Instructions: Please read carefully

- Please rename this file as only your ID number **(e.g. 18-*****-1.doc or 18-*****-1.pdf).**
- Submit the file before **11:00am on 08/02/2021** in the Portal Lab Performance section labeled **Lab task 3.** **If you cannot complete the full task, do not worry. Just upload what you have completed.**

Name:- Amit Podder

ID:- 20-42273-1

Section:- [F]

1. Find the summation of the boundary elements for the given array. Take input from user keyboard.

1	2	3	4	5
14	15	16	17	6
13	20	9	18	7
12	11	10	9	8

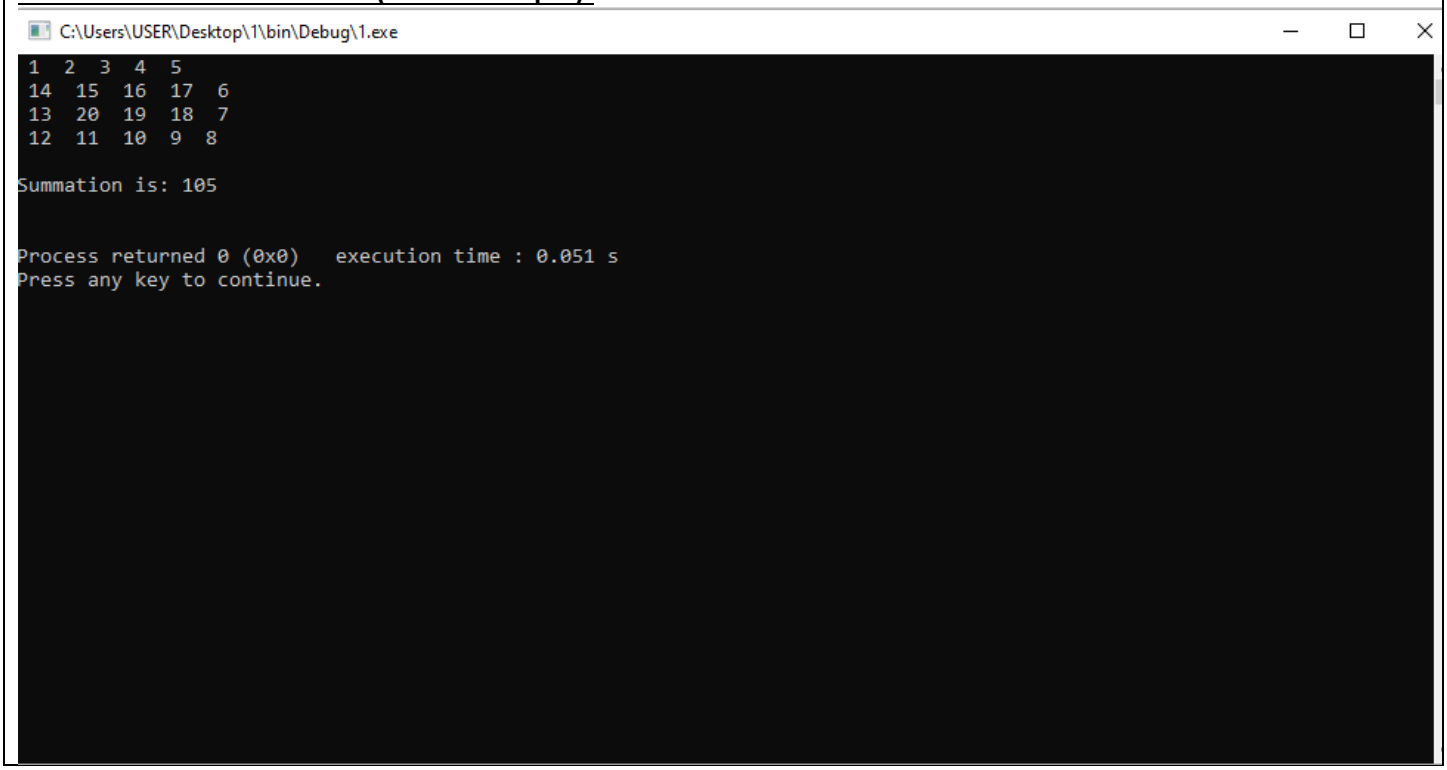
For example,
Matrix_1:
1 2 3 4 5
14 15 16 17 6
13 1 9 18 7
12 11 10 9 8
Output:
Summation is: 105

