



NATIONAL UNIVERSITY OF SCIENCE & TECNOLOGY

SCHOOL OF MECHANICAL AND MANUFACTURING ENGINEERING

[FUNDAMENTALS OF PROGRAMMING (Lab)]

Home task # 2

SEMESTER # 01

CLASS: - ME-15 [SEC A]

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```
#include<iostream>
using namespace std;
int main()
{
```

// Task number 1

```
//Assigning grades to students based on marks.
int marks;
// input the marks from user.
cout<<"Enter the value of marks of student . "<<endl;
cin>>marks;
```

```
// for grade A.
if(marks>=90&&marks<=100){
cout<<"The Grade is A:"<<endl;}
```

```
// for grade B.
else if(marks>=75&&marks<90){
cout<<"The Grade is B:"<<endl;}
```

```
// for grade C.
else if(marks>=60&&marks<75){
cout<<"The Grade is C:"<<endl;}
```

```
// for grade D.
else if(marks>=45&&marks<60){
cout<<"The Grade is D:"<<endl;}
```

```
// for grade F.
else {
cout<<"The Grade is F:"<<endl;}
```

```
return 0;
```

```
1  #include<iostream>
2  using namespace std;
3  int main()
4  {
5      cout<<"*Task number 1*"<<endl;
6      //Assigning grades to students based on marks.
7      int marks;
8      // input the marks from user.
9      cout<<"Enter the value of marks of student . "<<endl;
10     cin>>marks;
11     // for grade A.
12     if(marks>=90&&marks<=100){
13         cout<<"The Grade is A:"<<endl;}
```

```
14
15     // for grade B.
16     else if(marks>=75&&marks<90){
17         cout<<"The Grade is B:"<<endl; }
```

```
18
19     // for grade C.
20     else if(marks>=60&&marks<75){
21         cout<<"The Grade is C:"<<endl;}
```

```
22
23     // for grade D.
24     else if(marks>=45&&marks<60){
25         cout<<"The Grade is D:"<<endl;}
```

```
26
27     // for grade E.
28     else {
29         cout<<"The Grade is F:"<<endl;}
```

```
30
31     return 0;
32 }
```

```
*Task number 1*
Enter the value of marks of student .
78
The Grade is B:

-----
Process exited after 4.879 seconds with return value 0
Press any key to continue . . .
```

// Task number 2

// check if given number is even and divisible by 5

int x;

// input value of x from user.

cout<<"enter value of x."<<endl;

cin>>x;

// if number is both even and divisible by 5.

if(x%2==0&& x%5==0){

cout<<"x is even number and also divisible by 5."<<endl;}

// if number is not even but divisible by 5.

else if(x%2!=0&& x%5==0){

cout<<"x is not even number but divisible by 5."<<endl;}

// if number is not divisible by 5 but is even.

else if(x%2==0&& x%5!=0){

cout<<"x is even number but not divisible by 5."<<endl;}

// if number is neither even nor multiple of 5.

else {

cout<<"x is not even number and not divisible by 5."<<endl;}

return 0;

```

36 cout<<"task number 2."<<endl;
37 // check if given number is even and divisible by 5
38 int x;
39 // input value of x from user.
40 cout<<"enter value of x."<<endl;
41 cin>>x;
42
43 // if number is both even and divisible by 5.
44 if(x%2==0&&x%5==0){
45     cout<<"x is even number and also divisible by 5."<<endl;
46 }
47 // if number is not even but divisible by 5.
48 else if(x%2!=0&&x%5==0){
49     cout<<"x is not even number but divisible by 5."<<endl;
50 }
51 // if number is not divisible by 5 but is even.
52 else if(x%2==0&&x%5!=0){
53     cout<<"x is even number but not divisible by 5."<<endl;
54 }
55 // if number is neither even nor multiple of 5.
56 else {
57     cout<<"x is not even number and not divisible by 5."<<endl;
58 }
59 return 0;
60

```

