

# Basic Programming - Seminar 3

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The scope of this seminar is to get familiar with loops and conditionals in Python and get a sense on how they are used when programming. This seminar is exercise-based.

## 1 Exercise 1 - while loop

Print the first 10 natural numbers using the **while** loop (fill in the blanks):

```
i = ...  
... i <= ...  
    print(i)  
    i+=1
```

## 2 Exercise 2 - if/else statement

Create a variable called age.

**If** the age is greater than a desired value, print the statement "Congratulations, you are an adult!".

**Else**, print "Hey kiddo!".

## 3 Exercise 3 - for loop, range

Write a program to print the multiplication table of a given number. If n=2 the output should be:

```
2  
4  
6  
8  
10  
12  
14
```

16  
18  
20

Hint:

- Set `n = 2`;
- Create a for loop to iterate over the first 10 numbers;
- In each iteration, multiply the current number by `n` (`prod = n*i`);
- Print `prod`.

## 4 Exercise 4 - break, continue, elif

Resources, besides Lesson 5:

<https://pynative.com/python-break-continue-pass/>

Write a program to display only those numbers from a list that satisfy the following conditions:

- The number must be divisible by five
- If the number is greater than 150, then skip it and move to the next number
- If the number is greater than 500, then stop the loop

```
numbers = [12, 75, 150, 180, 145, 525, 50]
```

Hint:

- Use for loop to iterate each item of `numbers` list;
- Use `break` statement to break the loop if the current number is greater than 500;
- use `continue` statement move to next number if the current number is greater than 150; Use `number % 5 == 0` condition to check if number is divisible by 5.

## 5 Exercise 5 - accumulator

Write a program that counts the sum of all the digits in a number.

Hints:

- define a variable to store the number;
- define the accumulator;

- cast the variable to string;
- use a `for` loop to iterate over the numbers in the variable;
- add to count variable each number in loop;
- print the final value for `count` variable.

## 6 Exercise 6 - conditionals inside loops

Write a Python program to count the number of even and odd numbers from a series of numbers.

Hints:

- define a tuple with numbers from 1 to 9;
- define two variables to store the number of even and odd numbers;
- create a `for` loop to iterate over created tuple;
- if number is divisible by 2 increase even counter;
- else increase odd counter.

## 7 Exercise 7 - list accumulator

Write a Python program that appends to a list only the words in list `my_list` that begin with letter 'a'. Selected words will be put in the list with the first letter capitalized.

```
my_list = [ 'car ', 'fuel ', 'avoidance ', 'upper ', 'apartheid ', 'bird ',
'music ', 'soul ', 'heart ', 'attachment ', 'albedo ']
```

Congratulations, you have finished your third seminar!