

Assignment 2
Due date 11-12-2021, 11:59 PM
Waad

1- Given the following program, show the corresponding output on the screen (assume that the user entered gpa=1.8)

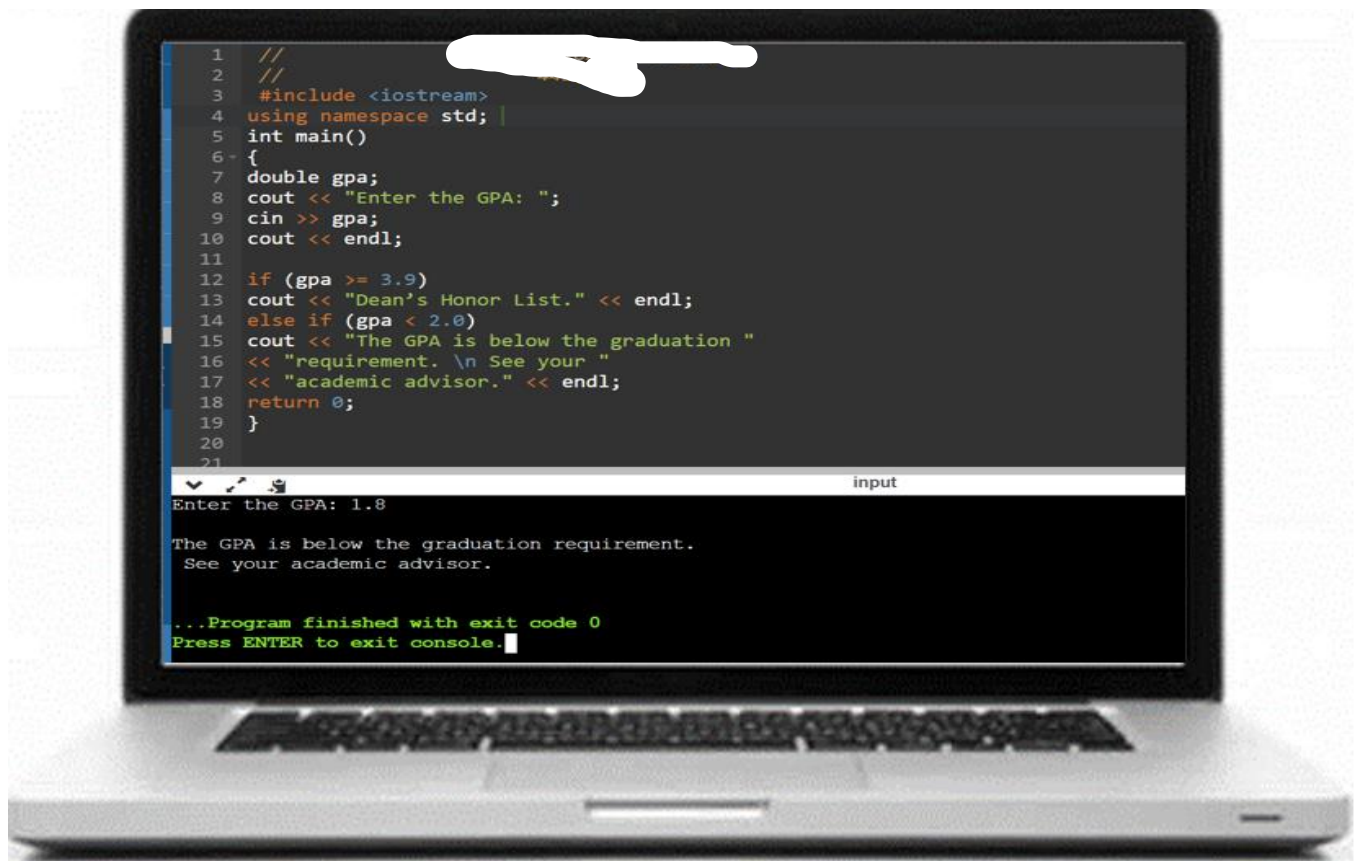
```
#include <iostream>
using namespace std;

int main()
{
double gpa;

cout << "Enter the GPA: ";
cin >> gpa;