```

task number 2.
enter value of x.
35
x is not even number but divisible by 5.
-----
Process exited after 9.523 seconds with return value 0
Press any key to continue . . .

```

// Task number 3

```
// input a year from user to check for leap year.
cout<<"Enter the year."<<endl;
int year;
cin>>year;

// if the given year is counted as a leap year.
if (year%4==0){
cout<<"Given year is a leap year."<<endl;}

// if the provided year is not the leap year.
else{
cout<<"Given year is not a leap year."<<endl;}

return 0;
```

```
65 cout<<"Task number 3."<<endl;
66 // input a year from user to check for Leap year.
67 cout<<"Enter the year."<<endl;
68 int year;
69 cin>>year;
70
71 // if the given year is counted as a leap year.
72 if (year%4==0){
73     cout<<"Given year is a leap year."<<endl;}
74
75 // if the provided year is not the leap year.
76 else{
77     cout<<"Given year is not a leap year."<<endl;}
78
79 return 0;
```

```
Task number 3.
Enter the year.
2028
Given year is a leap year.

-----
Process exited after 9.838 seconds with return value 0
Press any key to continue . . .
```

// Task number 4

//checking for student's eligibility for scholarship on GPA and attendance basis.

float GPA;

// input GPA and attendance percentage from user.

cout<<"Enter the value of GPA ."<<endl;

cin>>GPA;

cout<<"Enter the percentage of attendance."<<endl;

//using float here because percentage can be in decimal places such as 76.3%

float attendance;

cin>>attendance;

// student is eligible for scholarship if GPA and attendance % is greater or equal to 3.5 and 80 % respectively.

if(GPA>=3.5&&attendance>=80){

cout<<"The student is eligible for scholarship."<<endl;}

// if student is not eligible for scholarship.

else{

cout<<"the student is not eligible for scholarship."<<endl;}

return 0;

```
cout<<"*task number 4*"<<endl;
//checking for student's eligibility for scholarship on GPA and attendance basis.
float GPA;

// input GPA and attendance percentage from user.
cout<<"Enter the value of GPA ."<<endl;
cin>>GPA;
cout<<"Enter the percentage of attendance."<<endl;

//using float here because percentage can be in decimal places such as 76.3%
float attendance;
cin>>attendance;

// student is eligible for scholarship if GPA and attendance % is greater or equal to 3.5 and 80 % respectively.
] if(GPA>=3.5&&attendance>=80){
- cout<<"The student is eligible for scholarship."<<endl;

// if student is not eligible for scholarship.
] else{
- cout<<"the student is not eligible for scholarship."<<endl;

return 0;
```

```
*task number 4*
Enter the value of GPA .
3.6
Enter the percentage of attendance.
79
the student is not eligible for scholarship.

-----
Process exited after 10.72 seconds with return value 0
Press any key to continue . . .
```

// Task number 5

```

char x;
// input x from user.
cout<<"Enter the value of x"<<endl;
cin>>x;

int a, e, i, o, u;
cout<<"the answer is:"<<endl;

// if x is a vowel letter.
if(x=='a' || x=='e' || x=='i' || x=='o' || x=='u'){
cout<<" x is a vowel."<<endl;}

// if x is not a vowel.
else{
cout<<" x is a constant."<<endl;}

return 0;
}

```

```

121 cout<<"*Task number 5*"<<endl;
122
123 char x;
124 // input x from user.
125 cout<<"Enter the value of x"<<endl;
126 cin>>x;
127
128 int a, e, i, o, u;
129 cout<<"the answer is:"<<endl;
130
131 // if x is a vowel letter.
132 if(x=='a' || x=='e' || x=='i' || x=='o' || x=='u'){
133 cout<<" x is a vowel."<<endl;}
134
135 // if x is not a vowel.
136 else{
137 cout<<" x is a constant."<<endl;}
138
139 return 0;
140
141 }

```

```

*Task number 5*
Enter the value of x
i
the answer is:
 x is a vowel.

-----
Process exited after 1.775 seconds with return value 0
Press any key to continue . . .

```