Q1

//Program To Perform All Arithmetic Operations

```
#include<stdio.h>
int main(){
        int a,b,add,subt,mul,div,rem;
        printf("Enter First Number: ");
        scanf("%d",&a);
        printf("Enter Second Number: ");
        scanf("%d",&b);
        add=a+b;
        subt=a-b;
        mul=a*b;
        div=a/b;
        rem=a%b;
        printf("\nAddition of %d & %d = %d",a,b,add);
        printf("\nSubtraction of %d & %d = %d",a,b,subt);
        printf("\nMultiplication of %d & %d = %d",a,b,mul);
        printf("\nDivision of %d & %d = %d",a,b,div);
        printf("\nRemainder of divison between %d & %d = %d",a,b,rem);
        return 0;
}
```



```
Enter First Number: 10
Enter Second Number: 20

Addition of 10 & 20 = 30
Subtraction of 10 & 20 = -10
Multiplication of 10 & 20 = 200
Division of 10 & 20 = 0
Remainder of divison between 10 & 20 = 10
PS C:\Users\lalit>
```

Q2

//Program To Find Area Of A Triangle When Height And Base Are Given

```
#include<stdio.h>
int main(){
        float a,b,area;
        printf("Enter Height Of Triangle: ");
        scanf("%f",&a);
        printf("Enter Base Of Triangle: ");
        scanf("%f",&b);
        area=0.5*a*b;
        printf("The Area of triangle is: %funit^2",area);
        return 0;
}
```

```
Enter Height Of Triangle: 4
Enter Base Of Triangle: 5
The Area of triangle is: 10.000000unit^2
PS C:\Users\lalit>
```


Q3

//Program To Find Third Angle Of A Triangle

```
#include<stdio.h>
int main(){
        int a,b,c;
        printf("Enter First Angle: ");
        scanf("%d",&a);
        printf("Enter Second Angle: ");
        scanf("%d",&b);
        c=180-a-b;                          //Sum Of all angle of triangle is 180.
        printf("The third angle is: %d",c);
        return 0;
}
```

```
Enter First Angle: 60
Enter Second Angle: 80
The third angle is: 40
PS C:\Users\lalit>
```

Q4

//Program To Convert Days Into Year Weeks & Days

```
#include<stdio.h>
int main(){
        int a,years,weeks,days;
        printf("Enter the total days: ");
        scanf("%d",&a);
        years=a/365;
        weeks=(a%365)/7;
        days=a-((years*365)+(weeks*7));
        printf("%d = %d years, %d weeks, %d days\n",a,years,weeks,days);
}
```

```
Enter the total days: 340
340 = 0 years, 48 weeks, 4 days
PS C:\Users\lalit>
```

Q5

//Program To Find Power & Square Root Of Any No.

```
#include<stdio.h>
#include<math.h>
int main(){
        int a,expo,c,i,d;
        printf("Enter a no.: ");
        scanf("%d",&a);
        d=sqrt(a);
        printf("The square root of given no. is: %d",d);
        printf("\nEnter a exponential power for finding power of given num: ");
        scanf("%d",&expo);
        for(i=0;i<expo;i++){
                c=a*a;
        }
        printf("The power of given no. is: %d",c);
        return 0;
}
```



```
Enter a no.: 121
The square root of given no. is: 11
Enter a exponential power for finding power of given num: 2
The power of given no. is: 14641
PS C:\Users\lalit>
```

Q6

//Program To Find Total, Average, Percentage & Grade Of Five Subjects Marks

```
#include<stdio.h>
int main(){
        int a,b,c,d,e,total,avg,p;
        printf("Enter marks of All Five Subjects : ");
        scanf("%d %d %d %d %d ",&a,&b,&c,&d,&e);
        total=a+b+c+d+e;
        avg=total/2;
        p=total/5;
        printf("Total=%d\nAverage=%d\nPercentage=%d%c",total,avg,p,37);
        if(p<=100 && p>=90)
                printf("Grade=A!!");
        else if(p<=89 && p>=80
                printf("Grade=B!!");
        else if(p<=79 && p>=60)
                printf("Grade=C!!");
        else if(p<=59 && p>=40)
                printf("Grade= D!!");
        else if(p<=39 && p>=27){
                printf("Grade=E!!");
        else
        printf("Better Luck Next Time!!");
        return 0;
}
```



```
Enter marks of first subject: 80
Enter marks of second subject: 90
Enter marks of third subject: 78
Enter marks of fourth subject: 79
Enter marks of fifth subject: 69
Total=396
Average=198
Percentage=79%Grade=C!!
PS C:\Users\lalit>
```

Q7A

//Program To Check LSB

```
#include<stdio.h>
int main(){
        int num;
        printf("Enter the number: ");
        scanf("%d",&num);
        if(num & 1)
                printf("LSB of %d is se(1).",num);
        else
                printf("LSB of %d is unset(0).",num);
        return 0;
}
```

```
Enter the number: 10
LSB of 10 is unset(0).
PS C:\Users\lalit>
```


Q7B

//Program To Check MSB

```
#include<stdio.h>
#define BITS sizeof(int)*8
int main(){
        int num,msb;
        printf("Enter the number: ");
        scanf("%d",&num);
        msb=1<<(BITS-1);
        if(num & 1)
                printf("MSB of %d is se(1).",num);
        else
                printf("MSB of %d is unset(0).",num);
        return 0;
}
```

```
Enter the number: 19
MSB of 19 is se(1).
PS C:\Users\lalit>
```

Q8A

//Program To Check MSB

```
#include<stdio.h>
#define BITS sizeof(int)*8
int main(){
        int num,msb;
        printf("Enter the number: ");
        scanf("%d",&num);
        msb=1<<(BITS-1);
        if(num & 1)
                printf("MSB of %d is se(1).",num);
        else
                printf("MSB of %d is unset(0).",num);
        return 0;
}
```

```
Enter first number value: 23
Enter second number value: 34
a=23
b=34
After Swapping!!.....
a=34
b=23
PS C:\Users\lalit>
```