cout << endl;

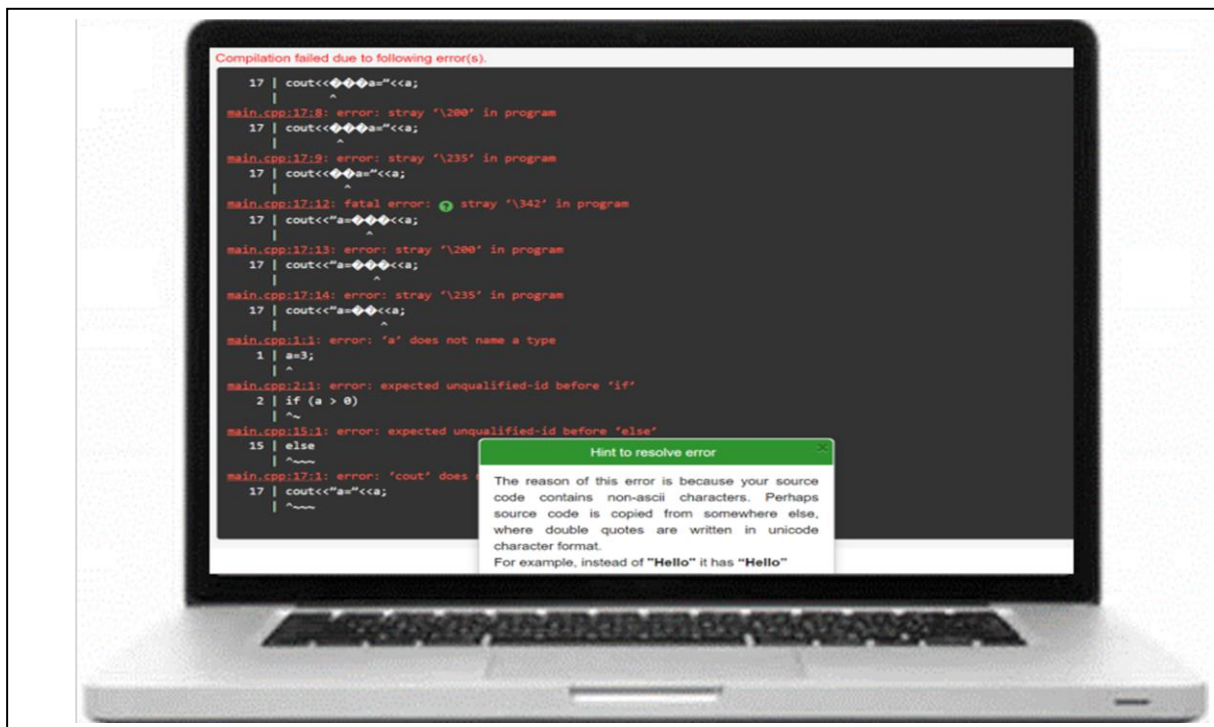
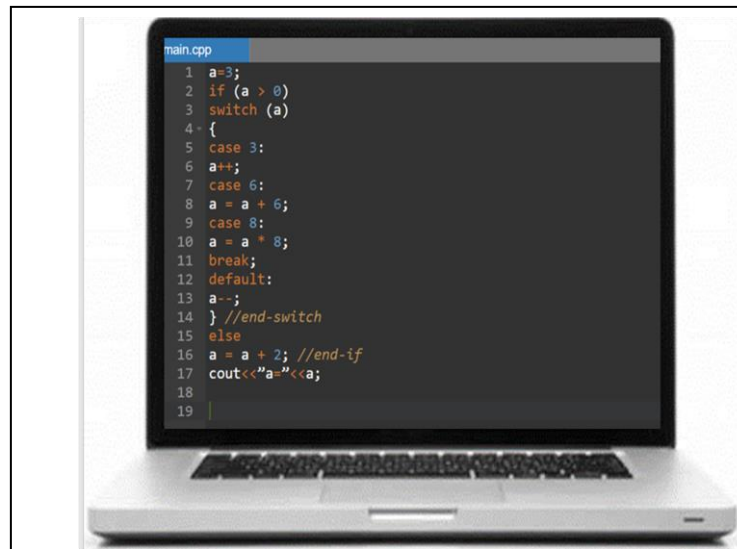
if (gpa >= 3.9)
cout << "Dean\'s Honor List." << endl;
else if (gpa < 2.0)
    cout << "The GPA is below the graduation "
    << "requirement. \n See your "
    << "academic advisor." << endl;

return 0;
}
```



