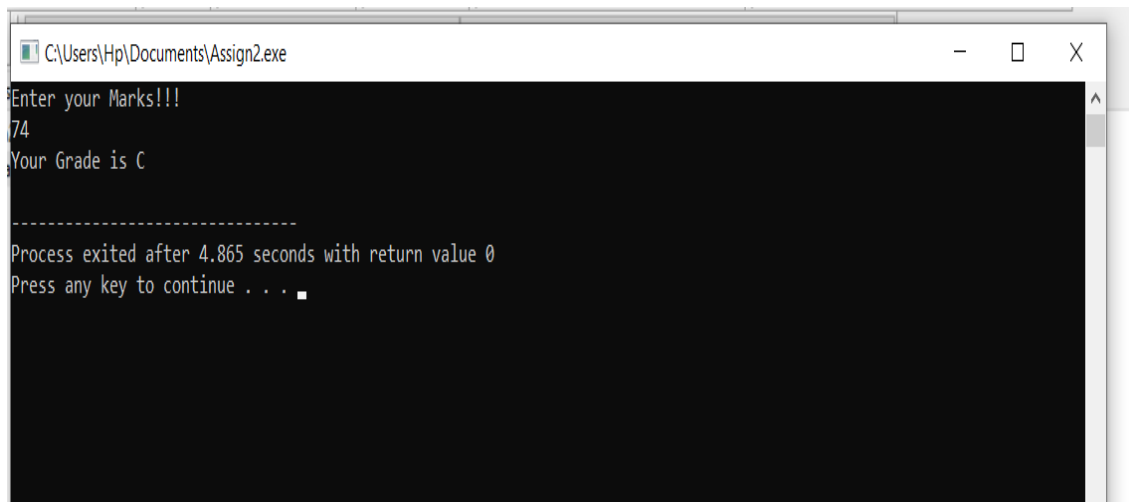


Name: Fahad Asif

CMS ID: 462895

Task 1

```
Untitled1 Grades.cpp
1  #include <iostream>
2  using namespace std;
3  int main(){
4      int marks;
5      cout<<"Enter your Marks!!!"<<endl;
6      cin>>marks;
7      if (marks>=90 && marks<=100){
8          cout<<"Your Grade is A"<<endl;
9      }
10     }
11     else if (marks>=75 && marks<=90){
12         cout<<"Your Grade is B"<<endl;
13     }
14     else if (marks>=60 && marks<=75){
