

TUTORIAL

nested-if statements

Chapter

1. nested-if statements

Topics

1.6 if-else statement

if statements can be nested with other if statements. This is known as nested if statements. For example,

```
1 #include <stdio.h>
2
3 int main()
4 {
5     int marks;
6     marks = 67;
7
8     if(marks >= 40)
9     {
10         if(marks < 60)
11         {
12             printf("You are pass.");
13         }
14         else
15         {
16             printf("You got 1st division.");
```

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```
17     }
18 }
19 else
20 {
21     printf("You are Fail, Study hard.");
22 }
23 return 0;
24 }
25
```

The second if is nested inside the first if. Similarly, we can nest up to any level depending on situation.

Notice the positions of else statements in above code. If we omit the braces, then else will be associated with the nearest if condition. It creates confusing code sometimes, so indenting the code is always a best practice to make the code more readable. For example,

```
1  #include <stdio.h>
2
3  int main()
4  {
5      int marks;
6      marks = 67;
7
8      if(marks >= 40)
9          if(marks < 60)
10             printf("You are pass.");
11     else
12         printf("You got 1st division.");
13
14     return 0;
15 }
16
```

The else is associated with second if. So always know what you are writing. Because the compiler will execute as per its specification if there are no syntax error. So you have to write your programs with utmost care.

if-else statement

Nesting can be done for if-else statements also. One if-else block can be completely inside other if block or else block, which indeed is a part of if block. This is popularly known as else-if ladder or if-else ladder. The general form of writing this type of statements is:

```
if (condition1)
    //do this thing
else
    if(condition2)
        // do this thing
    else
        if(condition3)
            // do this thing
        else
            // do this thing.
```

It creates an effect of ladder, thats why it is known as if-else ladder. For example, if we want to put the grades for marks of a student, we can write as below: -

```
if marks >= 90 then result is A+
else if marks >= 80 then result is A
else if marks >= 70 then result is B
else if marks >= 50 then result is C
else if marks >= 40 then result is D
else result is F
```

This can be written as below program.

```
1  #include <stdio.h>
2
3  int main()
4  {
5      int marks;
6      marks = 64;
7
8      if(marks >= 90)
9          printf("A+");
10     else if(marks >= 80)
11         printf("A");
12     else if(marks >= 70)
13         printf("B");
14     else if(marks >= 50)
15         printf("C");
16     else if(marks >= 40)
17         printf("D");
18     else
19         printf("F");
20
21     return 0;
22 }
23
```

C