Your code here:

```
#include <iostream>

using namespace std;

int main()
{
  int a[4][5]={{1,2,3,4,5},{14,15,16,17,6},{13,20,19,18,7},{12,11,10,9,8}};
  int sum1=0;
  int sum2=0;
  int sum3=0;
  int sum4=0;

  for(int x=0;x<4;x++)
  {
     for(int y=0;y<5;y++)
     {
        cout<<" "<<a[x][y]<<" ";
     }
     cout<<endl;
  }
  cout<<" "<<endl;
  for(int i=0;i<5;i++)
  {
     sum1=sum1+a[0][i];
```

```
  }
  sum2=sum2+a[1][0]+a[1][4];
  sum3=sum3+a[2][0]+a[2][4];

  for(int j=0;j<5;j++)
  {
     sum4=sum4+a[3][j];
  }
  cout<<"Summation is: "<<sum1+sum2+sum3+sum4<<endl;
  cout<<endl;
}
```

Your whole Screenshot here: (Console Output):



2. Find the summation of the diagonal and anti-diagonal elements for the given array. Take input from user keyboard.

1	2	3	4	5
14	15	16	17	6
13	20	19	18	7
12	11	10	9	8
21	22	23	24	25

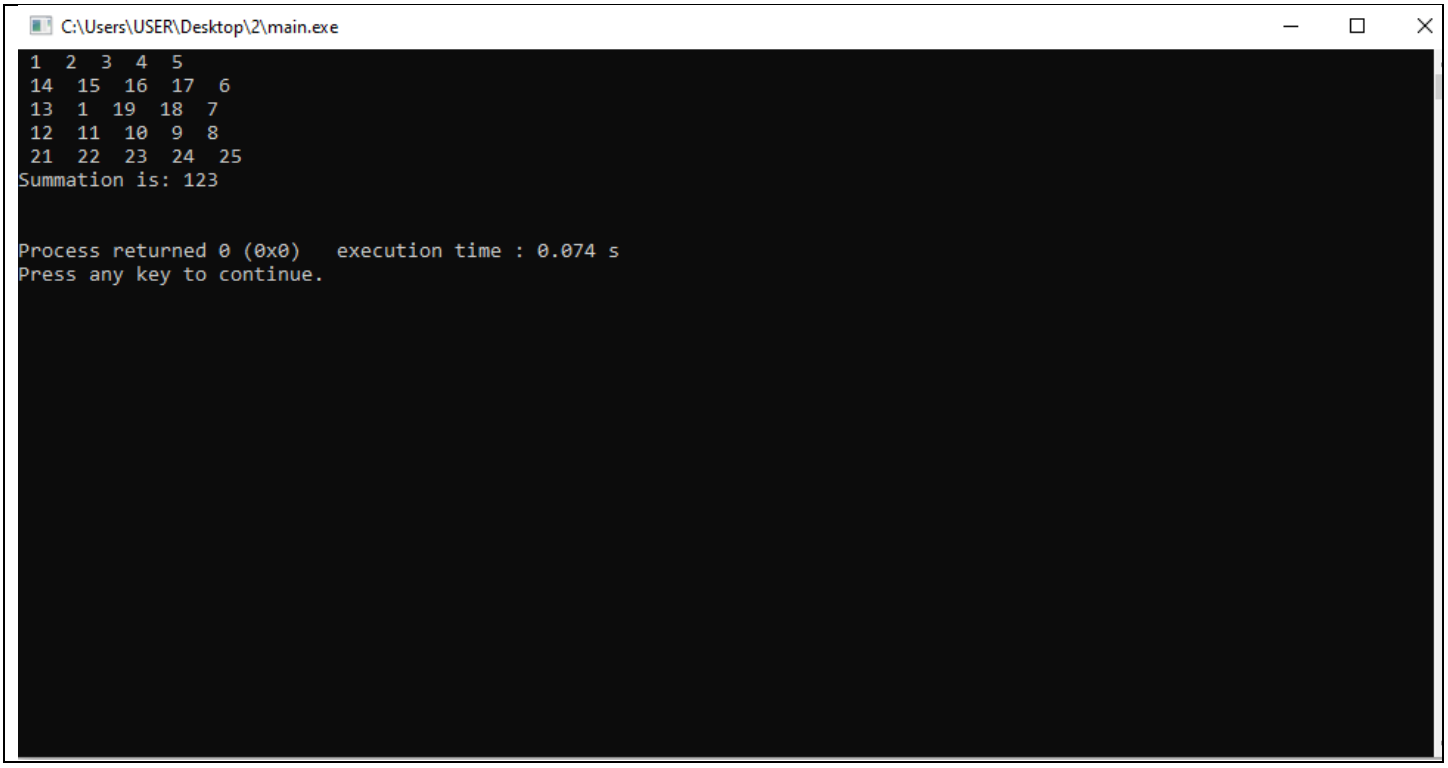
For example,
Matrix_1:
1 2 3 4 5
14 15 16 17 6
13 1 19 18 7