15         cout<<"Your Grade is C"<<endl;
16     }
17     }else if (marks>=45 && marks<=60){
18         cout<<"Your Grade is D"<<endl;
19     }
20     }else if (marks>=0 && marks<=45){
21         cout<<"Your Grade is F, You are fail!!"<<endl;
22     }
23
24
25
26 }
```



```
C:\Users\Hp\Documents\Assign2.exe
Enter your Marks!!!
74
Your Grade is C

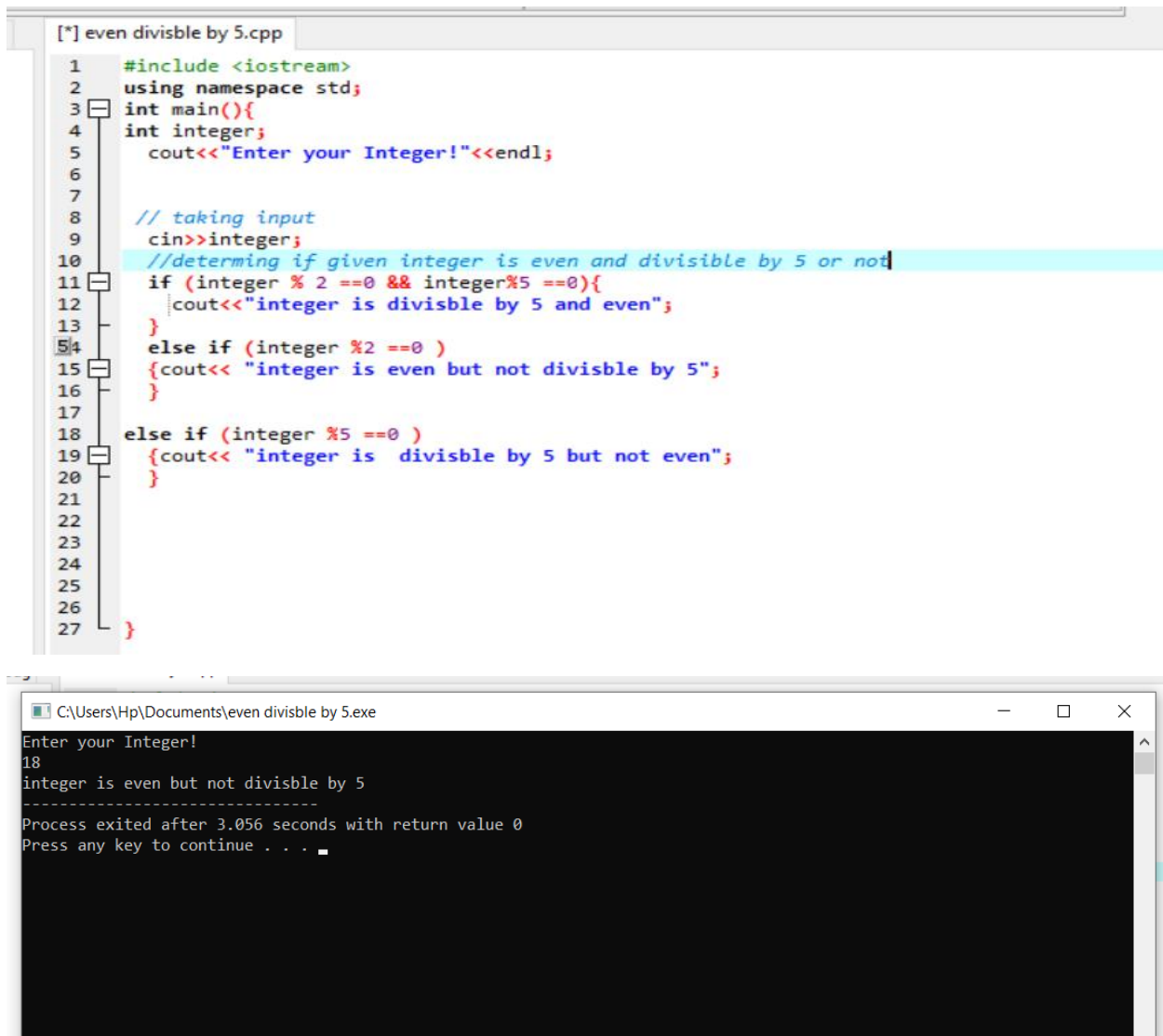
-----
Process exited after 4.865 seconds with return value 0
Press any key to continue . . .
```