Q8B

//Program To Swap Two No. By Using Third Variable

```
#include<stdio.h>
int main(){
        int a,b,temp;
        printf("Enter first number value: ");
        scanf("%d",&a);
        printf("Enter second number value: ");
        scanf("%d",&b);
        printf("a=%d\nb=%d",a,b);
        temp=a;
        a=b;
        b=temp;
        printf("\nAfter Swapping!!.....");
        printf("\na=%d\nb=%d",a,b);
        return 0;
}
```



```
Enter first number value: 25
Enter second number value: 35
a=25
b=35
After Swapping!!.....
a=35
b=25
PS C:\Users\lalit>
```

Q9

//Program To Find Max No. Using ternary Operator

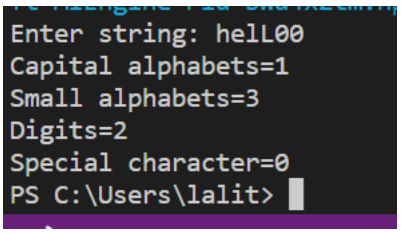
```
#include<stdio.h>
int main(){
        int a,b,c,max;
        printf("Enter first number: ");
        scanf("%d",&a);
        printf("Enter second number: ");
        scanf("%d",&b);
        printf("Enter third number: ");
        scanf("%d",&c);
        max=(a>b && a>c)?(a):((b>c)?(b):(c));
        printf("Max No. is: %d",max);
        return 0;
}
```

```
Enter first number: 27
Enter second number: 56
Enter third number: 47
Max No. is: 56
PS C:\Users\lalit>
```

Q10

//Program To Count Alphabet, Digits & Special Character Using Conditional Operator

```
#include<stdio.h>
int main(){
        char str[20];
        int i,c1=0,c2=0,c3=0,c4=0;
        printf("Enter string: ");
        gets(str);
        for(i=0;str[i]!='\0';i++){
                if(str[i]>='A' && str[i]<='Z')
                        c1++;
                else if(str[i]>='a' && str[i]<='z')
                        c2++;
                else if(str[i]>='0' && str[i]<='9')
                        c3++;
                else
                        c4++;
        }
        printf("Capital alphabets=%d\nSmall alphabets=%d\nDigits=%d\nSpecial character=%d",c1,c2,c3,c4);
        return 0;
}
```



Q11

//Calculate Electricity Bill

```
#include<stdio.h>
int main(){
        int unit;
        float  total;
        printf("Enter your electricity unit consumption: ");
        scanf("%d",&unit);
        if(unit <= 50)
                total=unit*0.5;
        else if(unit<=150)
                total=(50*0.5)+((unit-50)*0.75);
        else if(unit<=250)
                total=(50*0.5)+(100*0.75)+(100*1.2)+((unit-250)*1.5);
        printf("Your total bill is: Rs.%f",total);
        return 0;
}
```

```
Enter your electricity unit consumption: 10
Your total bill is: Rs.5.000000
PS C:\Users\lalit>
```

Q12A

//Program To Create Simple Calculator Using Switch Case

```
#include<stdio.h>
 int main(){
        float a,b,c;
        char ch;
        printf("Enter first no.: ");
        scanf("%f",&a);
        printf("Enter second no.: ");
        scanf("%f",&b);
        printf("Enter user choice to perform operations: ");
        scanf("%s",&ch);
        switch(ch){
                case '+':c=a+b;
                                printf("Sum of %f & %f is: %0.2f",a,b,c);
                                break ;
        case '-':c=a-b;
                                printf("Difference of %f & %f is: %0.2f",a,b,c);
                                break ;
                case '*':c=a*b;
                                printf("Multiplications of %f & %f is: %0.2f",a,b,c);
                                break ;
                case '/':c=a/b;
                                printf("Division of %f & %f is: %0.2f",a,b,c);
                                break ;
                default :printf("Invalid operations!!");
                                break;
        }
}
```

```
Enter first no.: 53
Enter second no.: 45
Enter user choice to perform operations: -
Difference of 53.000000 & 45.000000 is: 8.00
PS C:\Users\lalit>
```

Q12B

//Program To Create Days Of Week Using Switch Case

```
#include<stdio.h>
 int main(){
        int a;
        printf("Enter a day no.: ");
        scanf("%d",&a);
        switch(a){
                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;
                default :printf("Invalid Day!!");
                                break ;
                                return 0;
        }
}
```

```
Enter a day no.: 5
Thursday!!
PS C:\Users\lalit>
```

Q13

//Program To Check Vowel Or Consonants Using Switch Case

```
#include<stdio.h>
int main(){
        char ch;;
        printf("Enter a alphabet: ");
        scanf("%c",&ch);
        if((ch>='A' && ch<='Z')||(ch>='a' && ch<='z')){
                switch(ch){
                        case 'A':
                                case 'E':
                                        case 'I':
                                                case 'O':
                                                        case 'U':
                        case 'a':
                                case 'e':
                                        case 'i':
                                                case 'o':
                                                        case 'u':
                        printf("%c is a Vowel!!....",ch);
                        break ;
                        default:
                                        printf("%c is a Consonant!!....",ch);
                }
        }
        else
                printf("\n %c is not an alphabet!! ",ch);
                return 0;
}
```

```
Enter a alphabet: i
i is a Vowel!!....
PS C:\Users\lalit>
```

