

A dark blue vertical bar runs down the left side of the page. A blue arrow points to the right from this bar, containing the date.

4/25/2021

Programming Fundamentals

Lab Manual 9

Several thin, curved lines in dark blue and light grey originate from the bottom left and sweep upwards and to the right, creating a sense of movement and design.

LAB 9 Manual

Programming Fundamentals

LAB TOPIC: Nested FOR Loop and Nested While loop

Nested loop means a loop statement inside another loop statement. That is why nested loops are also called as “loop inside loop”.

Syntax for Nested For loop:

```
for ( initialization; condition; increment ) {  
  
    for ( initialization; condition; increment ) {  
  
        // statement of inside loop  
    }  
  
    // statement of outer loop  
}
```

Syntax for Nested While loop:

```
while(condition) {  
  
    while(condition) {  
  
        // statement of inside loop  
    }  
  
    // statement of outer loop  
}
```

Example Program of FOR nested loop in C++

C++ program to display 7 days of 3 weeks

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

int main() {
    int weeks = 3, days_in_week = 7;

    for (int i = 1; i <= weeks; ++i) {
        cout << "Week: " << i << endl;

        for (int j = 1; j <= days_in_week; ++j) {
            cout << "    Day:" << j << endl;
        }
    }

    return 0;
}
```

Output

```
Week: 1
    Day:1
    Day:2
    Day:3
    ... ..
Week: 2
    Day:1
    Day:2
    Day:3
    ... ..
```

Lab Tasks

1. Calculate the average score of each player using the chart given:

1st player: 286 262 265

2nd player: 212 152 215

3rd bowler: 365 432 216

4th bowler: 192 154 235

Use for nested loop to input the score for each player without using separate variables for input scores.

2. A person goes to office three days Friday, Monday and Wednesday in a week. For a day he gets a salary of 20\$. Display the salary he gets for 4 weeks in a month with the respective day number along with a particular week number.
3. Write a nested loop to form a number pyramid in the format given using a range of inputs. Don't hard code for 1 to 5.

2
44
666
8888
.....

4. Write a program to check whether from 550 to 700 how many of them are prime numbers and print them on the screen.
5. Write a program using nested for loop to print table of a range of numbers that user enters.

Sample table

Table of 5

5*1=5

...

Table of 6

6*1=6

.....

Table of 7

7*1=7

....