1. Find Max number among three

```
#include <iostream>
int main()
{
	inta,b,c;
	cout<<"Enter your first number: ";
	cin>>a;
	cout<<"Enter your second number: ";
	cin>>b;
	cout<<"Enter your third number: ";
	cin>>c;
	if(a>b)
	 {
		if(a>c)
		cout<<"A is larger";
		else
		cout<<"C is larger";
	 }
	else
	{
		if(b>c)
		cout<<"B is larger";
		else
		cout<<"C is larger";
	}
	return 0;
}
```

2. Find MIN MAX value

```
#include <iostream>
using namespace std;
int main()
{
	intmax,min,n,i,j;
	cout<<"How many number you want to enter: ";
	cin>>n;
	int a[n];
	for(i=0;i<n;i++)
	     cin>>a[i];
	min=a[0];
	max=a[0];
	for(j=1;j<n;j++)
	{
	if(a[j]<min)
	   min=a[j];
	if(a[j]>max)
	   max=a[j];
	}
	cout<<"Max number is :"<<max<<endl;
	cout<<"min number is :"<<min;
	return 0;
}
```

3. Find prime number of not

```
#include <iostream>
using namespace std;
int main()
{
inti, num, key=0;
cout<< "Enter the number: ";

cin>>num;
for(i=2;i<num/2;i++)
 {
       if(num%i==0)
       key=1;
       break;
 }
if(key==0)
   {
       cout<<num<<" "<<" is prime Numer";
       }
       else
       {
       cout<<num<<" "<<"is Not Prime Numer";
       }

return 0;
}
```

1. Print prime number (1 to N)

```
#include<iostream>
using namespace std;
int main()
{
	intn,i,j;
	cout<<"Enter how many number you want: ";
	cin>>n;
	for(i=2;i<n;i++)
	{
	int key=1;
	for(j=2;j<i/2;j++)
	    {
	       if(i%j==0)
	        {
	              key=0;
	       break;
	              }
	        }
if(key==1)
	cout<<i<<" ";
	}
	//cout<<"haider";
	return 0;
}
```

2. Print and Sum of Fibonacci series.

1+1+2+3+5+8+13+21+34+…….+n

```
#include <iostream>
using namespace std;
int main()
{
	inti,n,sum=0;
	cout<<"Enter how many number you want...";
	cin>>n;
	int a[n];
	a[0]=0;
	a[1]=1;
	for(i=2;i<=n;i++)
	{
		a[i]=a[i-2]+a[i-1];
		cout<<a[i]<<endl;
		sum=sum+a[i];
	}
	cout<<"The sum is: "<<sum;
	return 0;
}
```

3. Find the sum of 2+4+6+……..+98+100

```
#include<iostream.h>
#include<conio.h>
Void main()
{
Int I, sum=0;
For(i=2;i<=100;i=i+2)
Sum=sum+i;
Cout<<”the output of sum is: ”<<sum;
}
```

4. **Sum of a Series – 1+1/1! + ½! + 1/3! + ¼! +**

```
……
#include<stdio.h>
void main(){
int i,j,n;
float fact,sum=1;
printf("Please enter n:");
scanf("%d",&n);
for(i=1;i<=n;i++){
fact=1;
for(j=1;j<=i;j++)
fact=fact*j;
sum=sum+1/fact;
}
printf("Sum is:%f",sum);
getch();
}
```

5. **Area of Circle –**

```
#include<stdio.h>
#define PI 3.1415
void main(){
int radius;
float area;
printf("Please enter radius of circle:");
scanf("%d",&radius);
area= PI*radius*radius;
printf("Area of Circle is:%f",area);
getch();
}
```

6. **Area of Triangle –**

```
#include<stdio.h>
#include<math.h>
void main(){
float a,b,c,area,s;
printf("Enter a,b and c:\n");
scanf("%f %f %f",&a,&b,&c);
s=((a+b+c)/2);
printf("\na=%f,b=%f,c=%f,s=%f\n",a,b,c,s);
area=sqrt((s-a)*(s-b)*(s-c)*s);
printf("Area of Triangle is:%f",area);
getch();
}
```

7. Linear search program in C

```
#include <stdio.h>
int main()
{
  int array[100], search, c, n;
  printf("Enter number of elements in array\n");
  scanf("%d", &n);
  printf("Enter %d integer(s)\n", n);
  for (c = 0; c < n; c++)
    scanf("%d", &array[c]);
  printf("Enter a number to search\n");
  scanf("%d", &search);
for (c = 0; c < n; c++)
  {
    if (array[c] == search)    /* If required element is found */
    {
      printf("%d is present at location %d.\n", search, c+1);
      break;
    }
  }
  if (c == n)
    printf("%d isn't present in the array.\n", search);
  return 0;
}
```