2- Show screen output after running the following C++ program segment:

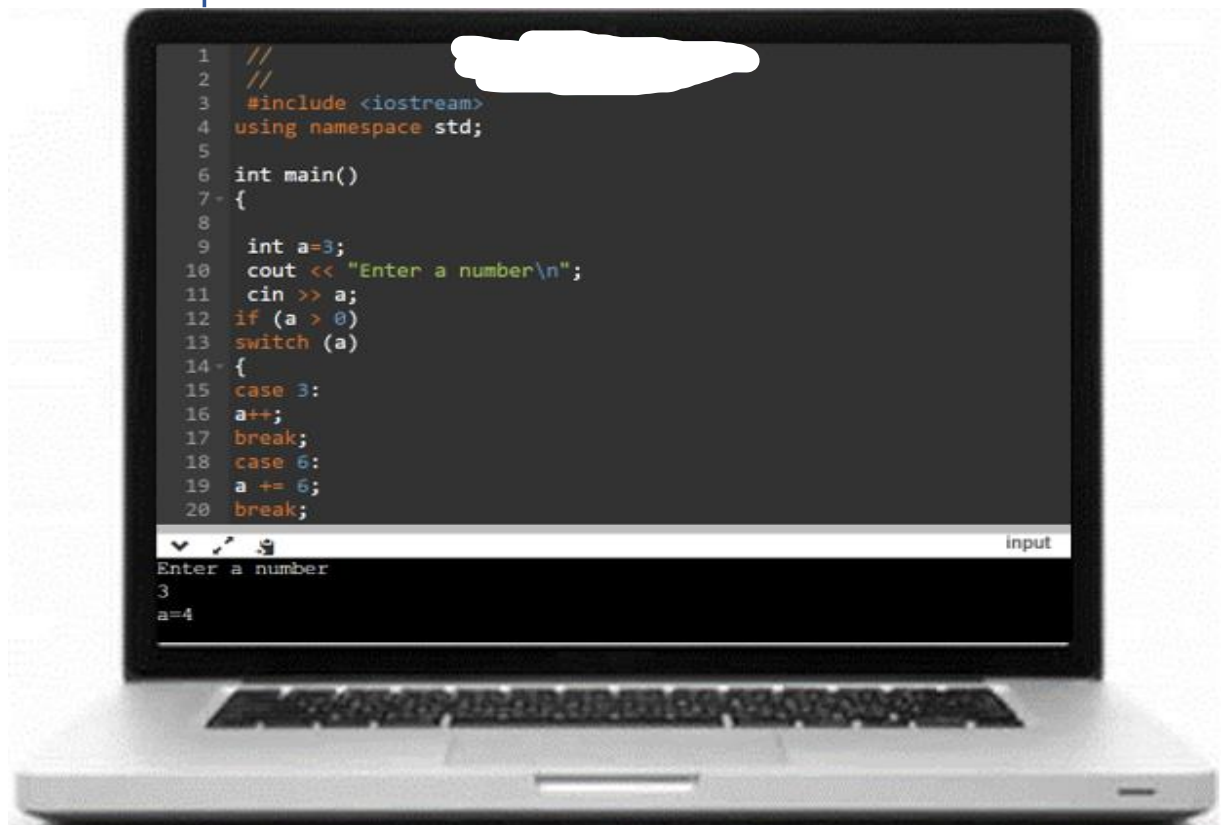
```
a=3;
if (a > 0)
switch (a)
{
case 3:
a++;
case 6:
a = a + 6;
case 8:
a = a * 8;
break;
default:
a--;
} //end-switch
else
a = a + 2; //end-if
cout<<"a="<<a;
```



