PART A

1)Variable names can range from 1 to 255 characters . Must begin with _ or a alphabet capital or small.Spaces or special characters not allowed.We cannot use c++ keyword as an identifier.

2)The largest use void data type is create generic pointers. If we don't know to what type of datatype the pointer points , we can use these generic pointers. But type casting is required while usage.

```
Int  i=10;

Void *gp;gp=&I;

Cout<<(int)*gp;
```

3) An enumeration is a user-defined data type consists of integral constants and each integral constant is give a name. Basically used for creation of symbolic constants.

```
enum boolean{ false;

 true; };

 enum boolean check;
```

4)Array is collection of similar homogenous data types;

Ex:-

```
Char name[100];
```

Name is array of 100 characters.

Since an array is derived from the primitive data types , it is known as derived data type .

5)In C++ a variable can be declared anywhere in the scope of the program. This feature is highly beneficial as at the time of writing the program , we don't know how many variables can gonna be necessary , hence during the middle of the program , the declaration of new variables is helpful.

:: scope resolution operator can be used to access the global definition of a variable .

6)A reference variable provides an alias (alternative name) for a previously defined variable .

Its major use is in call by reference mechanism and return by reference mechanism , with these mechanisms the original data might be differed by other functions.

Ex:

```
Int &x=a;
```

Both x,a are hold the same address . or both are one and the same.

7)class

Public

Private

Inline

Namespace

New

Delete

8)

:: scope resolution operator

It is used to define a member function of a class outside the class.

It is used to access the global version of a variable.

9)

new is an operator whereas malloc()is function hence saves time.

There is no type casting required in new , where as in (int *)malloc() type casting is required since it returns a void pointer.

Syntax of new is rather easier.

Int *p=new int;

10)

char * const p;

this is a constant pointer , which means the address pointed by the pointer cannot be changed .

but the value at address can be changed .

that implies

char ch;

p=&ch;   //illegal

*p='x';   //legal

char const *p;

this is a pointer to a constant ,which means the address pointed by the pointer can changed but not the value at address.

That implies

```
Char ch;

P=&ch ;   //legal

*p=’x’;    //illegal
```

PART B

3.1)

ALGORITHM:-

```
1)read two numbers

2)call the function swap

3)print the values after swap
```

Function:-

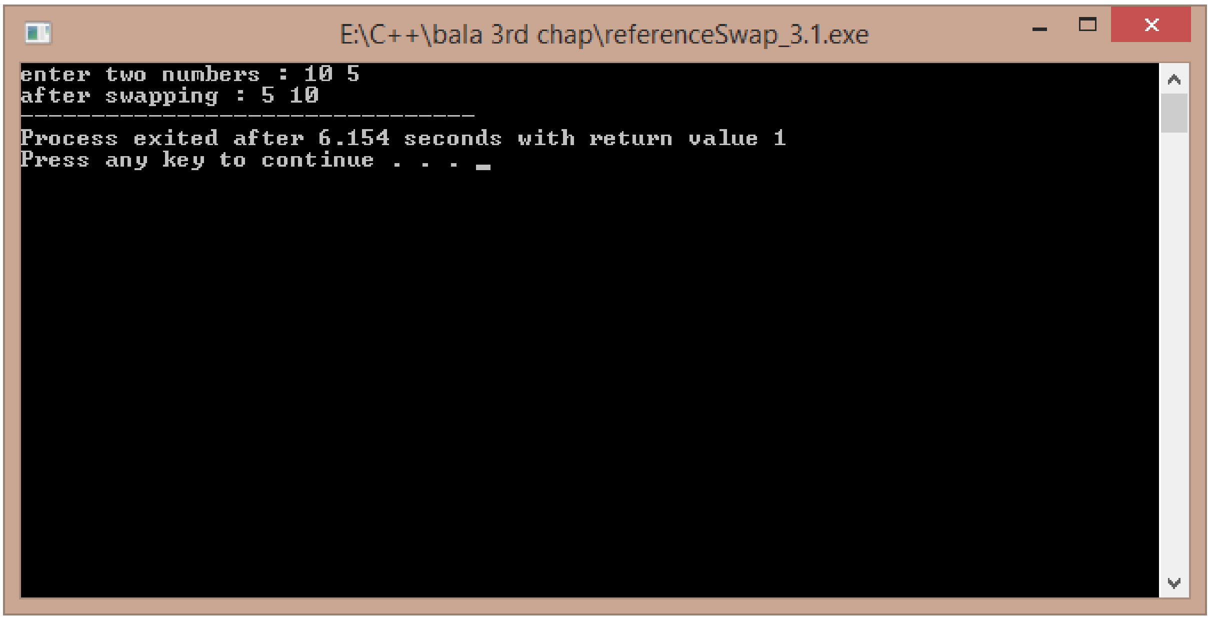
```
void swap(int &x,int &y)

{

      int t=x;

      x=y;

      y=t;

}
```

Return type is void.

Takes two parameters as reference variables.

```
/*Function program to swap the values of a pair of integers using reference variables. Developed by
Sekhar Karedla of BE ¼ CSE-2, CBIT */

#include<iostream>

using namespace std;

void swap(int &x,int &y)                                        //function defination

{

      int t=x;
```

```
    x=y;

    y=t;

}

int main()

{

    cout<<"enter two numbers : ";                    //reading numbers

    int a,b;

    cin>>a>>b;

    swap(a,b);

    cout<<"after swapping : "<<a<<" "<<b;                    //displaying numbers

return 1;

}
```



```
enter two numbers : 10 5
after swapping : 5 10
--------------------------------
Process exited after 6.154 seconds with return value 1
Press any key to continue . . .
```

3.2)

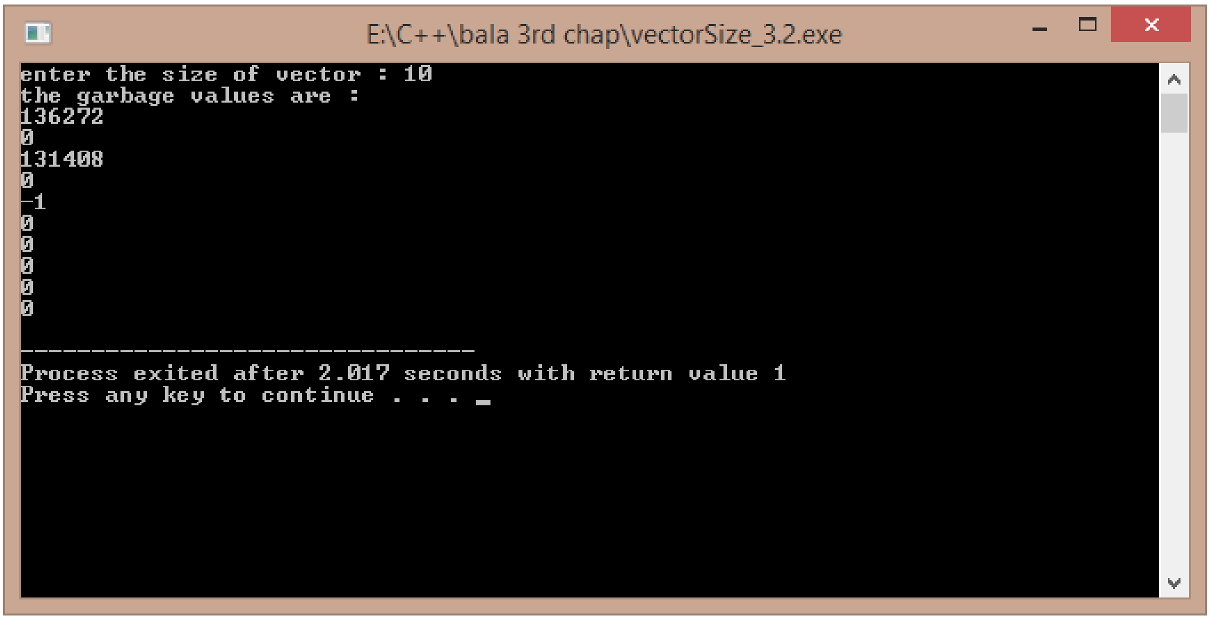
ALGORITHM:-

1)read the size of vector from the user

2)create the vector using new operator

3)display the default values so as to show the created vector

```
/*A program to create a vector of size as demanded by the user , Developed by Sekhar Karedla BE ¼ CSE-2,CBIT*/

#include<iostream>

using namespace std;

int main()

{

        int m,i;

        cout<<"enter the size of vector : ";

        cin>>m;                         //reading size

        int *p=new int[m];              //creating the vector

        cout<<"the garbage values are : \n";

        for(i=0;i<m;i++)                //displaying the garbage values

        {

            cout<<p[i]<<"\n";

        }

        return 1;

}
```



```
enter the size of vector : 10
the garbage values are :
136272
0
131408
0
-1
0
0
0
0
0

--------------------------------
Process exited after 2.017 seconds with return value 1
Press any key to continue . . .
```

