

## L02 Tasks

L02-T1: Basic data types, input, calculation, output

L02-T2: Combination of character strings

L02-T3: Cuts and length of strings

L02-T4: Integer, fixed value, calculation and print formatting

L02-T5: Calculating the mean, formatting the printout, integer and rotation

### Submission:

- Submit L02-T5 to CodeGrade via Moodle before the deadline.

### Note:

- Try to use at least one comment in your code
- Be especially careful with spaces so that your output follows the sample output. Note that also each input-string in the program ends with '\n'. The reason for this is that it makes the output in CodeGrade more readable
- If you see some "Code Structure Tests" hidden in CodeGrade but they are not mentioned in the task description, you don't need to worry about them. They are just there to make sure the code is ok.

### L02-T1: Basic data types, input, calculation, output

Write a program that asks the user for his/her name, an integer, and a decimal number. The program stores them in different variables whose names you can decide.

Raise the given decimal to the power of the given integer. Display the result as in the example below using 2 decimal places. End the program by thanking the user.

#### Example run 1:

```
Enter your name:
Robin
Enter an integer:
8
Enter a float:
3.46
Decimal 3.46 to power 8 is 20540.39
Thank you for using the program, Robin!
```

## L02-T2: Combination of character strings

Make a Python program that asks for the user's first and last name and prints them according to the example program below. The program outputs this user's lut.fi-email address in the form: `firstname.lastname@lut.fi`

### Example run 1:

```
Please enter your lastname:
Bond
Please enter your firstname:
James
Hi James Bond, your email address is: James.Bond@lut.fi
```

## L02-T3: Cuts and length of strings

Make a Python program that asks the user for a long word and prints different cuts from it according to the example run below:

1. print the first five letters, the last five letters, and the second to fifth letters of the word
2. print every second letter of the word starting with the second letter
3. print the word backwards inside the quotation marks
4. print a substring of the word, to which the user enters the start index, end index and step.
5. finally print the length of the string given by the user.

### Example run 1:

```
Enter a long word:
trichotillomania
The first five letters are: trich
The last five letters are: mania
Letters 2, 3, 4 and 5 are: rich
Every second letter of the word: rcoilmna
The word backwards 'ainamollitohcirt'
Enter start index:
3
Enter end index:
11
Enter step:
2
With these values 'trichotillomania' produces this: coil
Your word is 16 characters long
```

## L02-T4: Integer, fixed value, calculation and print formatting

Make a Python program that:

1. asks the user for an integer and prints this integer and the number multiplied by itself. Print all data with one print statement.
2. asks the user for the radius of a circle and calculates the circle's circumference and surface area from it. Define a value named "PII" in your program, set it to 3.14, and use this value in the calculation. The program must print the radius, perimeter, and area with the same print statement
3. asks the user for the lengths of the sides of the rectangle and calculates the perimeter and surface area from them. After this, the program prints the page lengths with one print statement, the perimeter length with the second print statement, and the surface area with the third print statement, so that the results of all three print statements appear on the same line in the printout.

See the output of the program in the example run below.

### Example run 1:

```
Enter a positive integer:
7
Number 7 multiplied by itself is 49
Give the radius of a circle as an integer:
4
The radius of the circle is 4, the circumference is 25.12 and
the area is 50.24.
Enter the length of one side of the rectangle as an integer:
12
Enter the length of another side of the rectangle as an integer:
15
The sides of the rectangle are 12 and 15; perimeter is 54; and
the area is 180.
```

## L02-T5: Average calculation, print formatting, integer and rotation

### (Submit this task to CodeGrade on Moodle)

Make a Python program that asks for three numbers and calculates their average. The numbers which are inputted can be integers or floats. After this, the program prints

1. the sum of the given numbers.
2. the average of the given numbers rounded to 3 decimal places.
3. the average of the given numbers rounded to the closest integer.
4. the average of the given numbers as an integer without the decimal part (hint: use `int` function).

See the output of the program in the example run below.

**Example run 1:**

```
This program calculates the average of the 3 numbers you enter.  
The numbers can be int's or float's.  
Enter the first number:  
33.1  
Enter the second number:  
50  
Enter the third number:  
66.2323  
Sum of the numbers: 149.33229999999998  
Average of the numbers (rounded to 3 decimal places): 49.777  
Average of the numbers (rounded to the closest integer): 50  
Average of the numbers as an integer without the decimal part:  
49
```