Q14

//COUNT +Ve , -Ve, Zeros

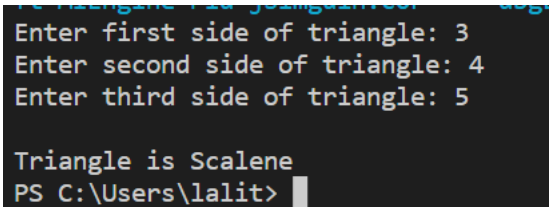
```
#include<stdio.h>
int  main(){
        int n,i,count=0,flag=0,red=0;
        printf("Enter the size of an array: ");          //Taking Size Of An Array
        scanf("%d",&n);
        int  a[n];
        for(i=0;i<n;i++){                    //Taking Value Of Elements
                printf("Enter the value for index%d: ",i);
                scanf("%d",&a[i]);
        }
        for(i=0;i<n;i++){
                if(a[i]>0){
                        count++;
                }
                else if(a[i]<0){
                        flag++;
                }
                else {
                        red++;
                }
        }
        printf("Total no. of +v no. is:%d\nTotal no. of -v no. is:%d\nTotal no. of 0 no.
is:%d",count,flag,red);
}
```

```
Enter the value for index1: 3
Enter the value for index2: 4
Enter the value for index3: 5
Enter the value for index4: 6
Enter the value for index5: 7
Enter the value for index6: 0
Enter the value for index7: 1
Total no. of +v no. is:7
Total no. of -v no. is:0
Total no. of 0 no. is:1
PS C:\Users\lalit>
```

Q15

//Program To Check A Triangle Is Equilateral, Isosceles Or Scalene Triangle

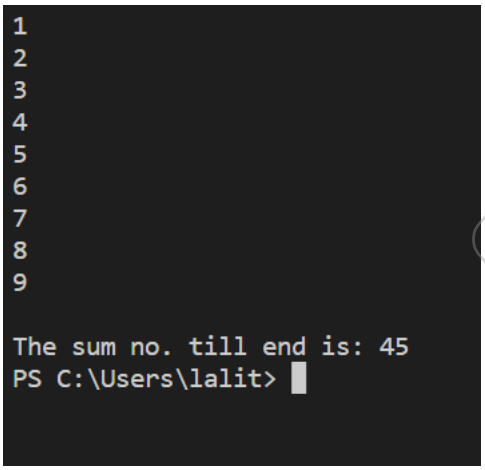
```
#include<stdio.h>
int main(){
        int a,b,c;
        printf("Enter first side of triangle: ");
        scanf("%d",&a);
        printf("Enter second side of triangle: ");
        scanf("%d",&b);
        printf("Enter third side of triangle: ");
        scanf("%d",&c);
        if(a==b && b==c){
                printf("\nTriangle is Equilateral");
        }
        else if(a==b||b==c||c==a){
                printf("\nTriangle is Isosceles");
        }
        else{
                printf("\nTriangle is Scalene");
        }
        return 0;
}
```



Q16

//PROGRAM TO PRINT NATURAL NO. AND FIND ITS SUM

```
#include <stdio.h>
int main(){
        int n,i,c=0;
        printf("Enter the limit: ");
        scanf("%d",&n);
        for(i=1;i<=n;i++){
                printf("%d\n",i);
                c=c+i;
        }
        printf("\nThe sum no. till end is: %d",c);
        return 0;
}
```



Q17

//CHECKING NO. IS EVEN OR ODD

```
#include <stdio.h>
int main(){
        int n,c=0,i;
        printf("Enter the limit: ");
        scanf("%d",&n);
        for(i=1;i<n;i++){
        if(i%2==0){
                printf("\n%d",i);
                c=c+i;
                }
        }
        printf("\nThe sum of even no. till end is: %d",c);
        return 0;
}
```

```
Enter the limit: 8

2
4
6
The sum of even no. till end is: 12
PS C:\Users\lalit>
```

Q18

//TABLE USING FOR LOOP

```
#include <stdio.h>
int main(){
        int n,i;
        printf("Enter a num to find its table: ");
        scanf("%d",&n);
        for(i=1;i<=n;i++){
                printf("%d*%d=%d\n",n,i,n*i);
        }

}
```

```
Enter a num to find its table: 4
4*1=4
4*2=8
4*3=12
4*4=16
PS C:\Users\lalit>
```


Q19

//FACTORIAL FINDING

```
#include <stdio.h>
int main(){
        int n,fact=1;
        printf("Enter a no to find its factorial: ");
        scanf("%d",&n);
        while(n>0){
                fact=fact*n;
                n=n-1;
        }
        printf("%d",fact);
}
```

```
Enter a no to find its factorial: 5
120
PS C:\Users\lalit>
```

Q20

//PALINDROME NO.

```
#include<stdio.h>
int main(){
        int n,temp,rem,sum=0;
        printf("Enter a no. to chech whether PALINDROME or not: ");
        scanf("%d",&n);
        temp=n;
        while(n>0){
                rem=n%10;
                sum=(sum*10)+rem;
                n=n/10;

        }
        n=temp;
        if(n==sum)
                printf("PALINDROME NO.");
        else
                printf("NOT A PALINFROME NO.");
         }
```



```
Enter a no. to chech whether PALINDROME or not: 123321
PALINDROME NO.
PS C:\Users\lalit>
```

Q21

//COUNT FREQUENCY OF A GIVEN ARRAY

```
#include<stdio.h>
int main(){
	int n,i,key,count=0;
	printf("Enter the size of an array: ");		//Taking Size Of An Array
	scanf("%d",&n);
	int a[n];
	for(i=0;i<n;i++){			//Taking Value Of Elements
		printf("Enter the value for index%d: ",i);
		scanf("%d",&a[i]);
	}
	printf("Enter the element to count its frquency: ");
	scanf("%d",&key);
	for(i=0;i<n;i++){
		if(a[i]==key){
			count++;
	}
	}
	printf("The element occur %d times!!",count);
}
```



```
Enter the value for index1: 3
Enter the value for index2: 4
Enter the value for index3: 5
Enter the value for index4: 6
Enter the value for index5: 7
Enter the value for index6: 8
Enter the value for index7: 1
Enter the value for index8: 0
Enter the element to count its frquency: 3
The element occur 1 times!!
```