Explanation:

In this code, student is asked to enter their marks , based on their marks they are assigned grades!

If student has number between 90 to 100 they get A Grade, when marks are 75 to 90 , b grade is assigned, when marks are between 60-75 , C grade is Assigned, when marks are between 45 to 60, F Grade is assigned.....

Task 2



The image shows a C++ code editor window titled "[*] even divisible by 5.cpp" and a terminal window titled "C:\Users\Hp\Documents\even divisible by 5.exe".

The code in the editor is as follows:

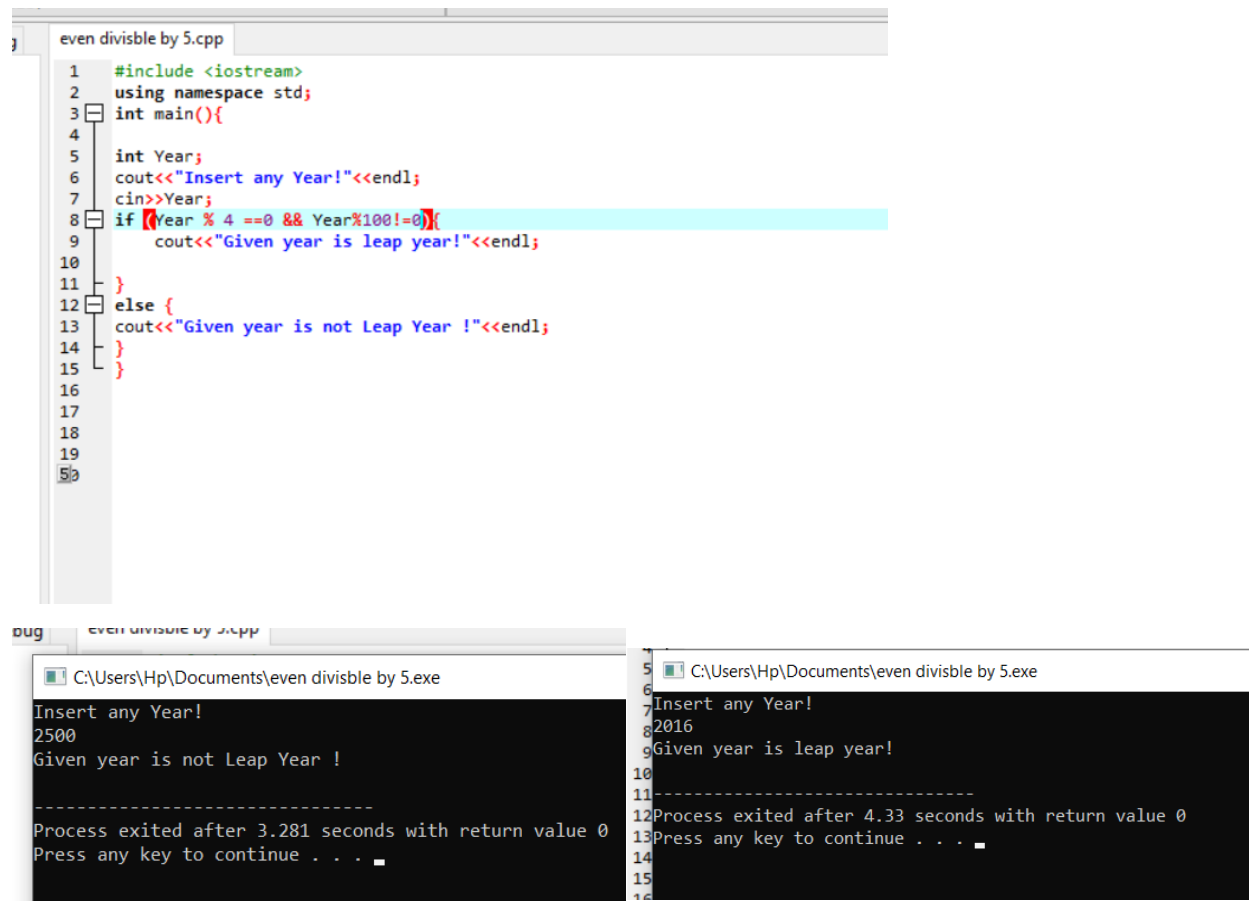
```
1  #include <iostream>
2  using namespace std;
3  int main(){
4  int integer;
5  cout<<"Enter your Integer!"<<endl;
6
7
8  // taking input
9  cin>>integer;
10 //determining if given integer is even and divisible by 5 or not
11 if (integer % 2 ==0 && integer%5 ==0){
12     cout<<"integer is divisible by 5 and even";
13 }
14 else if (integer %2 ==0 )
15 {cout<< "integer is even but not divisible by 5";
16 }
17
18 else if (integer %5 ==0 )
19 {cout<< "integer is  divisible by 5 but not even";
20 }
21
22
23
24
25
26
27 }
```

The terminal window shows the execution of the program. It prompts "Enter your Integer!" and the user has entered "18". The output is "integer is even but not divisible by 5". Below this, it says "Process exited after 3.056 seconds with return value 0" and "Press any key to continue . . .".

Explanation:

In this code, an integer is taken as input and determined whether the given integer is even and also if it is divisible by 5 or not. If the inserted number is both even and divisible by 5, then IF command runs and results are displayed. . If the inserted number is only even then "else if" command runs and results are displayed. . If the inserted number is divisible by 5, then "else if" command runs and results are displayed as given integer is divisible by 5.

Task 3



The image shows a C++ program in a code editor and two screenshots of its execution. The code is a program to check if a year is a leap year. It uses the logic: a year is a leap year if it is divisible by 4 and not divisible by 100, or if it is divisible by 400. The program prompts the user to 'Insert any Year!' and outputs 'Given year is leap year!' or 'Given year is not Leap Year !'.

```
1 #include <iostream>
2 using namespace std;
3 int main(){
4
5     int Year;
6     cout<<"Insert any Year!"<<endl;
7     cin>>Year;
8     if (Year % 4 == 0 && Year%100!=0){
9         cout<<"Given year is leap year!"<<endl;
10    }
11 }
12 else {
13     cout<<"Given year is not Leap Year !"<<endl;
14 }
15 }
```