8. Binary Search (Exameple: 2 7 10 15 30 40 50)

```
 #include <iostream>
int main()
{
        int first, last, mid,n;
        cout<<"How many number: ";
        cin>>n;
        int a[n];
        cout<<"Enter the "<<n<<" numbers: ";
        for(int i=0;i<n;i++)
            cin>>a[i];
        first=0;
        last=n-1;
        mid=(first+last)/2;
        cout<<"Enter the number to search: ";
        int search;
        cin >>search;
    while (first<=last){
        if(a[mid]<=search)
                {
                        if(a[mid]==search)
                        {
                                cout<<"The number is found in location:"<<mid+1;
                                break;
                        }
                        else
                           first=mid+1;
                }
                else
                 {
                        last=last-1;
                 }
         mid=(first+last)/2;
        }
        if(first>last)
          cout<<"The number is not found in list!";
   return 0;
}
```

9. Bubble Sort

```
#include<iostream>
using namespace std;
int main()
{
intn,i,j,k,temp;
cout<<"How many number you want to enter: ";
cin>>n;
intnum[n];
cout<<"Enter your numbers: "<<endl;
for(i=0;i<n;i++)
cin>>num[i];
for(j=0;j<n;j++)
for(k=0;k<n;k++)
      {
       if(num[k]>num[k+1])
         {
              temp=num[k];
              num[k]=num[k+1];
              num[k+1]=temp;
               }
         }
cout<<"The sorted numbers are: "<<endl;
for(i=0;i<n;i++)
cout<<num[i]<<" ";
return 0;
}
```

10. Conversion Decimal to Binary

```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
 {
      Int dec,i=0, j, num[30];
      cout<<"Enter the decimal number: ";
      cin>>dec;
      while(dec!=0)
      {
            num[i]=dec%2;
            dec=dec/2;
            i++;
       }
      for(j=i-1;j>=0;j--)
      cout<<num[j];
      return 0;
 }
```

11. Palindrome or not (Number)

```
#include <stdio.h>
int main()
{
int n, reverse = 0, temp;
printf("Enter a number to check if it is a palindrome or
not\n");
scanf("%d",&n);
temp = n;
while( temp != 0 )
  {
      reverse = reverse * 10;
      temp = temp/10;
      reverse = reverse + temp%10;
  }
if ( n == reverse )
printf("%d is a palindrome number.\n", n);
else
printf("%d is not a palindrome number.\n", n);

return 0;
}
```

12. **Reverse a number: -**

```
#include <stdio.h>
int main()
{
int num, reverse = 0, temp;
printf("Enter a number to reverse:  \n");
scanf("%d",&num);
while( num != 0 )
  {
   reverse = reverse * 10;
   num = temp/10;
   reverse = reverse + num%10;
  }
printf("The Reverse string is: %d ", reverse);
return 0;
}
```

13. Palindrome String

```
#include <stdio.h>
#include <string.h>
using namespace std;
int main()
{
char a[10], name[10];
printf("Enter the name:");
scanf("%s",&name);
strcpy(a,name);
strrev(name);
if(strcmp(a,name)==0)
printf("This is Palindrome...");
else
printf("Not Palindrome");

return 0;
}
```

14. GCD and LCM

```
#include<iostream>
using namespace std;
int main()
{
	inta,b,temp,x,y,lcm;
	cout<<"Enter a & b ";
	cin>>a>>b;
	x=a;
	y=b;
	while(b!=0)
	{
		temp=b;
		b=a%b;
		a=temp;
	}
	lcm=x*y/a;
	cout<<"The gcd is: "<<a<<enld;
	cout<<"The lcm is: "<<lcm;
	return 0;
}
```

15. Factorial (Recursive)

```
#include <iostream>
using namespace std;
int fact(int a)
{
	if(a<=1)
	return 1;
	else
	return a*fact(a-1);
}
int main()
{
	intnum,result;
	cout<<"Enter your number: ";
	cin>>num;
	result=fact(num);
	cout<<"The factorial of "<<num<<"is "<<result;
	return 0;
}
```

16. String Swap

```
#include <stdio.h>
#include<conio.h>
#include<malloc.h>
#include<string.h>
int main()
{
  char first[100], second[100], temp[100];
  printf("Enter the first string \n");
  gets(first);
  printf("Enter the second string \n");
  gets(second);\
  //temp=(char*) malloc(100);
  strcpy(temp,first);
  strcpy(first,second);
  strcpy(second,temp);
  printf("First number is: %s \n", first);
  printf("second number is: %s \n", second);
   return 0;
}
```