Q22

//Program To Find LCM[Lowest Common Factors] & HCF[HighestC.M] Of To Two Integers

```
#include<stdio.h>
int main(){
        int n,a,b,max,fact=1;
        printf("Enter first no.: ");          //Taking Two No.
        scanf("%d",&a);
        printf("Enter second no.: ");
        scanf("%d",&b);
        printf("Press 1 for LCM or Press 2 for HCF: ");          //Taking Operation Type
        scanf("%d",&n);
        max=(a>b)?a:b;
        if(n==1){                             //For LCM
        while(fact){
                if(max%a==0 && max%b==0){
                        printf("LCM of %d & %d is: %d\n",a,b,max);  //Printing LCM
                        fact=0;
                        }
                max++; }}
        else if(n==2){              //For HCF
                for(max;max>=1;max--){
                if(a%max==0 && b%max==0){
                        break;
                }}
        printf("HCF of %d & %d is: %d",a,b,max);     //Printing HCF
        }
        else                                  //For Inputting Value Other Then 1&2
              printf("Invalid Operations!!");
        return 0;
}
```

```
Enter first no.: 25
Enter second no.: 80
Press 1 for LCM or Press 2 for HCF: 2
HCF of 25 & 80 is: 5
PS C:\Users\lalit>
```

Q23

//PRIME no. or not

```
#include <stdio.h>
int main(){
        int n,i,count=0;
        printf("Enter a no. to check whether PRIME no. or not: ");
        scanf("%d",&n);
        for(i=1;i<=n;i++){
                if(n%i==0){
                        count=count+1;
                }

        }
        if(count==2)
                                printf("PRIME NO.");
        else
                                printf("NOT PRIME NO.");
}
```



```
Enter a no. to check whether PRIME no. or not: 23
PRIME NO.
PS C:\Users\lalit>
```

Q24

//KRISHNAMURTI NUM OR ROBINSON NO OR STRONG NO.

```
#include<stdio.h>
int main(){
	int n,temp,rem,fact,sum=0;
	printf("Enter a no. for checking whether km or not: ");
	scanf("%d",&n);
	temp=n;
	while(n>0){
		rem=n%10;
		fact=1;
		while(rem>0){
			fact=fact*rem;
			rem--;
		}
		sum=sum+fact;
		n=n/10;
	}
	//temp=n;
	if(temp==sum)
		printf("STRONG NO.");
	else
		printf("NOT A STRONG NO.");
}
```



```
Enter a no. for checking whether km or not: 134
NOT A STRONG NO.
PS C:\Users\lalit>
```

Q25

//FABINACCO SERIES

```
#include<stdio.h>
int main(){
        int n,i,a=0,b=1,c;
        printf("Enter the limit to find fabinacco series: ");
        scanf("%d",&n);
        for(i=1;i<=n;i++){
                printf("%d\n",a);
                c=a+b;
                a=b;
                b=c;
        }
}
```

```
1
2
3
5
8
13
21
34
55
89
144
233
377
PS C:\Users\lalit>
```

Q26

//ARMSTRONG NUM OR NOT

```
#include <stdio.h>
int main(){
        int n,temp,rem,c,sum=0;
        printf("Enter the no. to check whether armstrong or not: ");
        scanf("%d",&n);
        temp=n;
        while(n>0){
                rem=n%10;
                c=rem*rem*rem;
                sum=sum+c;
                n=n/10;
        }
        n=temp;
        if(n==sum){
                printf("ARMSTRONG");
        }
        else{
                printf("NOT AN ARMSTRONG");
        }


}
```

```
Enter the no. to check whether armstrong or not: 235
NOT AN ARMSTRONG
PS C:\Users\lalit>
```

Q27

//PERFECT NO. OR NOT

```
#include <stdio.h>
int main(){
	int n,i,sum=0;
	printf("Enter a no. for checking PERFECT NUM OR NOT: ");
	scanf("%d",&n);
	for(i=1;i<=n/2;i++){
		if(n%i==0){
			sum=sum+i;
		}

	}
	if(n==sum)
		printf("PERFECT NO.");
	else
		printf("NOT A PERFECT NO.");
}
```

```
Enter a no. for checking PERFECT NUM OR NOT: 21
NOT A PERFECT NO.
PS C:\Users\lalit>
```

Q28

//POWER OF ANY NO.

```
#include <stdio.h>
#include<math.h>
int main(){
        int a,b,power;
        printf("Enter the value: ");
        scanf("%d",&a);
        printf("Enter the base value: ");
        scanf("%d",&b);
        power=pow(a,b);
        printf("The power of %d is: %d",a,power);
}
```

```
Enter the value: 24
Enter the base value: 2
The power of 24 is: 576
PS C:\Users\lalit>
```


Q29

//ASCII VALUE FINDING

```
#include <stdio.h>
int main(){
        int n;
        printf("Enter a no.: ");
        scanf("%c",&n);
        printf("%d",n);

}
```

```
Enter a no.: 19
49
PS C:\Users\lalit>
```

Q30

/*Pascal's Triangle Printing

```
#include<stdio.h>
int main(){
        int row,i,j,space,coef=0;
        printf("Enter the size of rows: ");
        scanf("%d",&row);
        for(i=0;i<row;i++){                 //For Space Printing
                for(space=1;space<=row-i;space++){
                        printf(" ");}
        for(j=0;j<=i;j++){                          //For No. Printing
                                if(j==0 || i==0)
                                        coef=1;
                                else
                                        coef=coef*(i-j+1)/j;
                                        printf(" %d",coef);
                        }
                        printf("\n");                   //For New Line
                }
        return 0;
}
```

```
Enter the size of rows: 4
     1
    1 1
   1 2 1
  1 3 3 1
PS C:\Users\lalit>
```