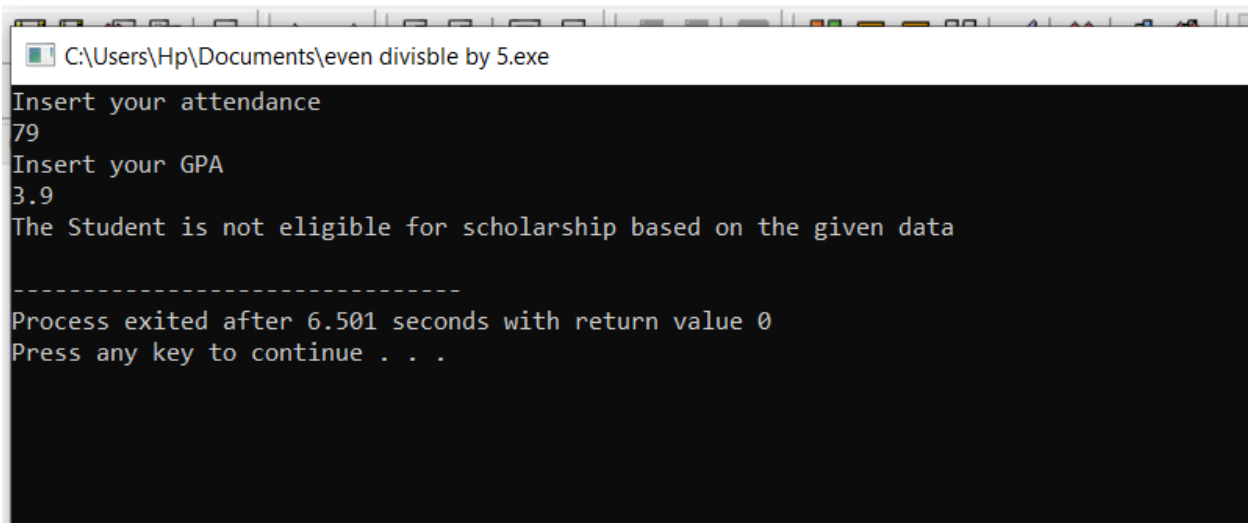
The first execution screenshot shows the program running with the input 2500, resulting in the output 'Given year is not Leap Year !'. The second execution screenshot shows the program running with the input 2016, resulting in the output 'Given year is leap year!'.

Explanation:

In this code, a year is taken as input from user and it is determined if given year is leap year or not, Leap year occur after every 4 year and every century is also leap year expect for years which are divisible by 100 but not divisible by 400. if given year is divisible by 4 and remainder is 0 then it is leap year and if inserted century is divisible by 400 then it is not leap year

Task 4

```
1 #include <iostream>
2 using namespace std;
3 int main(){
4
5     float attendance,GPA;
6     // getting data for attendance
7     cout << "Insert your attendance"<<endl;
8     cin >> attendance;
9     // getting data for GPA
10    cout << "Insert your GPA"<<endl;
11    cin >> GPA;
12    // using if, else statement to process the problem
13    if (GPA>=3.5 && attendance>=80){
14
15        cout<<"The Student is eligible for scholarship based on the given data"<<endl;
16
17    } else {
18        cout<< "The Student is not eligible for scholarship based on the given data"<<endl;
19    }
20 }
21
22
```



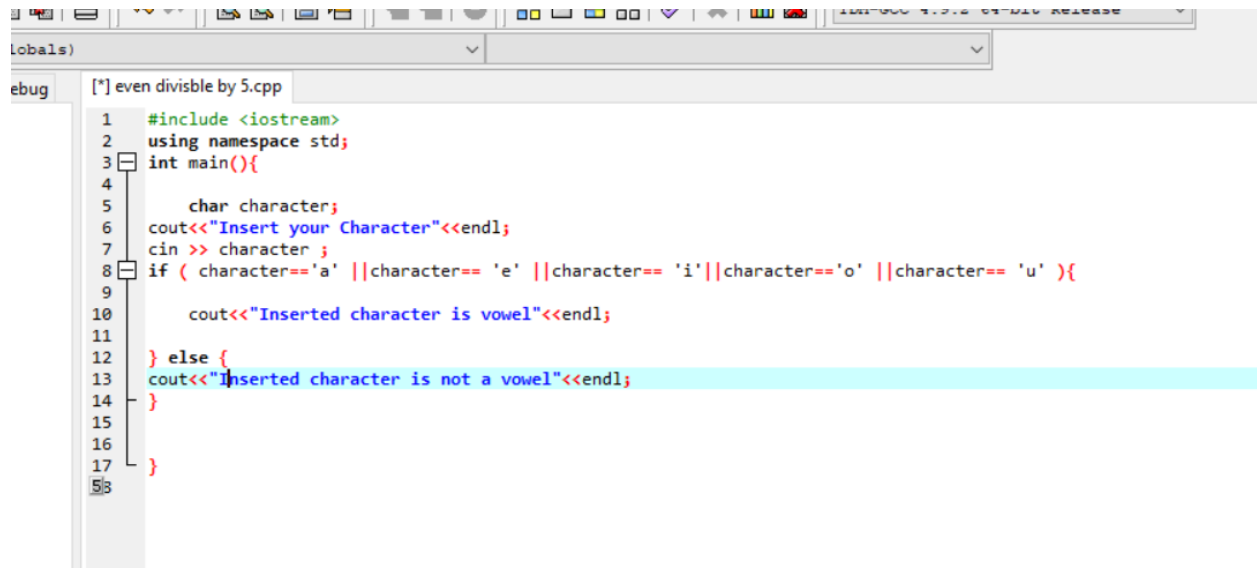
```
C:\Users\Hp\Documents\even divisible by 5.exe
Insert your attendance
79
Insert your GPA
3.9
The Student is not eligible for scholarship based on the given data

-----
Process exited after 6.501 seconds with return value 0
Press any key to continue . . .
```

