Basic

```
// Armstrong number is a number that is equal to the sum of cubes of its digits. For example 0, 1, 153, 370, 371 and 407 are the Armstrong numbers.

// A palindrome number is a number that is same after reverse. For example 121, 34543, 343, 131, 48984 are the palindrome numbers.

#include<iostream>
using namespace std;
bool armstong(int num){
    int temp=num,sum=0,mod;
    while (num>0)
    {
        //take last digit
        mod=num%10;
        sum+=(mod*mod*mod);
        //remove last digit
        num/=10;
    }
    if(temp==sum){
        return true;
    }
    return false;
}
int main(){
    int num;
    cout<<"enter Your Number:-";
    cin>>num;
    if(armstong(num)){
        cout<<"Your Number "<<num<<" is palindrome number";
    }
    else{
        cout<<"Your Number "<<num<<" is not palindrome number";
    }
    return 1;
}

//fibinaco-recursion
#include<iostream>
using namespace std;
void fibo(int num){
   static int first=0,second=1,sum=0;
    if(num>0){
        sum=first+second;
        first=second;
        second=sum;
        cout<<sum<<" ";
        fibo(num-1);
    }
}
int main(){
    int num;
    cout<<"enter Your Number:-";
    cin>>num;
    cout<<"0 1 ";
    fibo(num-2);
    return 1;
}

//0,1,0+1=1,1+1=2,1+2=3,2+3=5.......
#include<iostream>
using namespace std;
void fibo(int num){
    int first=0,second=1,sum=0;
    num-=2;
    cout<<first<<" "<<second<<" ";
    while (num>0)
    {
        sum=first+second;
        cout<<sum<<" ";
        first=second;
        second=sum;
        num--;
    }

}
int main(){
    int num;
    cout<<"enter Your Number:-";
    cin>>num;
    fibo(num);
    return 1;
}

// A palindrome number is a number that is same after reverse. For example 121, 34543, 343, 131, 48984 are the palindrome numbers.
#include<iostream>
using namespace std;
bool palindrome(int num){
    int temp=num,sum=0,mod;
    while (num>0)
    {
        //take last digit
        mod=num%10;
        sum=(sum*10)+mod;

        //remove last digit

        num/=10;

    }

    if(temp==sum){

        return true;

    }

    return false;

}

int main(){

    int num;

    cout<<"enter Your Number:-";

    cin>>num;

    if(palindrome(num)){

        cout<<"Your Number "<<num<<" is palindrome number";

    }

    else{

        cout<<"Your Number "<<num<<" is not palindrome number";

    }

    return 1;

}// Prime number is a number that is greater than 1 and divided by 1 or itself. In other words, prime numbers can't be divided by other numbers than itself or 1. For example 2, 3, 5, 7, 11, 13, 17, 19, 23.... are the prime numbers.

#include<iostream>

#include<vector>

using namespace std;

void prime(int num){

    int range,temp=1;

    range=num/2;

    for(int i=2;i<=range;i++){

        if(num%i==0){

            cout<<"Your Number "<<num<<" is not prime number"<<endl;
            temp=0;
            break;
        }
    }
    if(temp){
        cout<<"Your Number "<<num<<" is prime number"<<endl;
    }
}
int main(){
    int num;
    cout<<"enter Your Number:-";
    cin>>num;
    prime(num);
    return 1;
}

//print number to n
#include<iostream>
using namespace std;

void print(int N){
    if(N==1){
        cout<<N<<" ";
        return;
    }
    print(N-1);
    cout<<N<<" ";
}

int main(){
    print(10);
    return 1;
}

//Factorial

#include<iostream>
using namespace std;

int fact(int N){

    if(N==1){
        return 1;
    }
    return N*fact(N-1);
}

int main(){
    cout<<fact(5);
    return 1;
}
//sum of N number

#include<iostream>
using namespace std;

int sum(int N){

    if(N==1){
        return 1;
    }
    return N + sum(N-1);
```

```
}

int main(){
    cout<<sum(5);
    return 1;
}

//power n ^ N time

#include<iostream>
using namespace std;

int pow(int n,int N){

    if(N==1){
        return n;
    }
    return n * pow(n,N-1);
}

int main(){
    cout<<pow(3,5);
    return 1;
}


//Sum of squre of N nuumber

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

```
int sum_sq(int N){


   if(N==1){
       return 1;
   }


   return (N*N) + sum_sq(N-1);
}


int main(){
   cout<<sum_sq(5);
   return 1;
}
```

Array

```
//https://www.naukri.com/code360/problems/merge-two-sorted-arrays-without-extra-space_6898839


#include <iostream>
#include <vector>
#include <algorithm>
using namespace std;


class Solution
{
public:
    void s(vector<int>& nums1, vector<int>& nums2)
    {
```

```
    int m = nums2.size();
    for (int i = 0; i < m; i++)
    {
      nums1.push_back(nums2[i]);
    }
    sort(nums1.begin(),nums1.end());
  }
};

int main(){
  vector<int> nums1={2,3,4,5};
  vector<int> nums2={1,3,4,8,8};
  Solution obj;
  obj.s(nums1,nums2);
  for(auto i:nums1){
    cout<<i<<endl;
  }
  return 1;
}
nums1.push_back(nums1[0]);
      nums1.erase(nums1.begin()+0);

//print all sub array from original array
#include <iostream>
#include<vector>
using namespace std;
int main()
```

```
{
    vector<int> arr={1,2,3,4,5};
    vector<vector<int>> sub_array;
    vector<int> temp;
    int n=arr.size();
    for(int i=0;i<n;i++){
        for(int j=i;j<n;j++){
            for(int k=i;k<=j;k++){
                temp.push_back(arr[k]);
            }
            sub_array.push_back(temp);
            temp.pop_back();
        }
    }
    for(auto i:sub_array){
        for(auto j:i){
            cout<<j<<" ";
        }
        cout<<endl;
    }
    cout<<sub_array.size();
    return 0;
}

//print max sum of sub array from original array
#include <iostream>
#include<climits>
```

```
using namespace std;

int main()

{

    int k[5]={1,2,3,4,5},sum=0,mx=-19999;

    for(int i=0;i<5;i++){

        for(int j=i;j<5;j++){

            sum=0;

            for(int ke=i;ke<=j;ke++){

                sum+=k[ke];

            }

            mx=max(mx,sum);

        }

    }

    cout<<mx;

    return 0;

}

//Subarray:-Continue part of array if Size is n so, Possiable sub-array is n*(n-1)/2;

//Que:-print Sum Of Each Subarray

#include<iostream>

using namespace std;

int main(){

    int n,sum=0,sa=1;

    cout<<"Enter Array size=";

    cin>>n;

    int k[n];

    cout<<"enter Your "<<n<<" elements for array";

    for(int i=0;i<n;i++){
        cin>>k[i];
    }
    for(int i=0;i<n;i++){

        for(int j=i;j<n;j++){
            sum+=k[j];
            cout<<"subarray "<<sa<<" and sum is "<<sum<<endl;
            sa+=1;
        }
        sum=0;
    }
    return 0;
}
// https://www.geeksforgeeks.org/reverse-words-given-string-python/

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

int main(){
    string k="geeks quiz practice code";
    int r=k.length(),l=k.length();
    while(l>=-1){
        if(k[l]==' ' || l==-1){
            for(int i=l+1;i<=r;i++){
                cout<<k[i];
            }
            cout<<" ";
            r=l-1;
        }
        l--;
    }
    return 1;
}
```