12 11 10 9 8
21 22 23 24 25
Output:
Summation is: 123

Your code here:

```
#include <iostream>

using namespace std;

int main()
{
   int a[5][5]={{1,2,3,4,5},{14,15,16,17,6},{13,1,19,18,7},{12,11,10,9,8},{21,22,23,24,25}};

   int sum=0;

   for(int m=0;m<5;m++)
   {
      for(int n=0;n<5;n++)
      {
         cout<<" "<<a[m][n]<<" ";
      }
      cout<<endl;
   }
   for(int k=0;k<5;k++)
   {
      for(int l=0;l<5;l++)
      {
         if(k==l)
         {
            sum=sum+a[k][l];
         }
         else if(k==(5-1)-l)
         {
            sum=sum+a[k][l];
            continue;
         }
      }
   }
   cout<<"Summation is: "<<sum<<endl;
   cout<<endl;
}
```

Your whole Screenshot here: (Console Output):



3. Write a code that will create custom ciphers (encoded words) on strings. Follow this procedure:
    1. Write a function named ***encode*** that takes TWO parameters, a string **s** and an integer **j**.
    2. Increase the ASCII value of the next character by 2 (leave white spaces).
    3. Perform step **(2)** throughout the string.
    4. Return the converted string from **encode** function.

For example,
Sample String (s): I am a student
Sample Integer (j): 2
Converted String: K co c uvwfgpv

Your code here:

Your whole Screenshot here: (Console Output):

4. Write a program with appropriate data structure to keep records of 10 students. Each student will have the following information:
    1. Unique ID (you can use *integer* for this)
    2. Number of Credits Completed
    3. CGPA

