

C++ Programming

Recursive Functions

Practice 1

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Teaching, Training and Coaching since more than a decade!

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Print a Triangle (v1)

15_4.cpp

```
1 #include<iostream>
2 using namespace std;
3
4 void print_triangle(int levels) {
5     if (levels == 0)
6         return;
7
8     for (int i = 0; i < levels; ++i)
9         cout << "*";
10    cout << "\n";
11
12    print_triangle(levels - 1);
13 }
14
15 int main() {
16    print_triangle(5);
17    return 0;
18 }
19
20
```

```
*****
*****
***
**
*
```

Let's trace it

```
print_triangle(5)  
    Print 5 stars  
    print_triangle(4)
```

Let's trace it

```
print_triangle(4)  
    Print 4 stars  
    print_triangle(3)
```

```
print_triangle(5)  
    Print 5 stars  
    print_triangle(4)
```

Let's trace it

```
print_triangle(3)  
    Print 3 stars  
    print_triangle(2)
```

```
print_triangle(4)  
    Print 4 stars  
    print_triangle(3)
```

```
print_triangle(5)  
    Print 5 stars  
    print_triangle(4)
```

Let's trace it

```
print_triangle(2)  
    Print 2 stars  
    print_triangle(1)
```

```
print_triangle(3)  
    Print 3 stars  
    print_triangle(2)
```

```
print_triangle(4)  
    Print 4 stars  
    print_triangle(3)
```

```
print_triangle(5)  
    Print 5 stars  
    print_triangle(4)
```

```
*****  
****  
***  
**
```

Let's trace it

```
print_triangle(2)  
    Print 2 stars  
    print_triangle(1)
```

```
print_triangle(3)  
    Print 3 stars  
    print_triangle(2)
```

```
print_triangle(4)  
    Print 4 stars  
    print_triangle(3)
```

```
print_triangle(5)  
    Print 5 stars  
    print_triangle(4)
```

```
*****  
****  
***  
**  
*
```

```
print_triangle(1)  
    Print 1 star  
    print_triangle(0)
```

Let's trace it

```
print_triangle(2)  
  Print 2 stars  
  print_triangle(1)
```

```
print_triangle(3)  
  Print 3 stars  
  print_triangle(2)
```

```
print_triangle(4)  
  Print 4 stars  
  print_triangle(3)
```

```
print_triangle(5)  
  Print 5 stars  
  print_triangle(4)
```

```
*****  
****  
***  
**  
*
```

```
print_triangle(0)  
  Return
```

```
print_triangle(1)  
  Print 1 star  
  print_triangle(0)
```


“Acquire knowledge and impart it to the people.”

“Seek knowledge from the Cradle to the Grave.”