After the amendment



The output



3- Show screen output after running the following C++ program:

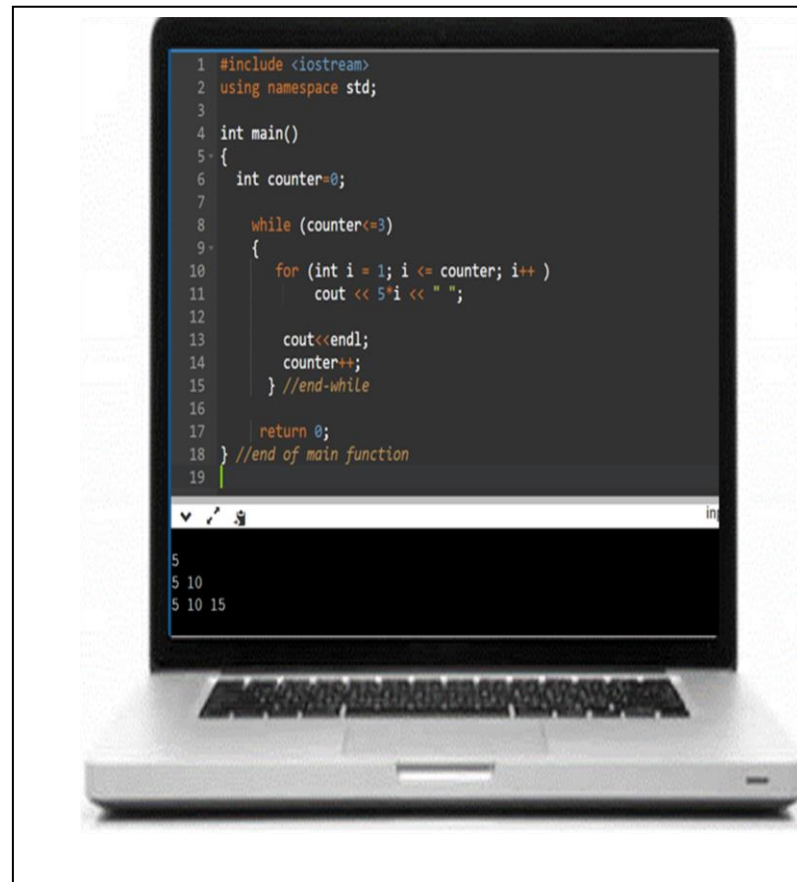
```
#include <iostream>
using namespace std;

int main()
{
    int counter=0;

    while (counter<=3)
    {
        for (int i = 1; i <= counter; i++ )
            cout << 5*i << " ";

        cout<<endl;
        counter++;
    } //end-while

    return 0;
} //end of main function
```



