

Introduction to Programming

Workshop 3: Loops

In this workshop you will practice the use of loops.

Follow the instructions given to complete small programming tasks.

3.1 Task 1: Numbers from 0 to 20

Create a code that prints out numbers from 0 to 20. Use `while` loop.

Numbers from 0 to 20 are the following:

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

3.2 Task 2: Numbers from 0 to 20

Create the same functionality but this time use `Do-while` loop.

3.3 Task 3: Looping through Strings

Create a program with the following functionality:

1. Ask the user to enter a string.
2. Loop through the string and print out the string letter by letter saying "1. character is [first letter of given string.]"

Hint! You might need the following String methods: [charAt\(\)](#) and [trim\(\)](#) and property [length](#). Check them out in documentation.

Please enter a string
JavaScript

1. character is J.
2. character is a.
3. character is v.
4. character is a.
5. character is S.
6. character is c.
7. character is r.
8. character is i.
9. character is p.
10. character is t.

3.4 Task 4: Multiplication Table

Ask the user to enter a number and then print out corresponding multiplication table using a loop.

Optional: Try to make printing according to screenshot on the right. You might use `util.format`, `padStart()` and `padEnd()` to achieve this.

Please enter a number: 3
Multiplication table for 3

* 1 * 3 = 3 *
* 2 * 3 = 6 *
* 3 * 3 = 9 *
* 4 * 3 = 12 *
* 5 * 3 = 15 *
* 6 * 3 = 18 *
* 7 * 3 = 21 *
* 8 * 3 = 24 *
* 9 * 3 = 27 *
* 10 * 3 = 30 *

3.5 Task 5: Countdown

Print out numbers from 10 to 0 using a loop.

```
10 seconds to ignition... Starting countdown...
...10...
...9...
...8...
...7...
...6...
...5...
...4...
...3...
...2...
...1...
IGNITION!!
```

3.6 Task 6: Palindrome

Ask the user to give a string and then check if it's a palindrome (a word, phrase, or sequence that reads the same backwards as forwards, e.g. *madam* or *nurses run*) or not. Use loops to solve this.

```
Please enter a string to check if it's a palindrome
madam
Word madam is a palindrome
```

Note: What happens if madam was spelt with a capital letter?
