

Nested Loops

Nested Loops A loop structure can contain another loop structure. Loops placed within a loop are called nested loops. Each time the outer loop iterates, the inner loop iterates until its condition is met.

Create nested loops that will print the following patterns

Box

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

triangle

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

another triangle

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

A rectangle of numbers

```
0 1 2 3 4 5  
0 1 2 3 4 5  
0 1 2 3 4 5
```

Nested Loops

Another square of numbers

```
0 1 2 3 4 5
1 2 3 4 5 6
2 3 4 5 6 7
```

Write a Java program that reads from the user a value *n* and prints an *n* by *n* multiplication table. When run, your program should look as follows:

```
Dear user, please enter a number, and I will compute a
multiplication table for you: 7
```

```
You typed in 7. Here is the multiplication table:
```

```
1  2  3  4  5  6  7
2  4  6  8 10 12 17
3  6  9 12 15 18 21
4  8 12 16 20 24 28
5 10 15 20 25 30 35
6 12 18 24 30 36 42
7 14 21 28 35 42 49
```

```
Happy? (y/n)
```

If the user answers *n* the program should print: Try again.. and terminate. If the user answers *y* the program should print: Great! now you can try the next problem :) and terminate.

Note: Be careful with the formatting! It should look exactly as above. Assume the size of the table is always smaller than 10. To get the formatting right, you may need to print leading spaces. To print a space use `System.out.print(" ")`.

If you are done, you can try exercises from code.org

<https://studio.code.org/s/course2>

Focus on the looping questions and make your way to lesson 19.