17. Count the number of digits.

```
Int main()
{
    Int num, count=0;
    Cout<<”Enter the number”;
    Cin>>num;
    While(num!=0)
        {
            Num=num/10;
            Count++;
        }
    Cout<<”Total number of digits: ”<< count;
    Return 0;
}
```

18. Finding GPA using Switch case

```
#include <iostream>
int main()
{
	intmarks,grade;
	cout<<"What is your marks: ";
	cin>>marks;
	grade=marks/10;
	cout<<"\nYour average point is: "<<grade<<endl;
	switch(marks)
	{
		case 10: cout<<"You got Golden A+";
		break;
		case 9: cout<<"You got A+";
		break;
		case 8: cout<<"You got A+";
		break;
		case 7: cout<<"You got A-";
		break;
		case 6: cout<<"You got A";
		break;
		case 5: cout<<"You got B";
		break;
		case 4: cout<<"You got C";
		break;
		default: cout<<"You got F";
		break;
	}
	return 0;
}
```

19. Calculating Electric Bill

//unit tarrif
//0 to 100 1.20 taka per unit
//101 to 200 2 per taka unit
//201 to 300 3 per taka unit
//If bill exceed 300 taka then a surcharge of 15% will be charged

```
#include<iostream>
using namespace std;
int main()
{
	int unit;
	char name[20];
	doublecal,extra,total;
	cout<<"Enter Customer Name: ";
	cin>>name;
	cout<<"\nHow many units: ";
	cin>>unit;
	if(unit<=100)
	 {
		cal=unit*1.20;
	 }
	else if(unit<=300)
	 {
		cal=100*1.20+(unit-100)*2;
	 }
	else
	{
		cal=100*1.20+200*2+(unit-300)*3;
	}
	if(cal>300)
	{
		extra=cal*15/100;
		total=cal+extra;
		cout<<"\nThe total bill is: "<<total;
	}
	else
	{
		cout<<"\nThe total bill is: "<<cal;
	}
}
```

20. Write A C++ Program To Find The Maximum Number Among Five Different Integers Using Nested Function Call.

```
#include <iostream>
using namespace std;
int max(intx,int y)
{
return x>y?x:y;
}
int main()
{
inta,b,c,d,e;
cin>>a>>b>>c>>d>>e;
int m;
   m=max(max(a, max(b,c)),max(d,e));
cout<<a<<" "<<b<<" "<<c<<" "<<d<<" "<<e<<endl;
cout<<"The Max value is: "<<m;
return 0;
}
```

21. Perfect Numbers: -

Ex-1: 28 is a perfect number as 1 + 2 + 4 + 7 + 14 = 28.
Ex-2: 15 is not perfect number as 1 + 3 + 5 is not equal to 15.

```
#include<stdio.h>
void main()
{
int perfect=0,n,i,sum=0;
printf("Please enter your number:");
scanf("%d",&n);
for(i=1;i<n;i++)
{
  if(n%i==0)
   {
     sum=sum+i;
   }
if(n==sum)
 {
   perfect=1;
   break;
 }
}
if(perfect)
printf("Perfect");
else
printf("Not Perfect");
getch();
}
```

22. **Call By Reference : -**

```
#include<stdio.h>
int swap(int *x,int *y);
int main(){
int x=10,y=20;
printf("Before Swap:\nX=%d Y=%d\n",x,y);
swap(&x,&y);
printf("After Swap:\nX=%d Y=%d\n",x,y);
return 0;
}
int swap(int *x,int *y){
int temp;
temp=*x;
*x=*y;
*y=temp;
}
```

23. **String Length: -**

```
#include <iostream>
#include <stdio.h>
using namespace std;
int main()
{
   char str[100];
   int i,count;
   count=0;
   cout<<"Please enter the string for count characters\n";
   gets(str);
   for(i=0; str[i] != '\0'; i++){
      if(str[i]!=' ')
      {
         count++;
      }
   }
   cout<<"The total characters of the given string= "<<count;
   return 0;
}
```

24. C++ program: Count word, characters and space of a string

```
#include <iostream>
#include <stdio.h>
using namespace std;
int main()
{
   char str[100];
   int i;
   int words=1,characters=0,space=0;
   cout<<"Please enter the string \n";
   gets(str);
   for(i=0; str[i] != '\0'; i++){
         if(str[i]!=' ')
           {
             characters++;
           }
          else if(str[i]==' ' || str[i] != '\n' || str[i] != '\t')
           {
             words++;
           }

   }
cout<<"\nTotal words: "<<words;
cout<<"\nTotal characters: "<<characters;
cout<<"\nSpace: "<<(words-1);
   return 0;
}
```