Q31

//SUM OF AN ARRAY ELEMENTS

```
#include<stdio.h>
int main(){
	int n,i,sum=0;
	printf("Enter the size of an array: ");		//Taking Sixe Of An Array
	scanf("%d",&n);
	int a[n];
	for(i=0;i<n;i++){			//Taking Value Of Elements
		printf("Enter the value for index%d: ",i);
		scanf("%d",&a[i]);
	}
	for(i=0;i<n;i++){
		sum=sum+a[i];
	}
	printf("The sum of elements of an array are:%d ",sum);
}
```



```
Enter the size of an array: 5
Enter the value for index0: 1
Enter the value for index1: 5
Enter the value for index2: 9
Enter the value for index3: 6
Enter the value for index4: 3
The sum of elements of an array are:24
--------------------------------
Process exited after 5.549 seconds with return value 0
Press any key to continue . . .
```

Q32

//Program To Copy One Array Elements To Another Array

```
#include<stdio.h>
int main(){
	int n,j,i,sum=0;
	printf("Enter the size of an array: ");		//Taking Sixe Of An Array
	scanf("%d",&n);
	int a[n],b[n];
	for(i=0;i<n;i++){			//Taking Value Of Elements
		printf("Enter the value for index%d: ",i);
		scanf("%d",&a[i]);
	}
	printf("You Entered:....");
	for(i=0;i<n;i++){
		printf("%d ",a[i]);
		b[i]=a[i];
	}
	printf("\nArray after copying:....");
	for(i=0;i<n;i++){
		printf("%d ",b[i]);
	}
	return 0;
}
```

```
Enter the size of an array: 6
Enter the value for index0: 1
Enter the value for index1: 4
Enter the value for index2: 7
Enter the value for index3: 8
Enter the value for index4: 5
Enter the value for index5: 2
You Entered:....1 4 7 8 5 2
Array after copying:....1 4 7 8 5 2
--------------------------------
Process exited after 5 seconds with return value 0
Press any key to continue . . .
```

Q33

//INSERTING AN ELEMENT AT ANY GIVEN INDEX

```
//Program To Insert Any Element At Any Given Point
#include<stdio.h>
int main(){
	int n,i,value,pos;
	printf("Enter the size of an array: ");		//Taking Sixe Of An Array
	scanf("%d",&n);
	int a[n+1];					//EXTRA BLOCK FOR INSERTION
	for(i=0;i<n;i++){			//Taking Value Of Elements
		printf("Enter the value for index%d: ",i);
		scanf("%d",&a[i]);
	}
	printf("Enter the INDEX to insert an element: ");
	scanf("%d",&pos);
	printf("Enter the value of an element: ");
	scanf("%d",&value);
	for(i=n;i>pos;i--){
		a[i]=a[i-1];
	}
	a[pos]=value;
	printf("UPDATED ARRAY!!");
	for(i=0;i<=n;i++)
		printf("%d",a[i]);
	return 0;
}
```

```
Enter the size of an array: 6
Enter the value for index0: 1
Enter the value for index1: 4
Enter the value for index2: 7
Enter the value for index3: 8
Enter the value for index4: 5
Enter the value for index5: 2
Enter the INDEX to insert an element: 5
Enter the value of an element: 7
UPDATED ARRAY!!1478572
--------------------------------
Process exited after 27.03 seconds with return value 0
Press any key to continue . . .
```

Q34

//Program To Delete An Element In Array At Specified Position

```
#include<stdio.h>
#define MAX_SIZE 100
int main(){
    int arr[MAX_SIZE];
    int i, size, pos;
    printf("Enter size of the array : ");   //Input size and element in array
    scanf("%d", &size);
    for(i=0; i<size; i++){
            printf("Enter the value of index[%d]: ",i);
        scanf("%d", &arr[i]);
            }
    printf("Enter the element position to delete : ");//Input element position to delete
    scanf("%d", &pos);
    if(pos < 0 || pos > size){      //Invalid delete position
        printf("Invalid position! Please enter position between 1 to %d", size);
    }
    else{                       //Copy next element value to current element
        for(i=pos-1; i<size-1; i++){
            arr[i] = arr[i + 1];
        }
        size--;
        printf("\nElements of array after delete are : ");//Print array after deletion
        for(i=0; i<size; i++){
            printf("%d ", arr[i]);
        }
    }
    return 0;
}
```

```
Enter size of the array : 5
Enter the value of index[0]: 5
Enter the value of index[1]: 8
Enter the value of index[2]: 2
Enter the value of index[3]: 3
Enter the value of index[4]: 4
Enter the element position to delete : 3

Elements of array after delete are : 5 8 3 4
--------------------------------
Process exited after 9.36 seconds with return value 0
Press any key to continue . . .
```

Q35

//Linear Search Program

```
#include <stdio.h>
int main(){
  int array[100], search, c, n;
  printf("Enter the size of an array\n");
  scanf("%d",&n);
  printf("Enter %d integer(s)\n", n);
  for (c=0;c<n;c++)                    //Taking Value Of Indexes
      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;
}
```

```
Enter the size of an array
4
Enter 4 integer(s)
3
4
5
6
Enter a number to search
 5
5 is present at location 3.

--------------------------------
```