3.3)

ALGORITHM:-

1)start

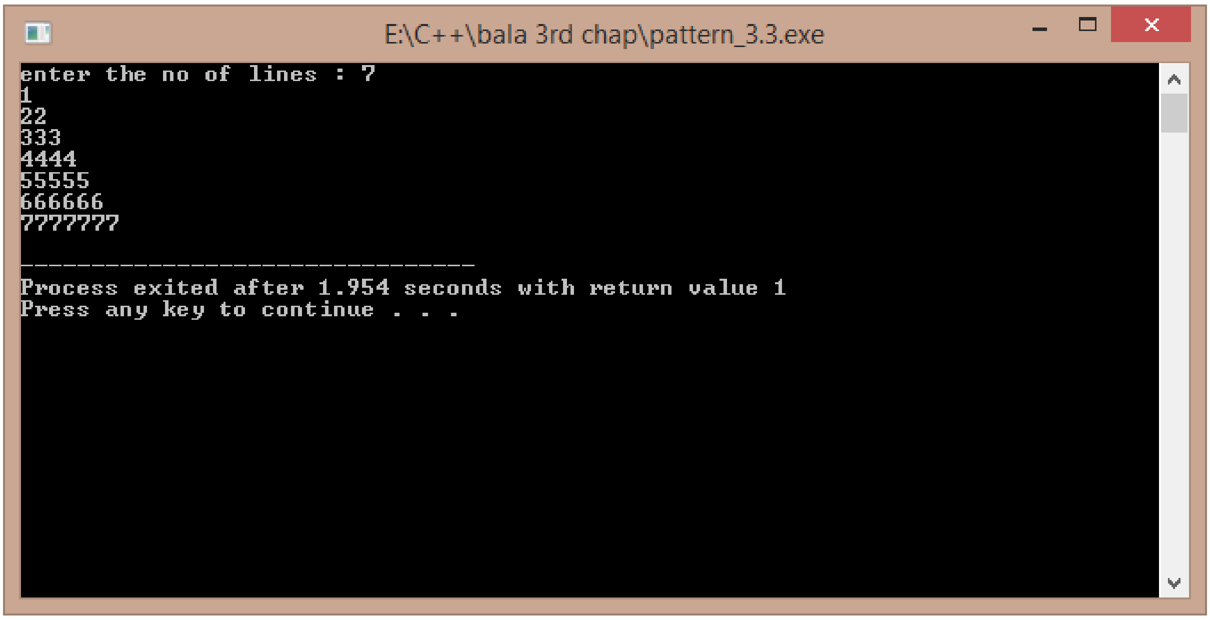
2)read the number of lines from user

3)use two for loops to get the pattern

4)end

```
/*A program to display the following pattern
1
22
333
4444
55555
……
,  Developed by Sekhar Karedla BE ¼ CSE-2,CBIT*/
#include<iostream>
using namespace std;
int main()
{
    int i,j,m;
    cout<<"enter the no of lines : ";
    cin>>m;
    for(i=1;i<=m;i++)
    {
        for(j=1;j<=i;j++)
        {
            cout<<i;
        }
```

```
            cout<<"\n";

        }

return 1;

}
```



```
enter the no of lines : 7
1
22
333
4444
55555
666666
7777777

--------------------------------
Process exited after 1.954 seconds with return value 1
Press any key to continue . . .
```

3.4)

ALGORITHM:-

1)start

2)take all the values in float

3)create three loops , one for the increment of p , one for r , one for n (nested loops)

4) calculate the value of v in each case using pow function under cmath header file

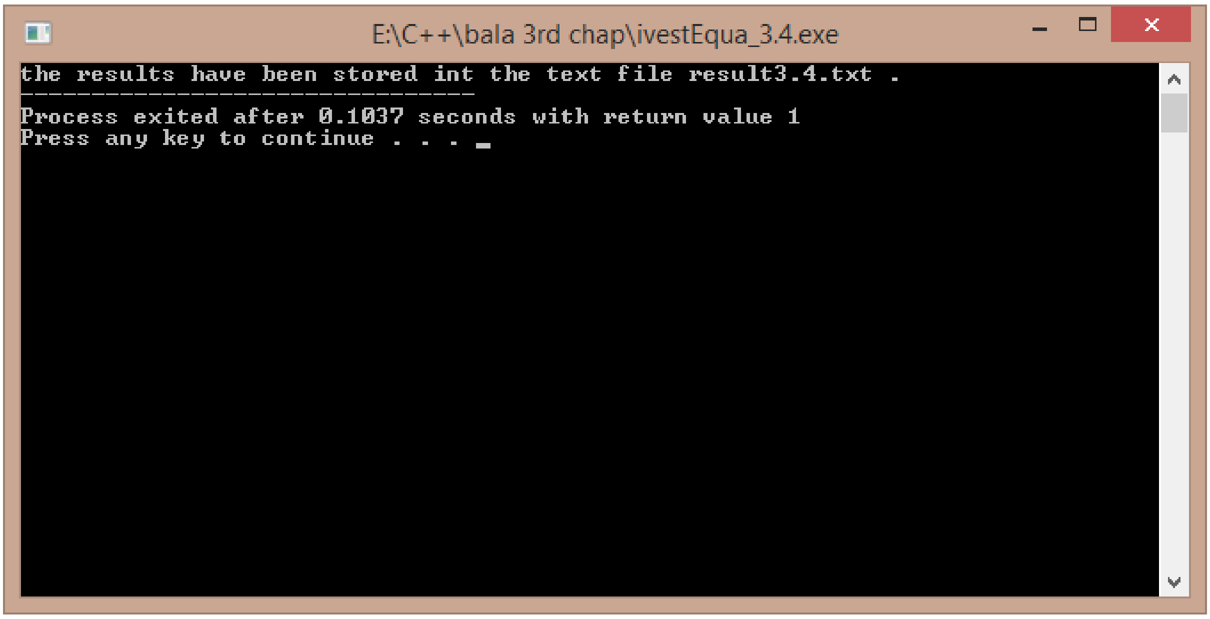
5)store the obtained data in a file so as for the convenience of the user to display the output

Mainly using fprintf() function.

6)end

```
/*A program to develop the results of the investment equation v=(1+p)^n.  Developed by Sekhar Karedla BE ¼ CSE-2,CBIT*/

#include<iostream>

#include<cmath>

using namespace std;
```

```
int main()

{

                                float p,v,n,r;FILE *fp;char ch;

                                fp=fopen("result3.4.txt","w");              //opening a file

                                fputs("3.4 PROBLEM REULTS \n ------------------------------------------------------
------- \n",fp);                                        //to initiate with the file some basic borders


                                fputs("P\t\tr\t\tn\t\t\tV\n",fp);

                                for(p=1000;p<=10000;p=p+1000)

                                {

                                        for(r=0.10;r<=0.21;r=r+0.01)

                                        {

                                                  for(n=1;n<=10;n++)

                                                  {

                                                            v=p*(pow((1+r),n));
                              //calculating v and storing in file the next line

                                                            fprintf(fp,"\n%f\t%f\t%f\t\t%f",p,r,n,v);

                                                  }

                                        }

                                }

                                fclose(fp);

                                cout<<"the results have been stored int the text file result3.4.txt .";

                                return 1;

}
```



```
the results have been stored int the text file result3.4.txt .
--------------------------------
Process exited after 0.1037 seconds with return value 1
Press any key to continue . . . _
```