4- Rewrite the following program segment using an IF statement:

```
#include <iostream>
using namespace std;

int main ()
{
    char grade = 'D';

    switch(grade)
    {
        case 'A' :
            cout << "Excellent!" << endl;
            break;

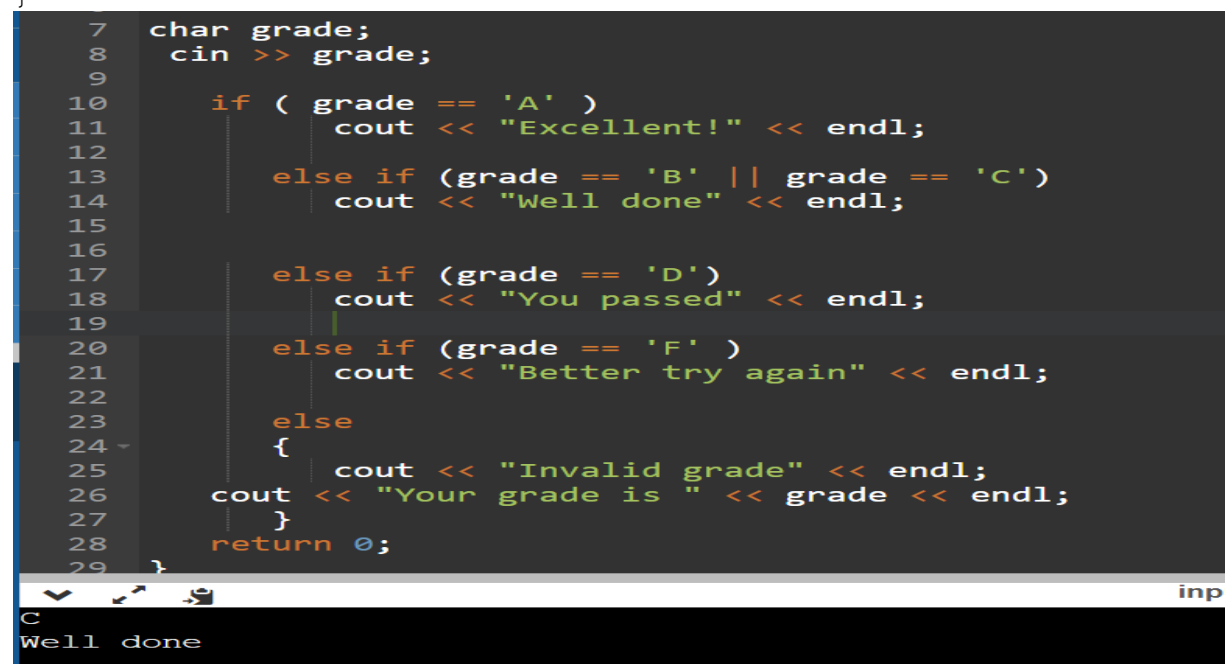
        case 'B' :

        case 'C' :
            cout << "Well done" << endl;
            break;

        case 'D' :
            cout << "You passed" << endl;
            break;

        case 'F' :
            cout << "Better try again" << endl;
            break;

        default :
            cout << "Invalid grade" << endl;
    }
    cout << "Your grade is " << grade << endl;
    return 0;
}
```

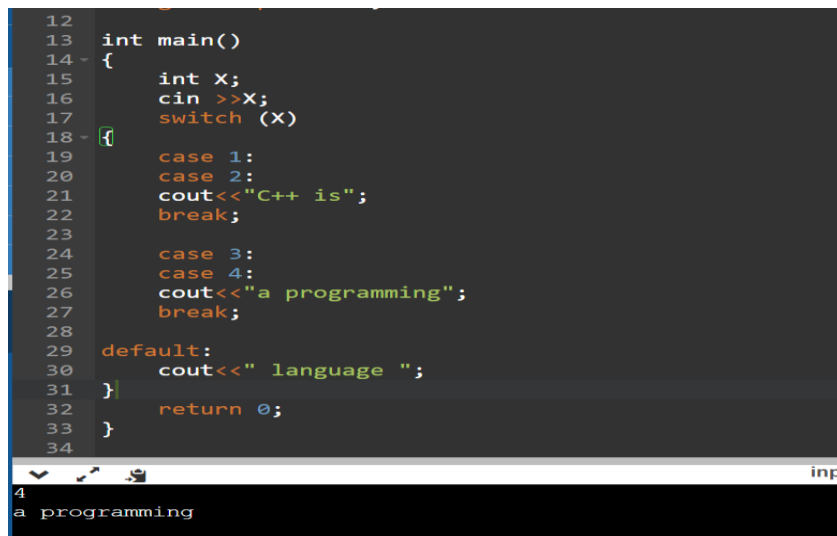
A screenshot of a code editor showing a C++ program. The program defines a character variable 'grade' and uses a series of if-else statements to check its value. If 'A', it prints 'Excellent!'. If 'B' or 'C', it prints 'Well done'. If 'D', it prints 'You passed'. If 'F', it prints 'Better try again'. Otherwise, it prints 'Invalid grade'. After the switch, it prints 'Your grade is ' followed by the value of 'grade'. The program returns 0. The editor shows line numbers from 7 to 29. Below the code, a terminal window shows the output 'Well done' after the user has entered 'C' at the prompt.

```
7 char grade;
8   cin >> grade;
9
10  if ( grade == 'A' )
11      cout << "Excellent!" << endl;
12
13  else if (grade == 'B' || grade == 'C')
14      cout << "Well done" << endl;
15
16
17  else if (grade == 'D')
18      cout << "You passed" << endl;
19
20  else if (grade == 'F' )
21      cout << "Better try again" << endl;
22
23  else
24  {
25      cout << "Invalid grade" << endl;
26  }
27  cout << "Your grade is " << grade << endl;
28  return 0;
29 }
```

