter of rectangle.

```
#include <iostream.h>
#include <conio.h>

void main()
 {
   clrscr();
   float length, width, area, perimeter;
   cout << "Enter Length of Rectangle: ";
   cin >> length;
   cout << "Enter Width of Rectangle: ";
   cin >> width;
   area = length * width;
   perimeter = 2 * (length + width);
   cout << "\nArea of Rectangle: " << area;
```

```
    cout << "\nPerimeter of Rectangle: " << perimeter;
    getch();
}
```

output

```
Enter Length of Rectangle: 10
Enter Width of Rectangle: 5
Area of Rectangle: 50
Perimeter of Rectangle: 30
```

11. Write a program in C++ to display find out area and perimeter of square.

```
#include <iostream.h>
#include <conio.h>
void main()
{
 clrscr();
    float side, area, perimeter;
    cout << "Enter Side of Square: ";
    cin >> side;
    area = side * side;
    perimeter = 4 * side;
    cout << "\nArea of Square: " << area;
    cout << "\nPerimeter of Square: " << perimeter;
    getch();
}
```

output

```
Enter Side of Square: 6
Area of Square: 36
Perimeter of Square: 24
```

12. Write a program in C++ to input number check it number is even or odd.

```
#include <iostream.h>
#include <conio.h>
void main()
 {
 clrscr();
 int number;
 cout << "Enter a Number: ";
  cin >> number;
    if (number % 2 == 0)
       cout << "\nThe number " << number << " is Even.";
    else
       cout << "\nThe number " << number << " is Odd.";
    getch();
}
```

output

```
Enter a Number: 7
The number 7 is Odd.
```

13. Write a program in C++ to input 2 number find out the greatest number.

```
#include <iostream.h>
#include <conio.h>
void main() {
    clrscr();
    int num1, num2;
    cout << "Enter First Number: ";
    cin >> num1;
    cout << "Enter Second Number: ";
```

```
    cin >> num2;
    if (num1 > num2)
        cout << "\nThe Greatest Number is: " << num1;
    else if (num2 > num1)
        cout << "\nThe Greatest Number is: " << num2;
    else
        cout << "\nBoth Numbers are Equal.";
    getch();
 }
```

output

```
Enter First Number: 7
Enter Second Number: 7
Both Numbers are Equal.
```

14. Write a program in C++ to input 3 number find out the greatest number.

```
#include <iostream.h>
#include <conio.h>
void main()
 {
    clrscr();
    int num1, num2, num3;
    cout << "Enter First Number: ";
    cin >> num1;
    cout << "Enter Second Number: ";
    cin >> num2;
    cout << "Enter Third Number: ";
    cin >> num3;
    if (num1 > num2 && num1 > num3)
```

```
    cout << "\nThe Greatest Number is: " << num1;
  else if (num2 > num1 && num2 > num3)
    cout << "\nThe Greatest Number is: " << num2;
  else if (num3 > num1 && num3 > num2)
    cout << "\nThe Greatest Number is: " << num3;
  else
    cout << "\nAll Numbers are Equal.";
  getch();
 }
```

Output

```
Enter First Number: 7
Enter Second Number: 12
Enter Third Number: 9
The Greatest Number is: 12
```

15. Write a program in C++ to input year check it leap year or not leap year.

```
#include <iostream.h>
#include <conio.h>
void main()
{
  clrscr();  // Clear screen (Turbo C++ specific)
  int year;
  cout << "Enter a Year: ";
  cin >> year;
  if ((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0))
    cout << "\nThe Year " << year << " is a Leap Year.";
  else
    cout << "\nThe Year " << year << " is NOT a Leap Year.";
  getch();
```

```
}
```

Output

```
Enter a Year: 1900
The Year 1900 is NOT a Leap Year.
```

16. Write a program in C++ to input 3 number find out the highest number used nested if.

```
#include <iostream.h>
#include <conio.h>
void main() {
   clrscr();
   int num1, num2, num3;
   cout << "Enter First Number: ";
   cin >> num1;
   cout << "Enter Second Number: ";
   cin >> num2;
   cout << "Enter Third Number: ";
   cin >> num3;
   // Checking the highest number using nested if
   if (num1 > num2) {
      if (num1 > num3)
         cout << "\nThe Highest Number is: " << num1;
      else
         cout << "\nThe Highest Number is: " << num3;
   }
   else {
      if (num2 > num3)
         cout << "\nThe Highest Number is: " << num2;
      else
         cout << "\nThe Highest Number is: " << num3;
```

```
  }
  if (num1 == num2 && num2 == num3)
     cout << "\nAll Numbers are Equal.";
  getch();
 }
```

Output

```
Enter First Number: 4
Enter Second Number: 6
Enter Third Number: 20
The Highest Number is: 20
```

17. Write a program in C++ to input a character check it vowel or consonants.

```
#include <iostream.h>
#include <conio.h>
void main() {
   clrscr();
   char ch;
   cout << "Enter a Character: ";
   cin >> ch;
   if (ch >= 'A' && ch <= 'Z') {
      ch = ch + 32;  // Convert to lowercase
   }
   switch (ch) {
      case 'a':
      case 'e':
      case 'i':
      case 'o':
      case 'u':
         cout << "\nThe Character '" << ch << "' is a Vowel.";
```

```
            break;
        default:
            if ((ch >= 'a' && ch <= 'z'))
                cout << "\nThe Character '" << ch << "' is a Consonant.";
            else
                cout << "\nInvalid Input! Please enter an alphabet.";
    }
    getch();
}
```

OR

```
#include <iostream>
#include <conio.h>
int main()
 {
    //clrscr();
    char ch;
    cout << "Enter a Character: ";
    cin >> ch;
        switch (ch) {
        case 'a':
        case 'e':
        case 'i':
        case 'o':
        case 'u':
      case 'A':
        case 'B':
        case 'I':
        case 'O':
```

```
    case 'U':
      cout << "\nThe Character '" << ch << "' is a Vowel.";
      break;
    default:
        cout << "\nThe Character '" << ch << "' is a Consonant.";
  getch();
}
```

output

```
Enter a Character: k
The Character 'k' is a Consonant.
```

17. Write a program in C++ to input binary number check it number is even or odd.

```
#include <iostream.h>
#include <conio.h>
void main() {
  clrscr();
  long long binary;
  cout << "Enter a Binary Number: ";
  cin >> binary;
  if (binary % 10 == 0)
    cout << "\nThe Binary Number " << binary << " is Even.";
  else
    cout << "\nThe Binary Number " << binary << " is Odd.";
  getch();
}
```

output

```
Enter a Binary Number: 1101
The Binary Number 1101 is Odd.
```