THE CONTENTS OF THE FILE(RESULT3.4.txt) ARE:-

```
3.4 PROBLEM REULTS

 -------------------------------------------------------------

P                r                n                    V



1000.000000    0.100000        1.000000             1100.000000

1000.000000    0.100000        2.000000             1210.000000

1000.000000    0.100000        3.000000             1331.000122

1000.000000    0.100000        4.000000             1464.100098

1000.000000    0.100000        5.000000             1610.510254

1000.000000    0.100000        6.000000             1771.561279

1000.000000    0.100000        7.000000             1948.717407

1000.000000    0.100000        8.000000             2143.589355

1000.000000    0.100000        9.000000             2357.947998

1000.000000    0.100000        10.000000            2593.743164

1000.000000    0.110000        1.000000             1110.000000

1000.000000    0.110000        2.000000             1232.099976

1000.000000    0.110000        3.000000             1367.631104
```

1000.000000	0.110000	4.000000	1518.070435
1000.000000	0.110000	5.000000	1685.058228
1000.000000	0.110000	6.000000	1870.414795
1000.000000	0.110000	7.000000	2076.160400
1000.000000	0.110000	8.000000	2304.538086
1000.000000	0.110000	9.000000	2558.037354
1000.000000	0.110000	10.000000	2839.421387
1000.000000	0.120000	1.000000	1120.000000
1000.000000	0.120000	2.000000	1254.400024
1000.000000	0.120000	3.000000	1404.927979
1000.000000	0.120000	4.000000	1573.519409
1000.000000	0.120000	5.000000	1762.341797
1000.000000	0.120000	6.000000	1973.822754
1000.000000	0.120000	7.000000	2210.681396
1000.000000	0.120000	8.000000	2475.963379
1000.000000	0.120000	9.000000	2773.078857
1000.000000	0.120000	10.000000	3105.848389
1000.000000	0.130000	1.000000	1130.000000
1000.000000	0.130000	2.000000	1276.899902
1000.000000	0.130000	3.000000	1442.896973
1000.000000	0.130000	4.000000	1630.473633
1000.000000	0.130000	5.000000	1842.435181
1000.000000	0.130000	6.000000	2081.951660
1000.000000	0.130000	7.000000	2352.605225
1000.000000	0.130000	8.000000	2658.444092
1000.000000	0.130000	9.000000	3004.041992
1000.000000	0.130000	10.000000	3394.567139

1000.000000	0.140000	1.000000	1140.000000
1000.000000	0.140000	2.000000	1299.599976
1000.000000	0.140000	3.000000	1481.543945
1000.000000	0.140000	4.000000	1688.960083
1000.000000	0.140000	5.000000	1925.414429
1000.000000	0.140000	6.000000	2194.972412
1000.000000	0.140000	7.000000	2502.268555
1000.000000	0.140000	8.000000	2852.585938
1000.000000	0.140000	9.000000	3251.947998
1000.000000	0.140000	10.000000	3707.220703
1000.000000	0.150000	1.000000	1150.000000
1000.000000	0.150000	2.000000	1322.500000
1000.000000	0.150000	3.000000	1520.874878
1000.000000	0.150000	4.000000	1749.006104
1000.000000	0.150000	5.000000	2011.357056
1000.000000	0.150000	6.000000	2313.060547
1000.000000	0.150000	7.000000	2660.019287
1000.000000	0.150000	8.000000	3059.022461
1000.000000	0.150000	9.000000	3517.875732
1000.000000	0.150000	10.000000	4045.557129
1000.000000	0.160000	1.000000	1160.000000
1000.000000	0.160000	2.000000	1345.599854
1000.000000	0.160000	3.000000	1560.895874
1000.000000	0.160000	4.000000	1810.639160
1000.000000	0.160000	5.000000	2100.341309
1000.000000	0.160000	6.000000	2436.395996
1000.000000	0.160000	7.000000	2826.218994

1000.000000	0.160000	8.000000	3278.414307
1000.000000	0.160000	9.000000	3802.960449
1000.000000	0.160000	10.000000	4411.433594
1000.000000	0.170000	1.000000	1170.000122
1000.000000	0.170000	2.000000	1368.900146
1000.000000	0.170000	3.000000	1601.613281
1000.000000	0.170000	4.000000	1873.887695
1000.000000	0.170000	5.000000	2192.448975
1000.000000	0.170000	6.000000	2565.165283
1000.000000	0.170000	7.000000	3001.243652
1000.000000	0.170000	8.000000	3511.455078
1000.000000	0.170000	9.000000	4108.402832
1000.000000	0.170000	10.000000	4806.831543
1000.000000	0.180000	1.000000	1180.000122
1000.000000	0.180000	2.000000	1392.400146
1000.000000	0.180000	3.000000	1643.032349
1000.000000	0.180000	4.000000	1938.778198
1000.000000	0.180000	5.000000	2287.758301
1000.000000	0.180000	6.000000	2699.555176
1000.000000	0.180000	7.000000	3185.475098
1000.000000	0.180000	8.000000	3758.860840
1000.000000	0.180000	9.000000	4435.456055
1000.000000	0.180000	10.000000	5233.838379
1000.000000	0.190000	1.000000	1190.000000
1000.000000	0.190000	2.000000	1416.100098
1000.000000	0.190000	3.000000	1685.159180
1000.000000	0.190000	4.000000	2005.339600

1000.000000	0.190000	5.000000	2386.354248
1000.000000	0.190000	6.000000	2839.761719
1000.000000	0.190000	7.000000	3379.316650
1000.000000	0.190000	8.000000	4021.387207
1000.000000	0.190000	9.000000	4785.450684
1000.000000	0.190000	10.000000	5694.686523
1000.000000	0.200000	1.000000	1200.000000
1000.000000	0.200000	2.000000	1440.000000
1000.000000	0.200000	3.000000	1728.000122
1000.000000	0.200000	4.000000	2073.600342
1000.000000	0.200000	5.000000	2488.320557
1000.000000	0.200000	6.000000	2985.984863
1000.000000	0.200000	7.000000	3583.181885
1000.000000	0.200000	8.000000	4299.818359
1000.000000	0.200000	9.000000	5159.782227
1000.000000	0.200000	10.000000	6191.739258
2000.000000	0.100000	1.000000	2200.000000
2000.000000	0.100000	2.000000	2420.000000
2000.000000	0.100000	3.000000	2662.000244
2000.000000	0.100000	4.000000	2928.200195
2000.000000	0.100000	5.000000	3221.020508
2000.000000	0.100000	6.000000	3543.122559
2000.000000	0.100000	7.000000	3897.434814
2000.000000	0.100000	8.000000	4287.178711
2000.000000	0.100000	9.000000	4715.895996
2000.000000	0.100000	10.000000	5187.486328
2000.000000	0.110000	1.000000	2220.000000

2000.000000	0.110000	2.000000	2464.199951
2000.000000	0.110000	3.000000	2735.262207
2000.000000	0.110000	4.000000	3036.140869
2000.000000	0.110000	5.000000	3370.116455
2000.000000	0.110000	6.000000	3740.829590
2000.000000	0.110000	7.000000	4152.320801
2000.000000	0.110000	8.000000	4609.076172
2000.000000	0.110000	9.000000	5116.074707
2000.000000	0.110000	10.000000	5678.842773
2000.000000	0.120000	1.000000	2240.000000
2000.000000	0.120000	2.000000	2508.800049
2000.000000	0.120000	3.000000	2809.855957
2000.000000	0.120000	4.000000	3147.038818
2000.000000	0.120000	5.000000	3524.683594
2000.000000	0.120000	6.000000	3947.645508
2000.000000	0.120000	7.000000	4421.362793
2000.000000	0.120000	8.000000	4951.926758
2000.000000	0.120000	9.000000	5546.157715
2000.000000	0.120000	10.000000	6211.696777
2000.000000	0.130000	1.000000	2260.000000
2000.000000	0.130000	2.000000	2553.799805
2000.000000	0.130000	3.000000	2885.793945
2000.000000	0.130000	4.000000	3260.947266
2000.000000	0.130000	5.000000	3684.870361
2000.000000	0.130000	6.000000	4163.903320
2000.000000	0.130000	7.000000	4705.210449
2000.000000	0.130000	8.000000	5316.888184