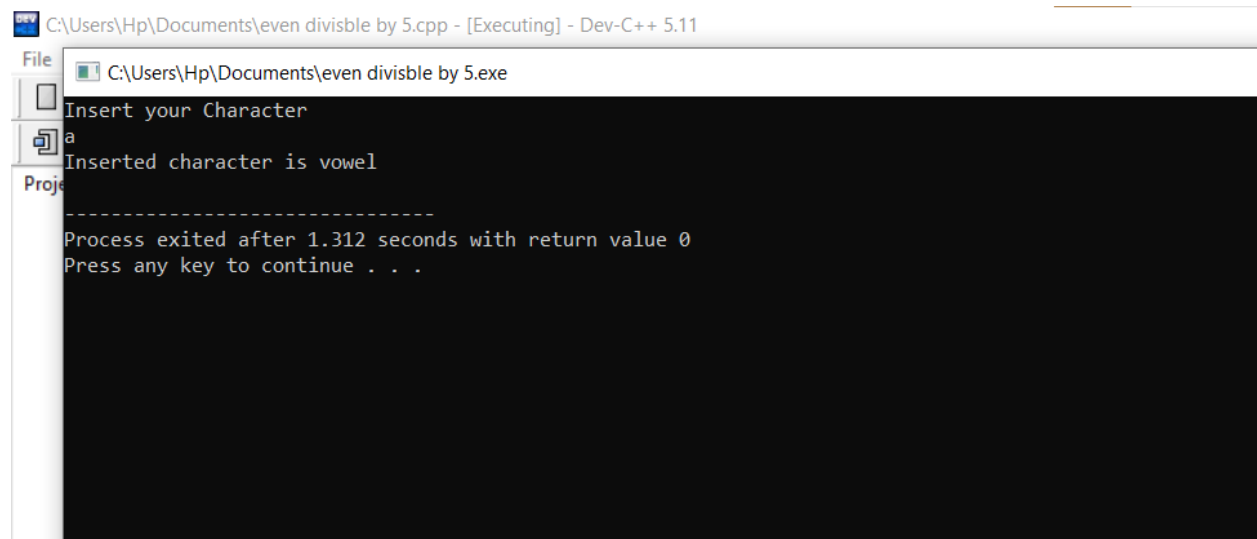
Explanation:

In this program, user input the GPA and attendance. If GPA is greater than 3.5 and also attendance of student is above 80% then student is awarded scholarship. if both conditions are not met, then student is not awarded scholarship. it uses "IF" condition to determine if given GPA and Attendance are above 3.5 and 80% or not, respectively.

Task5



```
1  #include <iostream>
2  using namespace std;
3  int main(){
4
5      char character;
6      cout<<"Insert your Character"<<endl;
7      cin >> character ;
8      if ( character=='a' ||character== 'e' ||character== 'i' ||character=='o' ||character== 'u' ){
9
10         cout<<"Inserted character is vowel"<<endl;
11
12     } else {
13         cout<<"Inserted character is not a vowel"<<endl;
14     }
15
16
17 }
18
```



```
C:\Users\Hp\Documents\even divisble by 5.cpp - [Executing] - Dev-C++ 5.11
File C:\Users\Hp\Documents\even divisble by 5.exe
Insert your Character
a
Inserted character is vowel
-----
Process exited after 1.312 seconds with return value 0
Press any key to continue . . .
```

Explanation:

In this code , user inputs a character then “if” condition is use to determine if it is a vowel or not.