```
//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(){

```
Abhishek Singh
       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
```

//Program To Con #include<stdio.h>

```
Abhishek Singh
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\leq 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>
```

```
//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 first subject: ");
       scanf("%d",&a);
       printf("Enter marks of second subject: ");
       scanf("%d",&b);
       printf("Enter marks of third subject: ");
       scanf("%d",&c);
       printf("Enter marks of fourth subject: ");
       scanf("%d",&d);
       printf("Enter marks of fifth subject: ");
       scanf("%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 \le 100 \&\& p \ge 90)
               printf("Grade=A!!");
       }
       else if(p <= 89 \&\& p >= 80){
               printf("Grade=B!!");
       }
       else if(p <= 79 \&\& p >= 60){
               printf("Grade=C!!");
```

```
Abhishek Singh
       }
       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)
```

```
Abhishek Singh
              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 Swao To 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);

temp=a;

b=temp;

return 0;

}

a=b;

printf("a=%d\nb=%d",a,b);

printf("\nAfter Swapping!!....");

 $printf("\na=\%d\nb=\%d",a,b);$

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

```
//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: ");
```

```
Abhishek Singh
       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;
}
Enter string: helL00
Capital alphabets=1
Small alphabets=3
Digits=2
Special character=0
PS C:\Users\lalit>
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);
```

```
Abhishek Singh
       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);
```

```
Abhishek Singh
```

```
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!!");

```
Abhishek Singh
                              break;
                              return 0;
       }
}
Enter a day no.: 5
Thursday!!
PS C:\Users\lalit>
Q13
//Program To Check Vowel Or Consonamts 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
```

```
Abhishek Singh
               printf("\n %c is not an alphabet!! ",ch);
               return 0;
}
Enter a alphabet: i
PS C:\Users\lalit>
Q14
//COUNT +V , -V, Zero
#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>
```

```
//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;
}
```

```
Enter first side of triangle: 3
Enter second side of triangle: 4
Enter third side of triangle: 5

Triangle is Scalene
PS C:\Users\lalit>
```

```
//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;
}</pre>
```

```
1
2
3
4
5
6
7
8
9
The sum no. till end is: 45
PS C:\Users\lalit>
■
```

Q17

//CHECKING NO. IS EVEN OR ODD #include <stdio.h> int main(){

```
Abhishek Singh
       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
 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
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;
```

```
//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 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]);
       }
       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!!
```

```
//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;
              }}
```

```
Abhishek Singh
       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(){

```
Abhishek Singh

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;
}</pre>
```

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

```
//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;
```

```
Abhishek Singh
      }
      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.");
}
Roll No: 2215000066
```

```
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(){
       printf("Enter a no.: ");
       scanf("%c",&n);
       printf("%d",n);
}
```

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

```
/*Pascal's Triangle Printing
                      1
               1
                              1
        1
               2
       1
               3
                              3
                                     1
  1 4 6 4 1
                      */
#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++){</pre>
                      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
11
121
1331
PS C:\Users\lalit>

■
```

//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);
}
```

```
//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);
                                     //EXTRA BLOCK FOR INSERTION
      int a[n+1];
      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--){
```

Abhishek Singh

```
//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]);</pre>
```

```
Abhishek Singh
      }
  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 Programm
#include <stdio.h>
```

```
Abhishek Singh
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
Enter 4 integer(s)
3
4
5
Enter a number to search
5 is present at location 3.
Process exited after 9.304 seconds with return value 0
Press any key to continue . . .
```

Q36A

```
//Program To Find Second Largest No.
#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]){</pre>
       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)
```

```
Abhishek Singh
   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
                                                            2
                                    7
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];
```

```
Abhishek Singh
        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
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);

```
Abhishek Singh
  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:
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
```

```
//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: ");

Roll No : 2215000066
```

```
Abhishek Singh
  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]);
```

}

return 0;

}

}

printf("\n");

```
//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]);
               }
```

```
Abhishek Singh
```

```
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");
}</pre>
```

```
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 . . .
```

```
printf("Enter the value of inedx%d%d of Matrix1: ",i,j);
                  scanf("%d",&a[i][j]);
            }}
                    //Checking Identity Matrix Or Not
      for(i=0;i<2;i++){}
            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!!
 Process exited after 2.685 seconds with return value 0
Press any key to continue . . .
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;
```

}

```
//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;
}
```

```
//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 . . .
```

```
//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);
}
```

```
//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
```

```
Abhishek Singh
     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;
}
                            //Check whether a number is Armstrong number or not.
int isArmstrong(int num){
  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;
```

```
Abhishek Singh
  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;
```

}

```
//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\n = \%d\n = \%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
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 . . .
```