2000.000000	0.130000	9.000000	6008.083984
2000.000000	0.130000	10.000000	6789.134277
2000.000000	0.140000	1.000000	2280.000000
2000.000000	0.140000	2.000000	2599.199951
2000.000000	0.140000	3.000000	2963.087891
2000.000000	0.140000	4.000000	3377.920166
2000.000000	0.140000	5.000000	3850.828857
2000.000000	0.140000	6.000000	4389.944824
2000.000000	0.140000	7.000000	5004.537109
2000.000000	0.140000	8.000000	5705.171875
2000.000000	0.140000	9.000000	6503.895996
2000.000000	0.140000	10.000000	7414.441406
2000.000000	0.150000	1.000000	2300.000000
2000.000000	0.150000	2.000000	2645.000000
2000.000000	0.150000	3.000000	3041.749756
2000.000000	0.150000	4.000000	3498.012207
2000.000000	0.150000	5.000000	4022.714111
2000.000000	0.150000	6.000000	4626.121094
2000.000000	0.150000	7.000000	5320.038574
2000.000000	0.150000	8.000000	6118.044922
2000.000000	0.150000	9.000000	7035.751465
2000.000000	0.150000	10.000000	8091.114258
2000.000000	0.160000	1.000000	2320.000000
2000.000000	0.160000	2.000000	2691.199707
2000.000000	0.160000	3.000000	3121.791748
2000.000000	0.160000	4.000000	3621.278320
2000.000000	0.160000	5.000000	4200.682617

2000.000000	0.160000	6.000000	4872.791992
2000.000000	0.160000	7.000000	5652.437988
2000.000000	0.160000	8.000000	6556.828613
2000.000000	0.160000	9.000000	7605.920898
2000.000000	0.160000	10.000000	8822.867188
2000.000000	0.170000	1.000000	2340.000244
2000.000000	0.170000	2.000000	2737.800293
2000.000000	0.170000	3.000000	3203.226562
2000.000000	0.170000	4.000000	3747.775391
2000.000000	0.170000	5.000000	4384.897949
2000.000000	0.170000	6.000000	5130.330566
2000.000000	0.170000	7.000000	6002.487305
2000.000000	0.170000	8.000000	7022.910156
2000.000000	0.170000	9.000000	8216.805664
2000.000000	0.170000	10.000000	9613.663086
2000.000000	0.180000	1.000000	2360.000244
2000.000000	0.180000	2.000000	2784.800293
2000.000000	0.180000	3.000000	3286.064697
2000.000000	0.180000	4.000000	3877.556396
2000.000000	0.180000	5.000000	4575.516602
2000.000000	0.180000	6.000000	5399.110352
2000.000000	0.180000	7.000000	6370.950195
2000.000000	0.180000	8.000000	7517.721680
2000.000000	0.180000	9.000000	8870.912109
2000.000000	0.180000	10.000000	10467.676758
2000.000000	0.190000	1.000000	2380.000000
2000.000000	0.190000	2.000000	2832.200195

2000.000000	0.190000	3.000000	3370.318359
2000.000000	0.190000	4.000000	4010.679199
2000.000000	0.190000	5.000000	4772.708496
2000.000000	0.190000	6.000000	5679.523438
2000.000000	0.190000	7.000000	6758.633301
2000.000000	0.190000	8.000000	8042.774414
2000.000000	0.190000	9.000000	9570.901367
2000.000000	0.190000	10.000000	11389.373047
2000.000000	0.200000	1.000000	2400.000000
2000.000000	0.200000	2.000000	2880.000000
2000.000000	0.200000	3.000000	3456.000244
2000.000000	0.200000	4.000000	4147.200684
2000.000000	0.200000	5.000000	4976.641113
2000.000000	0.200000	6.000000	5971.969727
2000.000000	0.200000	7.000000	7166.363770
2000.000000	0.200000	8.000000	8599.636719
2000.000000	0.200000	9.000000	10319.564453
2000.000000	0.200000	10.000000	12383.478516
3000.000000	0.100000	1.000000	3300.000000
3000.000000	0.100000	2.000000	3630.000000
3000.000000	0.100000	3.000000	3993.000244
3000.000000	0.100000	4.000000	4392.300293
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3000.000000	0.100000	10.000000	7781.229492
3000.000000	0.110000	1.000000	3330.000000
3000.000000	0.110000	2.000000	3696.300049
3000.000000	0.110000	3.000000	4102.893066
3000.000000	0.110000	4.000000	4554.211426
3000.000000	0.110000	5.000000	5055.174805
3000.000000	0.110000	6.000000	5611.244141
3000.000000	0.110000	7.000000	6228.481445
3000.000000	0.110000	8.000000	6913.614258
3000.000000	0.110000	9.000000	7674.111816
3000.000000	0.110000	10.000000	8518.263672
3000.000000	0.120000	1.000000	3360.000000
3000.000000	0.120000	2.000000	3763.199951
3000.000000	0.120000	3.000000	4214.783691
3000.000000	0.120000	4.000000	4720.558105
3000.000000	0.120000	5.000000	5287.025391
3000.000000	0.120000	6.000000	5921.468262
3000.000000	0.120000	7.000000	6632.044434
3000.000000	0.120000	8.000000	7427.890137
3000.000000	0.120000	9.000000	8319.236328
3000.000000	0.120000	10.000000	9317.544922
3000.000000	0.130000	1.000000	3390.000000
3000.000000	0.130000	2.000000	3830.699707
3000.000000	0.130000	3.000000	4328.690918
3000.000000	0.130000	4.000000	4891.420898
3000.000000	0.130000	5.000000	5527.305176
3000.000000	0.130000	6.000000	6245.854980

3000.000000	0.130000	7.000000	7057.815918
3000.000000	0.130000	8.000000	7975.332520
3000.000000	0.130000	9.000000	9012.125977
3000.000000	0.130000	10.000000	10183.702148
3000.000000	0.140000	1.000000	3420.000000
3000.000000	0.140000	2.000000	3898.800049
3000.000000	0.140000	3.000000	4444.631836
3000.000000	0.140000	4.000000	5066.880371
3000.000000	0.140000	5.000000	5776.243164
3000.000000	0.140000	6.000000	6584.917480
3000.000000	0.140000	7.000000	7506.805664
3000.000000	0.140000	8.000000	8557.757812
3000.000000	0.140000	9.000000	9755.844727
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10000.000000	0.160000	10.000000	44114.335938
10000.000000	0.170000	1.000000	11700.000977
10000.000000	0.170000	2.000000	13689.001953
10000.000000	0.170000	3.000000	16016.132812
10000.000000	0.170000	4.000000	18738.876953
10000.000000	0.170000	5.000000	21924.488281
10000.000000	0.170000	6.000000	25651.652344

10000.000000	0.170000	7.000000	30012.435547
10000.000000	0.170000	8.000000	35114.550781
10000.000000	0.170000	9.000000	41084.027344
10000.000000	0.170000	10.000000	48068.312500
10000.000000	0.180000	1.000000	11800.000977
10000.000000	0.180000	2.000000	13924.000977
10000.000000	0.180000	3.000000	16430.322266
10000.000000	0.180000	4.000000	19387.781250
10000.000000	0.180000	5.000000	22877.583984
10000.000000	0.180000	6.000000	26995.550781
10000.000000	0.180000	7.000000	31854.751953
10000.000000	0.180000	8.000000	37588.609375
10000.000000	0.180000	9.000000	44354.562500
10000.000000	0.180000	10.000000	52338.386719
10000.000000	0.190000	1.000000	11900.000977
10000.000000	0.190000	2.000000	14161.000977
10000.000000	0.190000	3.000000	16851.591797
10000.000000	0.190000	4.000000	20053.396484
10000.000000	0.190000	5.000000	23863.542969
10000.000000	0.190000	6.000000	28397.617188
10000.000000	0.190000	7.000000	33793.164062
10000.000000	0.190000	8.000000	40213.871094
10000.000000	0.190000	9.000000	47854.503906
10000.000000	0.190000	10.000000	56946.863281
10000.000000	0.200000	1.000000	12000.000000
10000.000000	0.200000	2.000000	14400.000977
10000.000000	0.200000	3.000000	17280.001953

```
10000.000000   0.200000         4.000000                 20736.001953

10000.000000   0.200000         5.000000                 24883.205078

10000.000000   0.200000         6.000000                 29859.847656

10000.000000   0.200000         7.000000                 35831.820312

10000.000000   0.200000         8.000000                 42998.183594

10000.000000   0.200000         9.000000                 51597.824219

10000.000000   0.200000         10.000000                61917.390625
```