Q36A

//Program To Find Second Largest No In Array.

```
#include<stdio.h>
int main(){
  int i,j,a,n,counter,ave,number[30];
  printf ("Enter the limit: ");
  scanf ("%d",&n);

  for (i=0; i<n; ++i){
        printf ("Enter the value of index%d: ");
    scanf ("%d",&number[i]);}
  for (i=0; i<n; ++i){
    for (j=i+1; j<n; ++j){
      if (number[i] < number[j]){
        a = number[i];
        number[i] = number[j];
        number[j] = a;
      }
    }
  }
  printf ("The numbers arranged in descending order are:\n");
  for (i=0; i<n; ++i)
    printf ("%10d",number[i]);
  printf ("\nThe 2nd largest number is = %d", number[1]);
  printf ("\nThe 2nd smallest number is = %d", number[n-2]);
  ave = (number[1] +number[n-2])/2;
  counter = 0;
  for (i=0; i<n; ++i){
    if (ave==number[i])
      ++counter;
  }
  if (counter==0)
```

```
    printf("\nThe average of 2nd largest & 2nd smallest is not in the array");
  else
    printf("\nThe average of 2nd largest & 2nd smallest in array is %d in numbers", counter);
}
```

```
Enter the limit: 5
Enter the value of index-288650752: 2
Enter the value of index-288650752: 5
Enter the value of index-288650752: 85
Enter the value of index-288650752: 7
Enter the value of index-288650752: 8
The numbers arranged in descending order are:
        85         8         7         5         2
The 2nd largest number is = 8
The 2nd smallest number is = 5
The average of 2nd largest & 2nd smallest is not in the array
--------------------------------
Process exited after 11.9 seconds with return value 0
Press any key to continue . . .
```


Q36B

//Bubble Sort Program

```
#include <stdio.h>
int main(){
    int arr[50], num, x, y, temp;
    printf("Enter the size of an array: ");
    scanf("%d",&num);
    for(x=0;x<num;x++){                    //Taking Value Input
        printf("Enter the value of index%d: ",x);
        scanf("%d",&arr[x]);
        }
    x=0;
    while(x<num-1){
      y=0;
      while(y<num-x-1){
        if(arr[y]>arr[y+1]){               //Swapping
```

```
            temp=arr[y];
            arr[y]=arr[y + 1];
            arr[y+1]=temp;
        }
        y++;
    }
    x++;
  }
  printf("Array after implementing bubble sort: ");
  for(x=0;x<num;x++)
    printf("%d  ",arr[x]);
  return 0;
}
```

```
Enter the size of an array: 5
Enter the value of index0: 1
Enter the value of index1: 4
Enter the value of index2: 5
Enter the value of index3: 6
Enter the value of index4: 7
Array after implementing bubble sort: 1  4  5  6  7
--------------------------------
Process exited after 6.338 seconds with return value 0
Press any key to continue . . .
```

Q37

//Program To Remove Duplicate Element In An Array

```
#include <stdio.h>
#define MAX_SIZE 100  // Maximum array size
int main()
{
    int arr[MAX_SIZE];
    int i, j, size, count = 0;
    printf("Enter size of the array : ");   //Taking Size Of AN Array
    scanf("%d",&size);
    for(i=0;i<size;i++){                    //Taking Value Of Element IN An Array
          printf("Enter the value of index%d: ",i);
       scanf("%d",&arr[i]);
    }
    for(i=0; i<size; i++){
       for(j=i+1; j<size; j++){             //Checkm For Duplicate Element
          if(arr[i] == arr[j]){
             count++;
             break;
          }
       }
    }
    printf("\nTotal number of duplicate elements found in array = %d", count);
    return 0;
}
```

```
Enter size of the array : 4
Enter the value of index0:
5
Enter the value of index1: 6
Enter the value of index2: 6
Enter the value of index3: 7

Total number of duplicate elements found in array = 1
--------------------------------
Process exited after 7.039 seconds with return value 0
Press any key to continue . . .
```

Q38

//Scalar Matrix Multiplication

```
#include <stdio.h>
#define SIZE 3 // Maximum size of the array
int main(){
    int num,n,i,j;
    printf("Enter the size of array: ");
    scanf("%d",&n);
    int A[n][n];
    for(i=0;i<n;i++){
        for(j=0;j<n;j++){
            printf("Enter the value of index%dx%d: ",i,j);
            scanf("%d",&A[i][j]);
        }}
    printf("Enter any number to multiply with matrix A: ");
    scanf("%d",&num);
    for(i=0;i<n;i++){
        for(j=0;j<n;j++){
            A[i][j]=num*A[i][j];
        }}
    printf("\nResultant matrix c.A = \n");
    for(i=0;i<n;i++){
        for(j=0;j<n;j++){
            printf("%d ",A[i][j]);
        }
        printf("\n");
    }
    return 0;
}
```



```
Enter the size of array: 2
Enter the value of index0x0: 4
Enter the value of index0x1: 5
Enter the value of index1x0: 6
Enter the value of index1x1: 7
Enter any number to multiply with matrix A: 1

Resultant matrix c.A =
4 5
6 7
```

Q40

//Find Out Transpose Of A Matrix

```
#include<stdio.h>
int main(){
	int n,m,i,j;
	printf("Enter the size of rows: ");                    //Taking Size Of Rows & Column
	scanf("%d",&n);
	printf("Enter the size of column: ");
	scanf("%d",&m);
	int a[n][m];
	for(i=0;i<n;i++){                                      //Inputing Values Of Elements
		for(j=0;j<m;j++){
			printf("Enter the value of index%d%d: ",i,j);
			scanf("%d",&a[i][j]);
		}
	}
	for(i=0;i<n;i++){
		for(j=0;j<m;j++){
			printf("%d ",a[i][j]);
		}
		printf("\n");
	}
	printf("Array Transpose Are!!\n");
	for(i=0;i<m;i++){
		for(j=0;j<n;j++){
			printf("%d ",a[j][i]);
		}
		printf("\n");
	}
```

```
Enter the size of rows: 2
Enter the size of column: 4
Enter the value of index00: 1
Enter the value of index01: 2
Enter the value of index02: 3
Enter the value of index03: 4
Enter the value of index10: 5
Enter the value of index11: 6
Enter the value of index12: 7
Enter the value of index13: 8
1 2 3 4
5 6 7 8
Array Transpose Are!!
1 5
2 6
3 7
4 8

--------------------------------
Process exited after 11.66 seconds with return value 0
Press any key to continue . . .
```