C
Well done

5- Rewrite the following program segment using a switch statement:

```
if (x == 1 || x == 2){
    cout<<"C++ is";
}
else if (x == 3 || x == 4){
    cout<<"a programming";
}
else{
    cout<<" language";
}
```



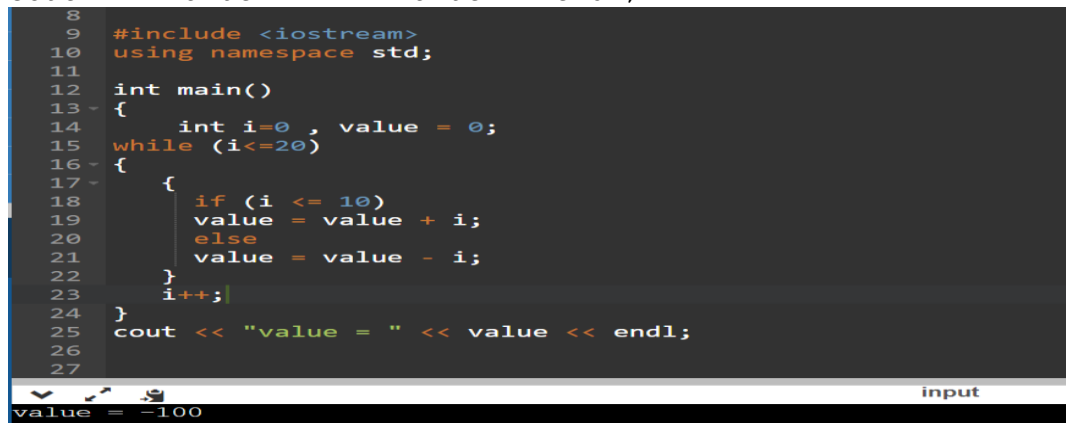
The screenshot shows a C++ IDE with a switch statement implementation. The code is as follows:

```
12
13 int main()
14 {
15     int x;
16     cin >> x;
17     switch (x)
18     {
19         case 1:
20         case 2:
21             cout<<"C++ is";
22             break;
23
24         case 3:
25         case 4:
26             cout<<"a programming";
27             break;
28
29         default:
30             cout<<" language ";
31     }
32     return 0;
33 }
34
```

Below the code, the input '4' is shown, and the output 'a programming' is displayed.

6- Rewrite the following program segment using a While loop.

```
value=0;
for (int i=0; i<=20;i++)
{
    if (i <= 10)
        value = value + i;
    else
        value = value - i;
}
cout << "value = " << value << endl;
```



The screenshot shows a C++ IDE with a while loop implementation. The code is as follows:

```
8
9 #include <iostream>
10 using namespace std;
11
12 int main()
13 {
14     int i=0 , value = 0;
15     while (i<=20)
16     {
17         {
18             if (i <= 10)
19                 value = value + i;
20             else
21                 value = value - i;
22         }
23         i++;
24     }
25     cout << "value = " << value << endl;
26
27
```

Below the code, the input 'input' is shown, and the output 'value = -100' is displayed.

7- Given the following program, show the corresponding output on the screen:

```
#include <iostream>
using namespace std;
int main()
{
    int firstList[5]={3,7};
    int secondList[5]={1,9,6};
    int i;
    for(i = 0; i < 5; i++)
        if (firstList[i]>secondList[i])
            cout<<firstList[i]<<endl;
        else if (firstList[i]<secondList[i])
            cout<< secondList[i]<<endl;
        else
            cout<<"equal"<<endl;
    return 0;
}
```