3.5)

ALGORITHM:-

1)start

2)read the number of ballots from the user

3)create an array on the ballots , using new operator

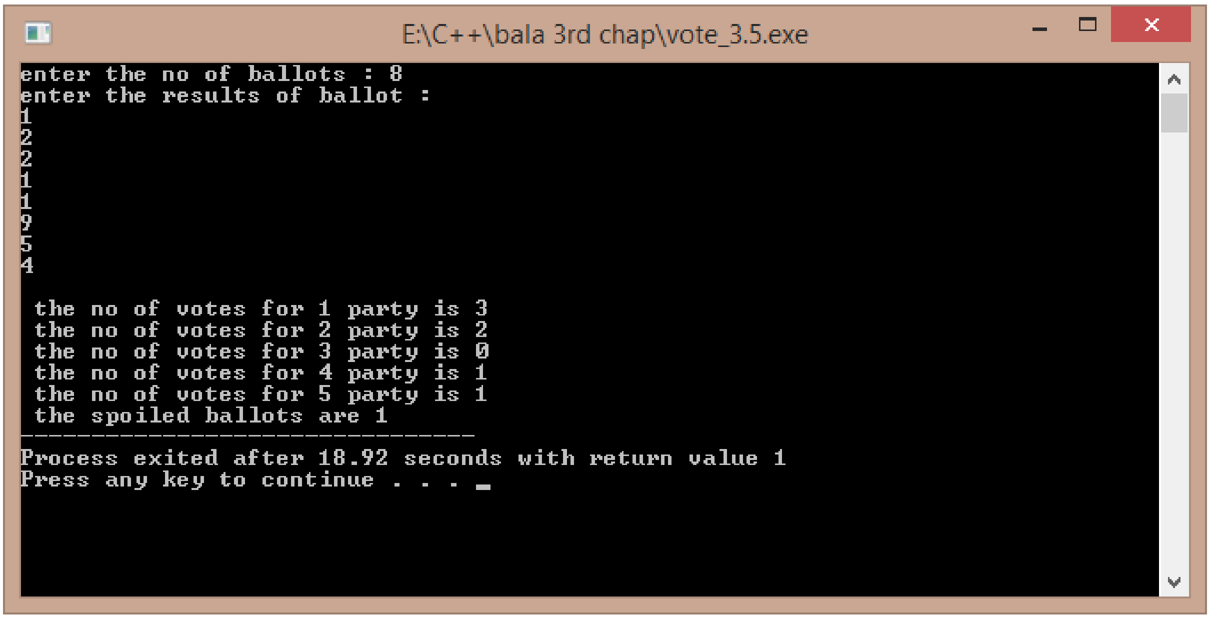
4)enter the result of each ballot using a for loop

5)calculate the result and spoilt ballots using again a for loop

6)display the results

7)end

```
/* A program to calculate the results of an election , .  Developed by Sekhar Karedla BE ¼ CSE-2,CBIT*/

#include<iostream>

using namespace std;

int main()

{

        cout<<"enter the no of ballots : ";        //reading the number of ballots

        static int n,i,r[6];                        //static declaration so as get the results array to 0

        cin>>n;

        int *p=new int[n];

        cout<<"enter the results of ballot : \n";
        for(i=0;i<n;i++)

        {

                cin>>p[i];

                if(p[i]>0&&p[i]<6)      //reading the results of ballots as well as calculating the results

                {

                        r[p[i]-1]++;

                }

                else

                r[5]++;

        }

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

        {

                cout<<"\n the no of votes for "<<i+1<<" party is "<<r[i];

        }

                cout<<"\n the spoiled ballots are "<<r[5];

return 1;

}
```



```
enter the no of ballots : 8
enter the results of ballot :
1
2
2
1
1
9
5
4

 the no of votes for 1 party is 3
 the no of votes for 2 party is 2
 the no of votes for 3 party is 0
 the no of votes for 4 party is 1
 the no of votes for 5 party is 1
 the spoiled ballots are 1
--------------------------------
Process exited after 18.92 seconds with return value 1
Press any key to continue . . .
```

3.6)

ALGORITHM:-

1)start

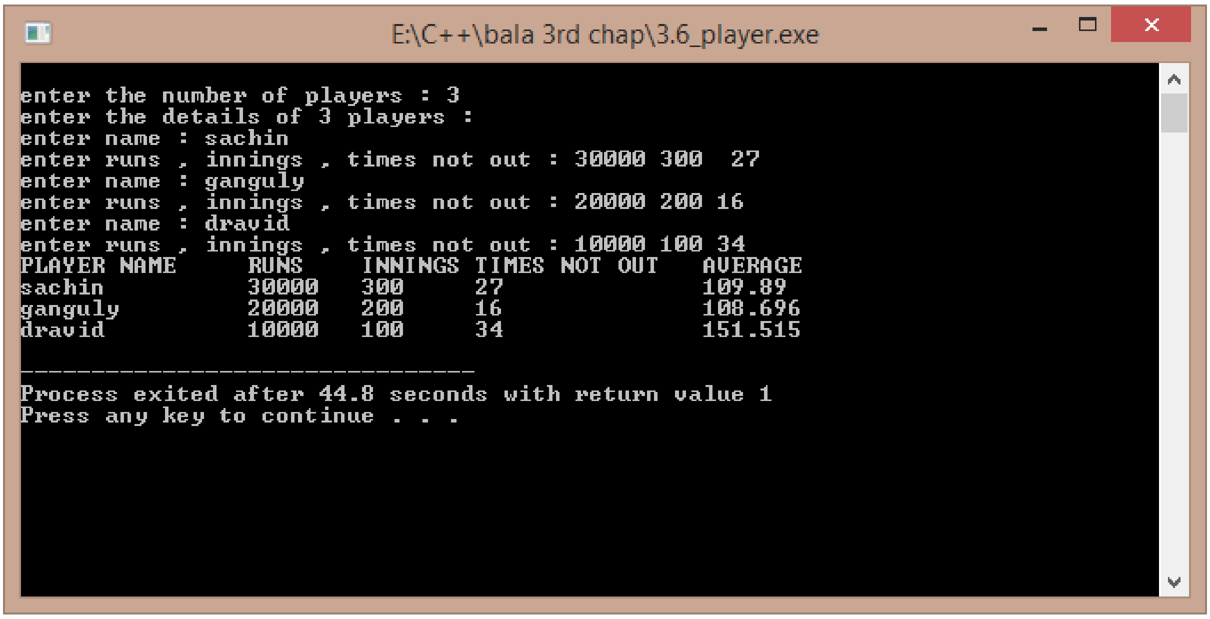
2)create a class which contains the data related to a player and functions

3)create a pointer in the main function to create a array of objects using new operator

4)input the values for each object and print them in a tabular form with the batting average

5)end

```
/*A program to tabulate the details of the cricket player with the batting average. Developed by Sekhar Karedla BE ¼ CSE-2,CBIT*/

#include<iostream>

using namespace std;

class player

{

        char name[100];

        int runs;

        int inn;

        int t;

        float avg;

        public:

                void getdata();

                void display();

};

void player::getdata()

{

        cout<<"enter name : ";

        cin>>name;

        cout<<"enter runs , innings , times not out : ";

        cin>>runs>>inn>>t;
}

void player::display()

{

	avg=float(1.0*runs/(inn-t));

	cout<<name<<"\t\t"<<runs<<"\t"<<inn<<"\t"<<t<<"\t\t"<<avg<<"\n";

}

int main()

{

	int n,i;

	cout<<"\nenter the number of players : ";

	cin>>n;

	player *p=new player[n];

	cout<<"enter the details of "<<n<<" players : \n";

	for(i=0;i<n;i++)

	{

		p[i].getdata();

	}

	cout<<"PLAYER NAME\t"<<"RUNS\t"<<"INNINGS\t"<<"TIMES NOT OUT\t"<<"AVERAGE\n";

	for(i=0;i<n;i++)

	{

		p[i].display();

	}

return 1;

}
```



```
enter the number of players : 3
enter the details of 3 players :
enter name : sachin
enter runs , innings , times not out : 30000 300  27
enter name : ganguly
enter runs , innings , times not out : 20000 200 16
enter name : dravid
enter runs , innings , times not out : 10000 100 34
PLAYER NAME      RUNS    INNINGS TIMES NOT OUT    AVERAGE
sachin           30000   300     27               109.89
ganguly          20000   200     16               108.696
dravid           10000   100     34               151.515

--------------------------------
Process exited after 44.8 seconds with return value 1
Press any key to continue . . .
```