}

Q41

//Check Whether A Matrix Is Identity Matrix Or Not

```
#include<stdio.h>
int main(){
	int a[2][2],i,j,flag=0;
	for(i=0;i<2;i++){                                    //Taking Values Of Matrix
		for(j=0;j<2;j++){
			printf("Enter the value of inedx%d%d of Matrix1: ",i,j);
			scanf("%d",&a[i][j]);
		}}

	for(i=0;i<2;i++){                    //Checking Identity Matrix Or Not
		for(j=0;j<2;j++){
			if(i==j && a[i][j]==1){
				flag=1;
			}
			else if(i!=j && a[i][j]!=1)
				flag=0;
		}}
	if(flag==1){
		printf("IDENTITY MATRIX!!");
	}
	else{
		printf("NOT A IDENTITY MATRIX!!");
	}
}
```

```
Enter the value of inedx00 of Matrix1: 1
Enter the value of inedx01 of Matrix1: 1
Enter the value of inedx10 of Matrix1: 1
Enter the value of inedx11 of Matrix1: 1
IDENTITY MATRIX!!
--------------------------------
```

Q42

//Merging Of Two Arrays

```
#include<stdio.h>
#include<conio.h>
int main(){
    int arr1[50], arr2[50], size1, size2, i, k, merge[100];
    printf("Enter Array 1 Size: ");
    scanf("%d", &size1);
    printf("Enter Array 1 Elements: ");
    for(i=0; i<size1; i++){
        scanf("%d", &arr1[i]);
        merge[i] = arr1[i];
    }
    k = i;
    printf("\nEnter Array 2 Size: ");
    scanf("%d", &size2);
    printf("Enter Array 2 Elements: ");
    for(i=0; i<size2; i++){
        scanf("%d", &arr2[i]);
        merge[k] = arr2[i];
        k++;
                    }
    printf("\nThe new array after merging is:\n");
    for(i=0; i<k; i++)
    printf("%d ", merge[i]);
    return 0;
}
```



```
Enter Array 1 Size: 4
Enter Array 1 Elements: 4
5
6
7

Enter Array 2 Size: 3
Enter Array 2 Elements: 2
4
5

The new array after merging is:
4 5 6 7 2 4 5
--------------------------------
Process exited after 19.82 seconds with return value 0
Press any key to continue . . .
```

Q43

//All String Operations

```
# include <stdio.h>
# include <string.h>
int main(){
char str1[40], str2[40] ;
printf("Enter the first string : ") ;
gets(str1) ;
printf("Enter the second string : ") ;
gets(str2) ;
printf("\nString 1 = %s & String 2 = %s ", str1, str2) ;
printf("\nUppercase is : %s and %s", strupr(str1), strupr(str2));
printf("\nLowercase is : %s and %s", strlwr(str1), strlwr(str2));
printf("\nReverse is : %s and %s", strrev(str1), strrev(str2)) ;
printf("\nString copy is : %s ", strcpy(str1,str2));
printf("\nConcatenation is : %s ", strcat(str1,str2));
return 0;
}
```



```
Enter the first string : hellogla
Enter the second string : glau

String 1 = hellogla & String 2 = glau
Uppercase is : HELLOGLA and GLAU
Lowercase is : hellogla and glau
Reverse is : algolleh and ualg
String copy is : ualg
Concatenation is : ualgualg
--------------------------------
Process exited after 11.11 seconds with return value 0
Press any key to continue . . .
```

Q44

//Checking A String Is Palindrom Or Not.....Without Using String Functions

```
#include<stdio.h>
#include<string.h>
int main(){
	char str[100];
	int i,flag=0,len;
	printf("Enter the string to check palindrome or not: ");
	gets(str);
	len=strlen(str);
	for(i=0;i<len;i++){
		if(str[i]!=str[len-i-1]){
			flag=1;
			break;
	}
}
	if(flag==0)
		printf("PALINDROME!!");
	else
		printf("NOT A PALINDROME!!");
}
```

```
Enter the string to check palindrome or not: nitin
PALINDROME!!
--------------------------------
Process exited after 11.59 seconds with return value 0
Press any key to continue . . .
```

Q45

//Count Frequency Of A Given String

```
#include<stdio.h>
int main(){
	char str[20],a;
	int c=0,i;
	printf("Enter a string: ");
	gets(str);
	printf("Enter a character to count its frequency: ");
	scanf("%c",&a);
	for(i=0;str[i]!='\0';i++){
		if(a==str[i]){
			c++;
		}
	}
	printf("%c occur %d times.",a,c);
	return 0;
}
```



```
Enter a string: gla gla gla
Enter a character to count its frequency: a
a occur 3 times.
--------------------------------
Process exited after 6.715 seconds with return value 0
Press any key to continue . . .
```

Q46

//Program To Find Diameter,Area&Circumference Of A Circle Given Radius

```
#include <stdio.h>
#include <math.h> // Used for constant PI referred as M_PI
double getDiameter(double radius);                //Function declaration
double getCircumference(double radius);
double getArea(double radius);
int main() {
    float radius, dia, circ, area;
    printf("Enter radius of circle: ");      //Taking Radius Of A Circle
    scanf("%f", &radius);
    dia  = getDiameter(radius);       // Call getDiameter function
    circ = getCircumference(radius);  // Call getCircumference function
    area = getArea(radius);           // Call getArea function
    printf("Diameter of the circle = %.2f units\n", dia);
    printf("Circumference of the circle = %.2f units\n", circ);
    printf("Area of the circle = %.2f sq. units", area);
}
double getDiameter(double radius){
    return (2 * radius);
}
double getCircumference(double radius) {
    return (2 * M_PI * radius);
}
double getArea(double radius){
    return (M_PI * radius * radius);
}
```

```
Enter radius of circle: 5
Diameter of the circle = 10.00 units
Circumference of the circle = 31.42 units
Area of the circle = 78.54 sq. units
--------------------------------
Process exited after 2.335 seconds with return value 0
Press any key to continue . . .
```

