1. WRITE A PROGRAM to print Hello World.

```
#include <iostream>
using namespace std;

int main()
{
   cout << "Hello World!!!";
   return 0;
}
```

2. WRITE A PROGRAM for addition of 2 numbers.

```
#include <iostream>
using namespace std;

int main()
{
   int a, b;
   cout << "Enter first and second number: ";
   cin >> a >> b;
   cout << "Addition: " << a + b;
   return 0;
}
```

3. WRITE A PROGRAM to find factorial of a number.

```
#include <iostream>
using namespace std;

int main()
{
```

```
    int num, fact=1;
    cout << "Enter the number: ";
    cin >> num;
    for (int i = 1; i <= num; i++)
    {
       fact *= i;
    }
    cout << "Factorial: " << fact;
    return 0;
}
```

4. WRITE A PROGRAM for calculator using switch.

```
#include<iostream>
using namespace std;

int main(){
int num1,num2,res,ch;
cout<<"Enter the First Value: ";
cin>>num1;
cout<<"Enter the Second Value: ";
cin>>num2;
cout<<"Enter '1' for Addition, Enter '2' for Subtraction, Enter '3' for Multiplication , Enter '4' for Division: ";
cin>>ch;
switch (ch)
{
case 1:
  res=num1+num2;
  cout<<"Addition: "<<res;
   break;
```

```
case 2:
  res=num1-num2;
  cout<<"Subtraction: "<<res;
   break;
case 3:
  res=num1*num2;
  cout<<"Multiplication: "<<res;
   break;
case 4:
  res=num1/num2;
  cout<<"Division: "<<res;
   break;

default:
cout<<"Invalid Choice"<<endl;
   break;
}
return 0;
}
```

5. WRITE A PROGRAM for mathematical table.

```
#include <iostream>
using namespace std;

int main()
{
   int num, res;
   cout << "Enter the number: ";
   cin >> num;
```

```
    cout << "Table of " << num << " is:\n";
    for (int i = 1; i <= 10; i++)
    {
        res = i * num;
        cout << num << " * " << i << " = " << res << endl;
    }
    return 0;
}
```

6. WRITE A PROGRAM for voting age less than 18 , not applicable.

```
#include<iostream>
using namespace std;

int main(){
int age;
cout<<"Enter the age: ";
cin>>age;
if(age<18){
    cout<<"Person is not eligible to vote"<<endl;
}
else{
cout<<"Person is eligible to vote"<<endl;
}
return 0;
}
```

7. WRITE A PROGRAM of swapping of using call by reference.

```
#include <iostream>
```

```
using namespace std;

// Call by reference
void swap(int &x, int &y)
{
   int temp = x;
   x = y;
   y = temp;
}
int main()
{
   int num1;
   int num2;
   cout << "Enter the values of both the numbers" << endl;
   cin >> num1 >> num2;
   swap(num1, num2);
   cout << "After swapping" << endl;
   cout << "Num1: " << num1 << endl;
   cout << "Num2: " << num2;
   return 0;
}
```

8. WRITE A PROGRAM to multiply two numbers using pointers.

```
#include <iostream>
using namespace std;

int product(int &a, int &b)
{
   int *num1 = &a, *num2 = &b;
   return ((*num1) * (*num2));
```

```
}
int main()
{

   cout << "Enter the both values: ";
   int n1, n2;
   cin >> n1 >> n2;
   cout << "Product: " << product(n1, n2) << endl;

   return 0;
}
```

9. WRITE A PROGRAM to show the memory occupied by Structure and Union. Create enumerated data type for 7 days

```
#include <iostream>
using namespace std;
struct apna
{
   int i, age;
   double yes;
};
union sapna
{
   int one;
   double abc;
};

enum week
{
   Monday,
```

```
    Tuesday,
    Wednesday,
    Thursday,
    Friday,
    Saturday,
    Sunday
};
int main()

{
    cout << "The size of the union: " << sizeof(sapna) << endl;
    cout << "The size of the structure: " << sizeof(apna) << endl;
    cout << "The size of the Enum: " << sizeof(week) << endl;

    return 0;
}
```

10. WRITE A PROGRAM to store value in variable b and print that value.

```
#include <iostream>
using namespace std;

int main()
{
    int num1 = 120;
    int &b = num1;
    cout << "Value from the actual variable: " << num1 << endl;
    cout << "Value from b variable: " << b << endl;

    return 0;
```

```
}
```

11. WRITE A PROGRAM to print student details.

```
#include <iostream>
#include <string>
using namespace std;

int main()
{
   string name, phone_no, course, batch, address, dob, father_name, roll_no;

   cout << "\t\t\t\t\tEnter the details of the student";
   cout << "\nEnter the name of the student: ";
   getline(cin, name);
   cout << "Enter the Roll Number of the student: ";
   getline(cin, roll_no);
   cout << "Enter the Course of the student: ";
   getline(cin, course);
   cout << "Enter the Batch of the student: ";
   getline(cin, batch);
   cout << "Enter the Date of Birth of the student: ";
   getline(cin, dob);
   cout << "Enter the Father's name of the student: ";
   getline(cin, father_name);
   cout << "Enter the Address of the student: ";
   getline(cin, address);

   cout << "\n\n\t\t\t\t\tDetails of the student\n";
   cout << "Name: " << name << endl;
```

```
    cout << "Roll Number: " << roll_no << endl;
    cout << "Course: " << course << endl;
    cout << "Batch: " << batch << endl;
    cout << "Father's Name: " << father_name << endl;
    cout << "Date of Birth: " << dob << endl;
    cout << "Address: " << address << endl;

    return 0;
}
```

12. Write a program that uses a class where the member functions are defined inside a class.

```
#include <iostream>
#include <string>
using namespace std;
class car
{
private:
    string car_name, car_num;

public:
    void getData()
    {
        cout << "Enter Car number: ";
        getline(cin, car_num);
        cout << "\nEnter Car name: ";
        getline(cin, car_name);
    }
    void displayData()
    {
```

```
        cout<<"Car Name: "<<car_num<<endl;
        cout<<"Car Number: "<<car_name<<endl;
    }
};
int main()
{
car p;
p.getData();
p.displayData();
    return 0;
}
```

13. Write a program that uses a class where the member functions are outside a class.

```
#include <iostream>
#include <string>
using namespace std;
class car
{
private:
    string car_name, car_num;

public:
    void getData();

    void displayData();

};
int main()
{
car p;
p.getData();
p.displayData();
    return 0;
}

void car::getData()
    {
```

```
    cout << "Enter Car number: ";
    getline(cin, car_num);
    cout << "\nEnter Car name: ";
    getline(cin, car_name);
}
void car::displayData()
{
    cout<<"Car Name: "<<car_num<<endl;
    cout<<"Car Number: "<<car_name<<endl;
}
```