3.7)a)

ALGORITHM:-

1)start

2)calculate the original value of sinx using cmath header file

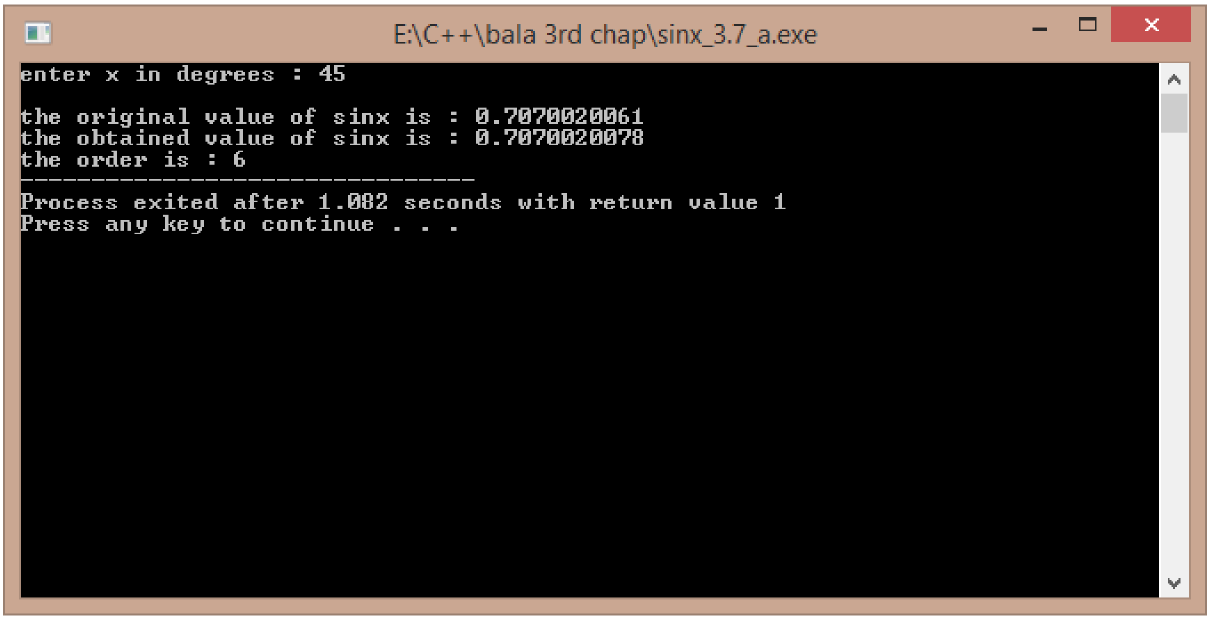
3)calculate the sinx value obtained by eulers expansion

4)find the error and compare

5)end

```
/*A program to compare the original and obtained value of sinx , Developed by Sekhar Karedla CSE-2
        BE ¼ ,CBIT*/

#include<iostream>

#include<math.h>

using namespace std;

int main()

{

        long double s,t,x,i,j,n;

        cout<<"enter x in degrees : ";        //reading the degress

        cin>>x;

        x=x*(3.141/180);
```

```
            for(j=3;j<1000;j++)

            {s=0;t=x;

            for(i=2;i<=j;i++)

            {

                        s=s+t;

                        t=t*-1*x*x/(2*(i-1)*(2*i-1));          //calculating sinx from euler formula

            }

            if(((s-sin(x))>-0.00000001)&&(s-sin(x))<0.00000001)

            {

                        cout.precision(10);

                        cout<<"\nthe original value of sinx is : "<<sin(x);

                        cout<<"\nthe obtained value of sinx is : "<<s;

                        cout<<"\nthe order is : "<<j;

                        break;

            }

            }

return 1;

}
```



```
enter x in degrees : 45

the original value of sinx is : 0.7070020061
the obtained value of sinx is : 0.7070020078
the order is : 6
--------------------------------
Process exited after 1.082 seconds with return value 1
Press any key to continue . . .
```

3.7)b)

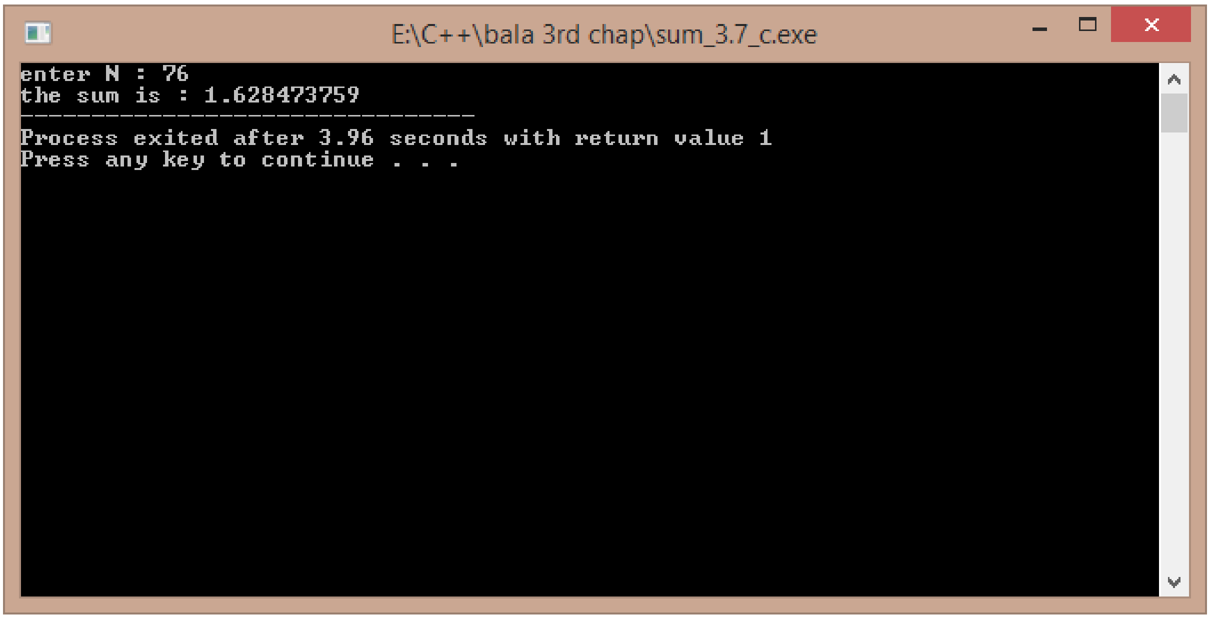
ALGORITHM:-

1)reading the value of x from the user

2)calculating the sum using for loops

3)displaying the result

```
/*A program to calculate the sum of particular sequence ,  Developed by Sekhar Karedla CSE-2 BE ¼
        ,CBIT*/

#include<iostream>

using namespace std;

int main()

{

        float s,k,p,i,j,n,t;t=1;

        cout<<"enter N : ";

        cin>>n;p=1;

        for(i=1;i<=n;i++)

        {s=s+p;t=1;

                for(j=0;j<i;j++)

                {

                        t=t*(1/(i+1));

                }

                p=t;

        }

        cout.precision(10);

        cout<<"the sum is : "<<s;

return 1;

}
```



```
enter N : 76
the sum is : 1.628473759
--------------------------------
Process exited after 3.96 seconds with return value 1
Press any key to continue . . .
```