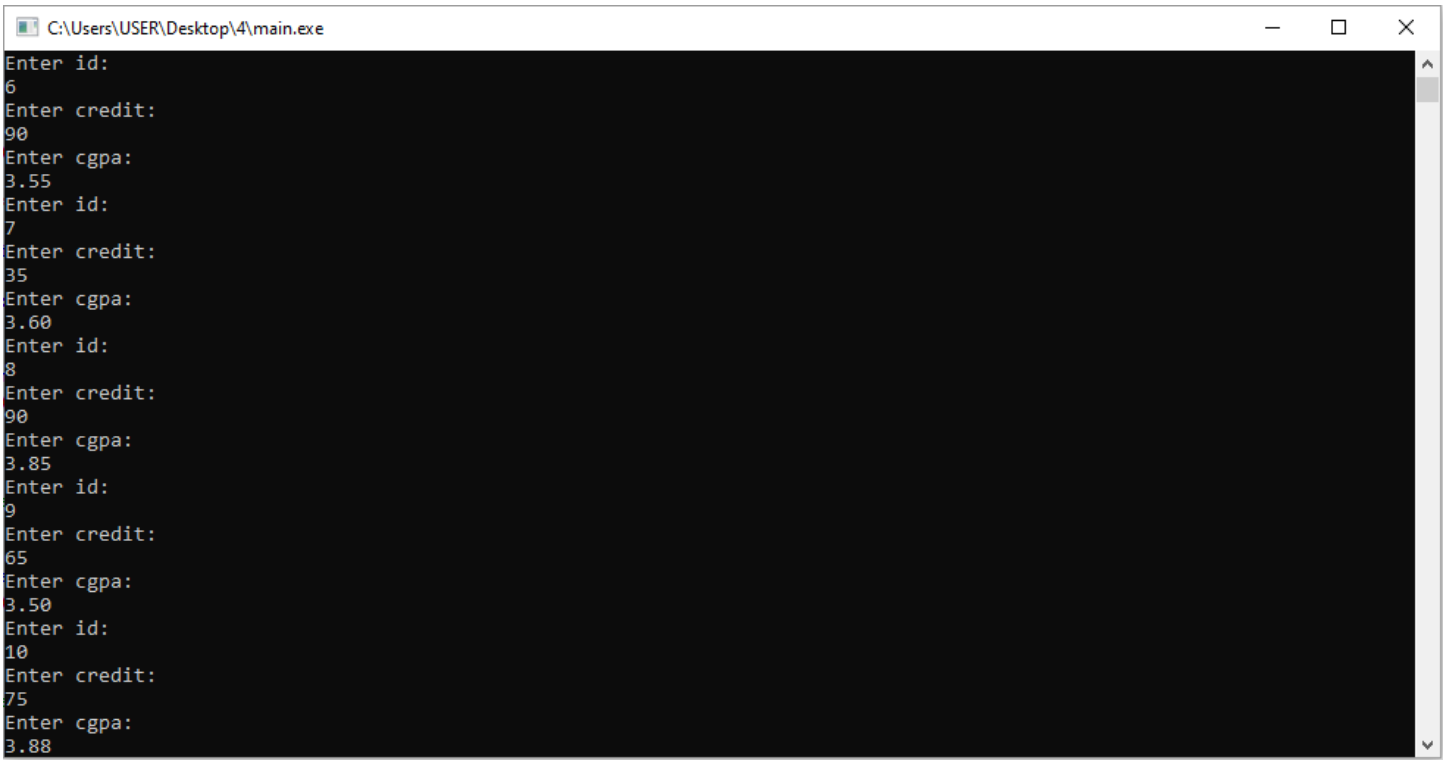
Print all the student's ID whose CGPA is more than **3.75**.
Print all the student's ID who has completed more than **50** credits.