Q47

//Program To Check A No. Is Armstrong, Perfect, And Prime Or not

```
#include <stdio.h>
#include <math.h>
int isPrime(int num);    //Function declarations
int isArmstrong(int num);
int isPerfect(int num);
int main(){
    int num;
    printf("Enter any number: ");
    scanf("%d", &num);
    if(isPrime(num)){       // Call isPrime() functions
        printf("%d is Prime number.\n", num);
    }
    else{
        printf("%d is not Prime number.\n", num);
    }
    if(isArmstrong(num)){                    // Call isArmstrong() function
        printf("%d is Armstrong number.\n", num);
    }
    else{
        printf("%d is not Armstrong number.\n", num);
    }
    if(isPerfect(num)){   // Call isPerfect() function
        printf("%d is Perfect number.\n", num);
    }
    else{
        printf("%d is not Perfect number.\n", num);
    }
    return 0;
}
int isPrime(int num){//* Check whether a number is prime or not.
```

```
    int i;              //* Returns 1 if the number is prime otherwise 0.
    for(i=2; i<=num/2; i++){
        if(num%i == 0){
            return 0;}}
    return 1;
}

int isArmstrong(int num){       //Check whether a number is Armstrong number or not.
    int lastDigit, sum, originalNum, digits;//Returns 1 if the number is Armstrong number otherwise 0.
    sum = 0;
    originalNum = num;
    digits = (int) log10(num) + 1;          //Find total digits in num
    while(num > 0){  //Calculate sum of power of digits
    lastDigit = num % 10; // Extract the last digit
        sum = sum + round(pow(lastDigit, digits));// Compute sum of power of last digit
    num = num / 10;     // Remove the last digit
    }
    return (originalNum == sum);
}
int isPerfect(int num){             //Check whether the number is perfect number or not.
    int i, sum, n;                  //Returns 1 if the number is perfect otherwise 0.
    sum = 0;
    n = num;
    for(i=1; i<n; i++){  // If i is a divisor of num
        if(n%i == 0){
            sum += i;
        }}
    return (num == sum);
}
```

```
Enter any number: 5
5 is Prime number.
5 is Armstrong number.
5 is not Perfect number.

--------------------------------
Process exited after 2.486 seconds with return value 0
Press any key to continue . . .
```

Q48

//Add Two No. Using Pointers

```
#include<stdio.h>
int main(){
        int *p,*q,a,b,r;
        printf("Enter the num1: ");
        scanf("%d",&a);
        printf("Enter the num2: ");
        scanf("%d",&b);
        p=&a;  //Giving address of variables to pointers
        q=&b;
        r=*p+*q;
        printf("The sum of no.: %d",r);
//      printf("The sum of no. %d & %d is: %d.",a,b,*r);
        return 0;
}
```

```
Enter the num1: 5
Enter the num2: 1
The sum of no.: 6
--------------------------------
Process exited after 3.139 seconds with return value 0
Press any key to continue . . .
```

Q49

//Call by Value Example - Swapping 2 numbers using Call by Value

```
#include <stdio.h>
void swap(int, int);
int main(){
   int x, y;
   printf("Enter the value of x and y\n");
   scanf("%d%d",&x,&y);
   printf("Before Swapping\nx = %d\ny = %d\n", x, y);
   swap(x, y);
   printf("After Swapping\nx = %d\ny = %d\n", x, y);
   return 0;
}
void swap(int a, int b){
   int temp;
   temp = b;
   b = a;
   a = temp;
         printf("Values of a and b is %d  %d\n",a,b);
}
```



```
Enter the value of x and y
5
3
Before Swapping
x = 5
y = 3
Values of a and b is 3  5
After Swapping
x = 5
y = 3

--------------------------------
Process exited after 4.729 seconds with return value 0
Press any key to continue . . .
```

Q50 //Copy Array Using Pointers

```
#include <stdio.h>
#define MAX_SIZE 100 // Maximum array size
void printArray(int arr[], int size);//Function declaration to print array *
int main(){
    int source_arr[MAX_SIZE], dest_arr[MAX_SIZE];
    int size, i;
    int *source_ptr = source_arr;   // Pointer to source_arr
    int *dest_ptr   = dest_arr;     // Pointer to dest_arr
    int *end_ptr;
    printf("Enter size of array: ");//Input size and elements in source array
    scanf("%d", &size);
    printf("Enter elements in array: ");
    for (i = 0; i < size; i++){
        scanf("%d", (source_ptr + i));
    }
    end_ptr = &source_arr[size - 1];// Pointer to last element of source_arr
    printf("\nSource array before copying: ");//Print source and destination array before copying
    printArray(source_arr, size);
    printf("\nDestination array before copying: ");
    printArray(dest_arr, size);
    while(source_ptr <= end_ptr){//Run loop till source_ptr exists in source_arr
        *dest_ptr = *source_ptr;// memory range.
        source_ptr++;               //Increment source_ptr and dest_ptr
        dest_ptr++;
    }
    printf("\n\nSource array after copying: ");// Print source and destination array after copying
    printArray(source_arr, size);
    printf("\nDestination array after copying: ");
    printArray(dest_arr, size);
    return 0;
}
```

```
void printArray(int *arr, int size){//Function to print array elements.
    int i;                                          //@arr     Integer array to print.
    for (i = 0; i < size; i++){       //@size    Size of array.
        printf("%d, ", *(arr + i));
    }
}
```

```
Enter size of array: 4
Enter elements in array: 2
4
5
6

Source array before copying: 2, 4, 5, 6,
Destination array before copying: 1342177360, 5374032, 5505089, 5570649,

Source array after copying: 2, 4, 5, 6,
Destination array after copying: 2, 4, 5, 6,
--------------------------------
Process exited after 6.85 seconds with return value 0
Press any key to continue . . .
```