3.7)c)

ALGORITHM:-

1)start

2)calculate the original value of cosx using cmath header file

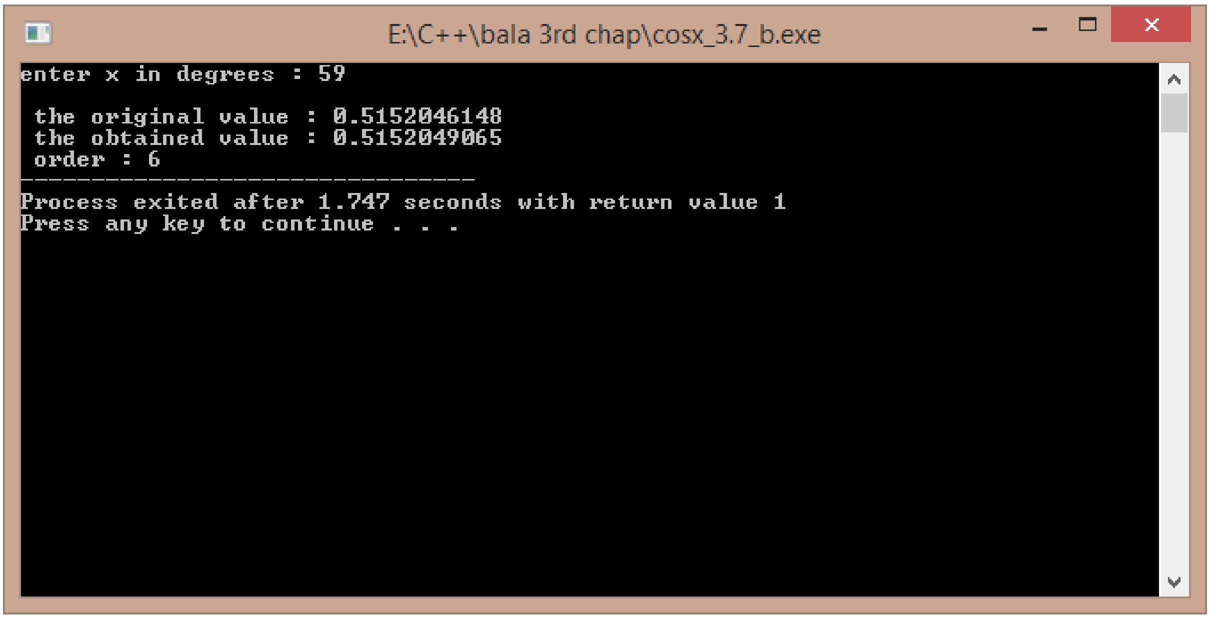
3)calculate the cosx value obtained by eulers expansion

4)find the error and compare

5)end

```
/*A program to compare the original and obtained value of cosx , Developed by Sekhar Karedla CSE-
        2 BE ¼ ,CBIT*/


#include<iostream>

#include<math.h>

using namespace std;

int main()

{

        float x,t,s,i,j;

        cout<<"enter x in degrees : ";

        cin>>x;
```

```
    x=x*(3.141/180);

    for(j=0;j<1000;j++)

    {

    s=1;t=-(x*x)/2;

    for(i=0;i<=j;i=i+2)

    {

        s=s+t;

        t=t*-1*x*x/((i+3)*(i+4));

    }

    if(((s-cos(x))>-0.000001)&&((s-cos(x)<0.000001)))

    {

        cout.precision(10);

        cout<<"\n the original value : "<<cos(x);

        cout<<"\n the obtained value : "<<s;

        cout<<"\n order : "<<j;

        break;

    }

    }

 return 1;

}
```



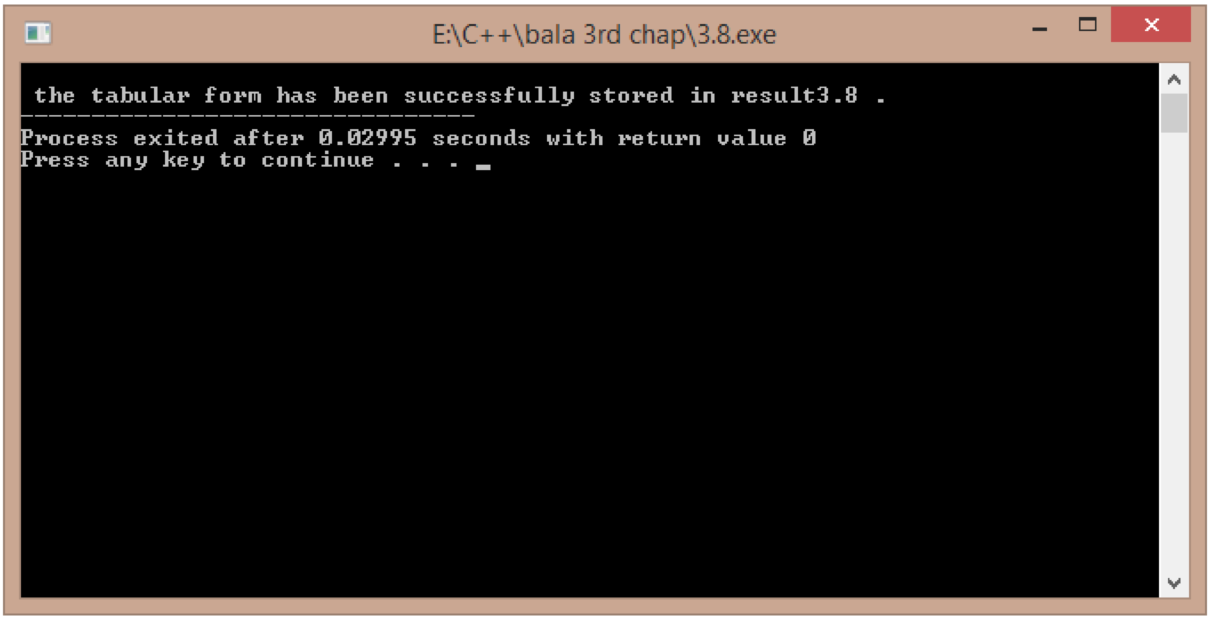
```
enter x in degrees : 59

 the original value : 0.5152046148
 the obtained value : 0.5152049065
 order : 6
--------------------------------
Process exited after 1.747 seconds with return value 1
Press any key to continue . . .
```

3.8)

ALGORITHM:-

```
1)start
2)we use two for loops for proper alignment
3)we store the results again in a file because viewing the results in the command prompt will cause
        the failure of alignment
4)we calculate the exp(-x) value for 0.1 increment
5)we store the values in a file
6)end
```

```
/*A program developed to show the results of exp(-x) in tabular form , Developed by Sekhar Karedla
        CSE-2 BE ¼ ,CBIT*/

#include<iostream>

#include<cmath>

using namespace std;

int main()

{

        float i,j;float r;FILE *fp;int k;

        fp=fopen("result3.8.txt","w");   //opening a file

        fprintf(fp,"X");
        fseek(fp,1,SEEK_SET);
        for(i=0.1;i<=1.0;i=i+0.1)    // setting the table headings
        fprintf(fp,"\t%f",i);
        for(i=0.0;i<10.0;i=i+1.0)
        {k=i;
                fprintf(fp,"\n%d",k);
                for(j=i+0.1;j<=i+0.9;j=j+0.1)
                {
                        r=exp(-j);
                        fprintf(fp,"\t%f",r);    // using fprintf to store the values in a file.
                }
        }
        cout<<"\n the tabular form has been successfully stored in result3.8 .";
        return 0;
}
```



```
 the tabular form has been successfully stored in result3.8 .
--------------------------------
Process exited after 0.02995 seconds with return value 0
Press any key to continue . . .
```