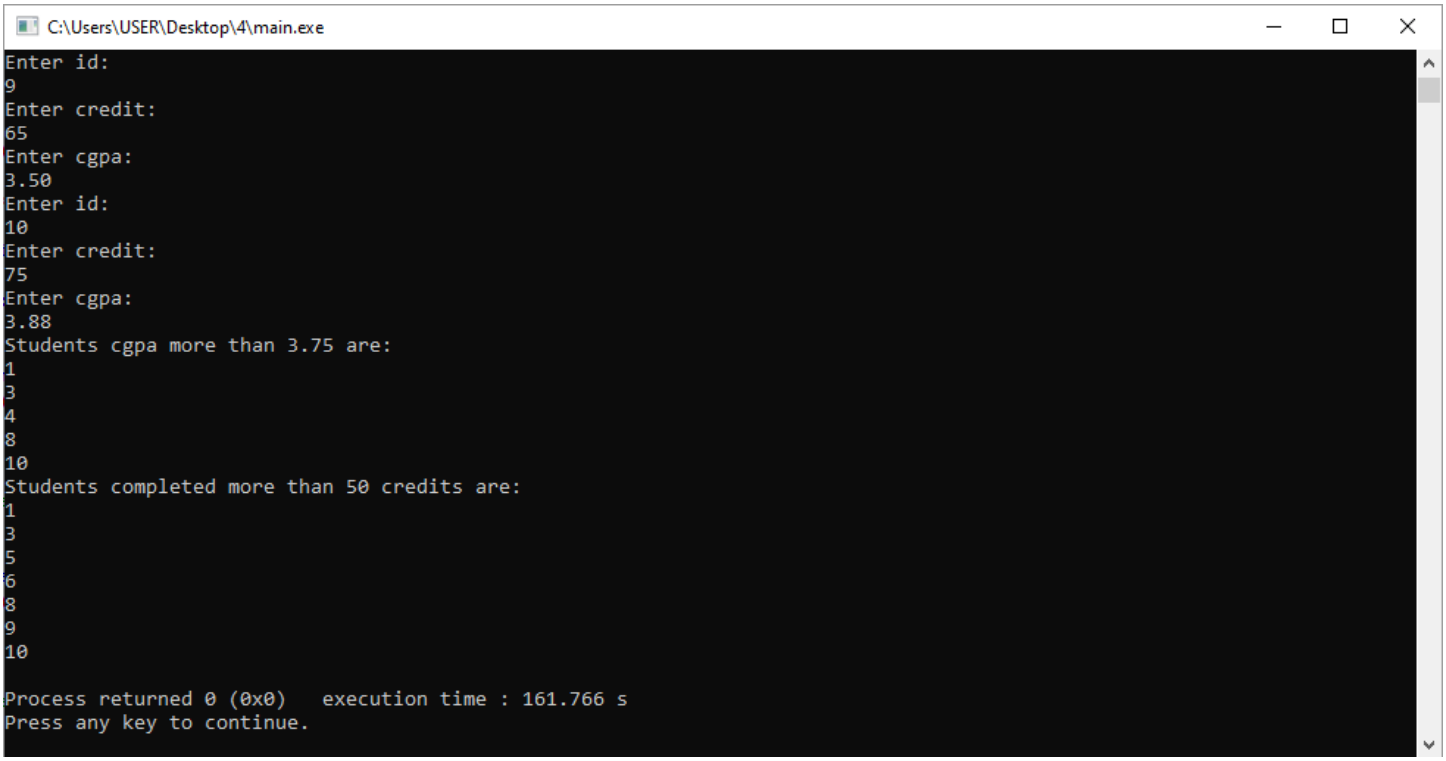
Your code here:

```
#include <iostream>

using namespace std;

int main()
{
   int id[10];
```

```
    int credit[10];
    float cgpa[10];

    for(int i=1;i<=10;i++)
    {
        cout<<"Enter id:"<<endl;
        cin>>id[i];
        cout<<"Enter credit:"<<endl;
        cin>>credit[i];
        cout<<"Enter cgpa:"<<endl;
        cin>>cgpa[i];
    }
    cout<<"Students cgpa more than 3.75 are:"<<endl;
    for(int j=1;j<=10;j++)
    {
        if(cgpa[j]>3.75)
        {
            cout<<id[j]<<endl;
        }
    }
    cout<<"Students completed more than 50 credits are:"<<endl;
    for(int k=1;k<=10;k++)
    {
        if(credit[k]>50)
        {
            cout<<id[k]<<endl;
        }
    }
    return 0;
}
```

Your whole Screenshot here: (Console Output):


C:\Users\USER\Desktop\4\main.exe
Enter id:
6
Enter credit:
90
Enter cgpa:
3.55
Enter id:
7
Enter credit:
35
Enter cgpa:
3.60
Enter id:
8
Enter credit:
90
Enter cgpa:
3.85
Enter id:
9
Enter credit:
65
Enter cgpa:
3.50
Enter id:
10
Enter credit:
75
Enter cgpa:
3.88


C:\Users\USER\Desktop\4\main.exe
Enter id:
9
Enter credit:
65
Enter cgpa:
3.50
Enter id:
10
Enter credit:
75
Enter cgpa:
3.88
Students cgpa more than 3.75 are:
1
3
4
8
10
Students completed more than 50 credits are:
1
3
5
6
8
9
10
Process returned 0 (0x0) execution time : 161.766 s
Press any key to continue.