25. **Reverse a String: -**

```
#include<stdio.h>
int main(){
char name[100];
int i,count;
printf("Enter a string:\n");
gets(name);
for(i=0;name[i]!='\0';i++)
continue;
count=i-1;
printf("\nString in reverse order:\n");
for(i=count;i>=0;i--)
putchar(name[i]);
return 0;
}
```

26. **Lip Year –**

```
#include<stdio.h>
void main(){
int y;
printf("Please enter a year:");
scanf("%d",&y);
if((y%400==0)||((y%100!=0)&&(y%4==0)))
printf("Lip Year");
else
printf("Not Lip Year");
getch();
}
```

27. **Character Conversion –**

```
#include<stdio.h>
#include<ctype.h>
void main(){
char alphabet;
printf("Enter an alphabet:");
putchar('\n');
alphabet=getchar();
if(islower(alphabet))
putchar(toupper(alphabet));
else
putchar(tolower(alphabet));
getch();
}
```

28. **Swap Two Numbers – without third variable**

```
#include<stdio.h>
void main(){
int a=20,b=30;
printf("Before Swap:a=%d,b=%d",a,b);
a=a+b;
b=a-b;
a=a-b;
printf("\n\nAfter Swap:a=%d,b=%d",a,b);
}
```

29. **Vowel Check –**

```
#include<stdio.h>
void main(){
char ch,b;
printf("Enter a character:");
ch=getchar();
b=tolower(ch);
switch(b){
case 'a':
case 'e':
case 'i':
case 'o':
case 'u':
printf("%c is Vowel",b);
break;
default:
printf("%c is a Constant",b);
break;
}
}
```

30. **String Conversion –**

```
#include<stdio.h>
#include<string.h>
void main(){
char data[100],ch;
int i,j;
printf("Enter a string:\n");
for(i=0;(ch=getchar())!='\n';i++)
data[i]=ch;
for(j=0;j<i;j++)
if(islower(data[j]))
putchar(toupper(data[j]));
else
putchar(tolower(data[j]));
getch();
}
```

31. Armstrong Number Check (371 = 3^3 + 7^3 + 1^3 = 371)

```
#include <stdio.h>
int main()
{
int number, originalNumber, remainder, result = 0;
printf("Enter a three digit integer: ");
scanf("%d", &number);
originalNumber = number;
while (originalNumber != 0)
{
remainder = originalNumber%10;
result = result+(remainder*remainder*remainder);
originalNumber = originalNumber/10;
}
if(result == number)
printf("%d is an Armstrong number.",number);
else
printf("%d is not an Armstrong number.",number);
return 0;
}
```

32. **Strong Number – For example: 145 since = 1! + 4! + 5! = 1 + 24 + 120 = 145**

```
#include<stdio.h>
int main(){
int num,i,f,r,sum=0,temp;
printf("Enter a number: ");
scanf("%d",&num);
temp=num;
while(num){
i=1,f=1;
r=num%10;
while(i<=r){
f=f*i;
i++;
}
sum=sum+f;
num=num/10;
}
if(sum==temp)
printf("%d is a strong number",temp);
else
printf("%d is not a strong number",temp);
return 0;
}
```

33. Binary To Decimal Conversion

```
#include<iostream>
using namespace std;
int main ()
{
   int num, rem, temp, dec = 0, b = 1;
   cout << "Enter the binary number : ";
   cin >> num;
   temp = num;
   while (temp > 0)
   {
      rem = temp % 10;
      dec = dec + rem * b;
      b *= 2;
      temp /= 10;
   }
   cout << "The decimal equivalent of " << num << " is " << dec;
   return 0;
}
```

34. Find the output

```
{
    Int a,b,c=0;
b=a=2;
c=c+a++-++b;
++c;
Cout<< “Output is ”<<endl
cout<<”a=”<<a<<endl;
cout<<”b=”<<b<<endl;
cout<<”c=”<<c;
}
```

35. Find the output

```
Int a=10,b=15,c,d;
a++;
--b;
Cout<<”a=”<<a<<” ”<<”b=”<<b<<endl;
c=++a+b--;
d=c++-++a;
Cout<<”a=”<<a<<” ”<<”b=”<<b<<endl;
Cout<<”c=”<<c<<” ”<<”d=”<<d;
```