<u>THE CONTENTS OF THE RESULT3.8.txt:-</u>

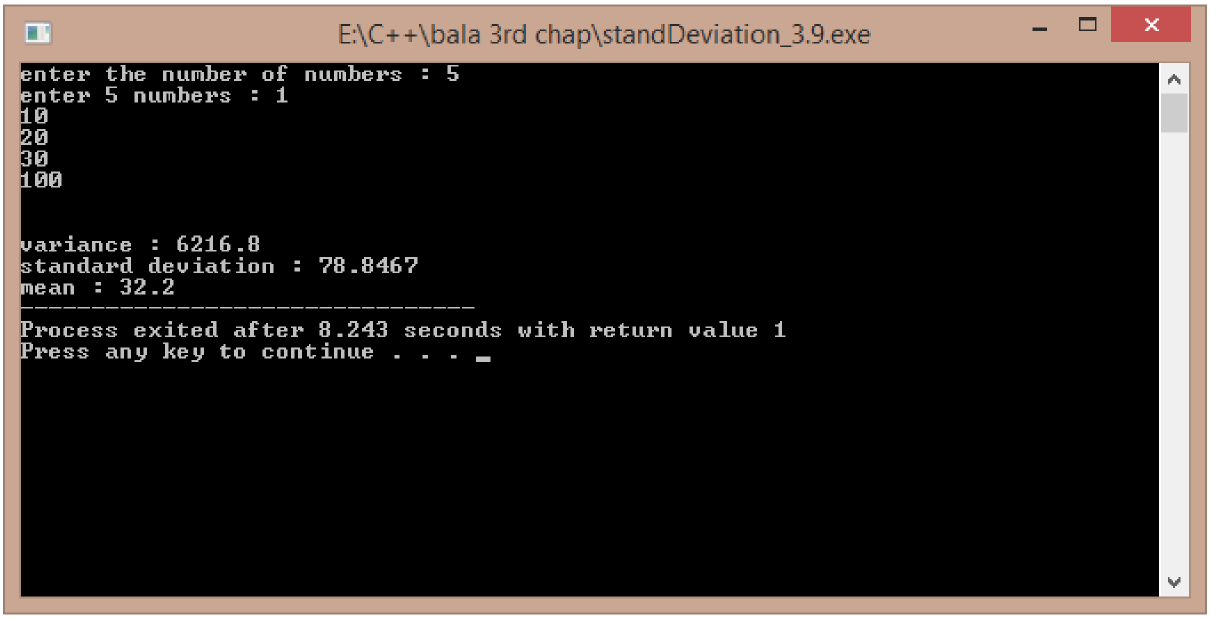
```
X        0.100000 0.200000 0.300000 0.400000 0.500000 0.600000 0.700000 0.800000

0        0.904837 0.818731 0.740818 0.670320 0.606531 0.548812 0.496585 0.449329

1        0.332871 0.301194 0.272532 0.246597 0.223130 0.201896 0.182683 0.165299

2        0.122456 0.110803 0.100259 0.090718 0.082085 0.074274 0.067206 0.060810

3        0.045049 0.040762 0.036883 0.033373 0.030197 0.027324 0.024724 0.022371

4        0.016573 0.014996 0.013569 0.012277 0.011109 0.010052 0.009095 0.008230

5        0.006097 0.005517 0.004992 0.004517 0.004087 0.003698 0.003346 0.003028

6        0.002243 0.002029 0.001836 0.001662 0.001503 0.001360 0.001231 0.001114

7        0.000825 0.000747 0.000676 0.000611 0.000553 0.000500 0.000453 0.000410

8        0.000304 0.000275 0.000249 0.000225 0.000203 0.000184 0.000167 0.000151

9        0.000112 0.000101 0.000091 0.000083 0.000075 0.000068 0.000061 0.000055
```

3.9)

ALGORITHM:-

```
1)start
2)take the number of numbers input and create an array with new operator
3)input all number and take their sum , and hence calculate mean
4)use loops to calculate the variance by taking the  difference from the mean
5)display the results
6)end
```

```
/* A program to calculate the standard deviation , variance , mean of the given numbers . Developed
        by Sekhar Karedla CSE-2 BE ¼ ,CBIT*/


#include<iostream>

#include<math.h>

using namespace std;

int main()

{

    int n,s=0;
    cout<<"enter the number of numbers : ";

    cin>>n;

    int *p=new int[n];

    int i;

    cout<<"enter "<<n<<" numbers : ";

    for(i=0;i<n;i++)

    {

        cin>>p[i];

        s=s+p[i];

    }

    float m,sd,v;

    m=(1.0/n)*s;

    float s1;

    for(i=0;i<n;i++)

    {

        s1=s1+((p[i]-m)*(p[i]-m));

    }

    sd=sqrt(s1);

    v=sd*sd;

    cout<<"\n\nvariance : "<<v<<"\nstandard deviation : "<<sd<<"\nmean : "<<m;

    return 1;

}
```



```
enter the number of numbers : 5
enter 5 numbers : 1
10
20
30
100


variance : 6216.8
standard deviation : 78.8467
mean : 32.2
--------------------------------
Process exited after 8.243 seconds with return value 1
Press any key to continue . . .
```

3.10)

ALGORITHM:-

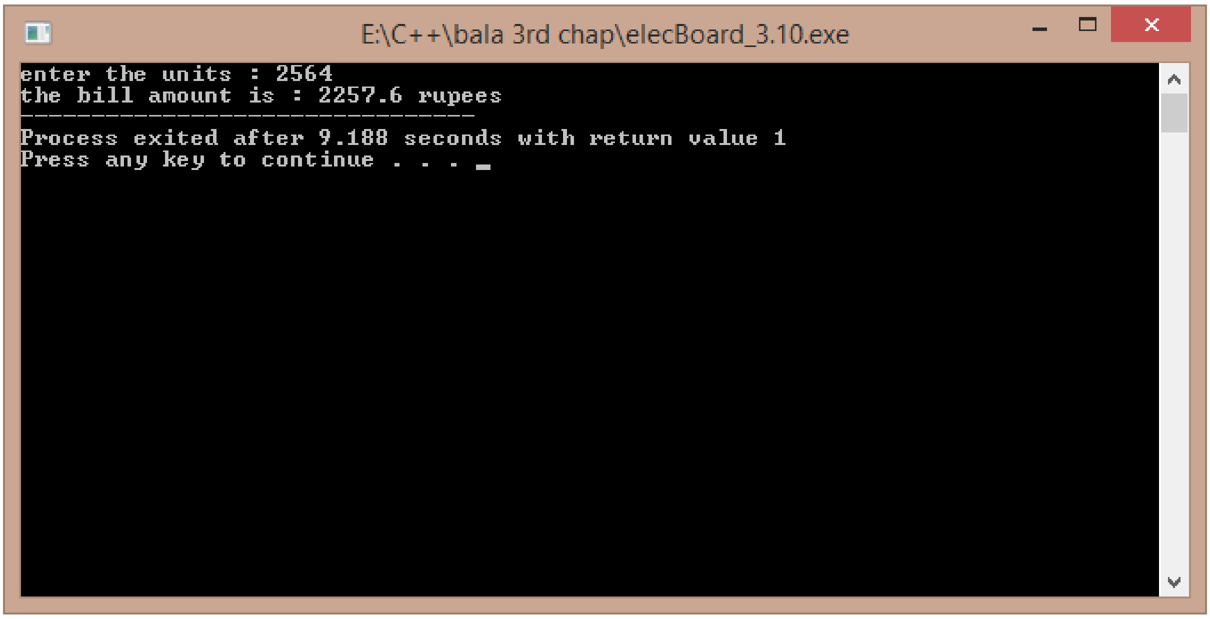
1)start

2)input the number of units

3)use the given rates to compute the rate using if elseif statements

4)end

```
/* A program to calculate the current bill by the input of current units. Developed by Sekhar Karedla
        CSE-2 BE ¼ ,CBIT*/


#include<iostream>

using namespace std;

int main()

{

    float u,sum;

    cout<<"enter the units : ";          //entering the  units

    cin>>u;

    if(u<100)

    {
        sum=u*60;

    }

    else if(u>100&&u<=300)

    {

        sum=(100*60)+(u-100)*80;            //calculating the bill

    }

    else

    {

        sum=(100*60)+(200*80)+(u-300)*90;

    }

    sum=sum/100;

    cout<<"the bill amount is : "<<sum<<" rupees";

return 1;

}
```



```
enter the units : 2564
the bill amount is : 2257.6 rupees
--------------------------------
Process exited after 9.188 seconds with return value 1
Press any key to continue . . .
```