



In-class exercises

GRA 4142 Data Management and Python Programming

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Write a program that asks for the user's name and then prints HELLO, followed by a comma, a space, the name with all letters being capital, and an exclamation mark.

Then extend the program to write the name with dashes between the characters.

Sample input and output:

```
What's your name? Homer  
HELLO, HOMER!  
HELLO, H-O-M-E-R!
```

1. Write a program that will ask user for an amount in NOK and converts it to EUR (using the current exchange rate).

```
Amount in NOK: 1000  
1000.00 NOK = 97.15 EUR
```

2. Extend the program and add conversion from EUR to NOK. Let the user decide if they want to convert from NOK to EUR or vice versa.
3. Change the program so that the user enters the amount including the currency, and the program converts it to the other currency.

```
Amount (incl. currency): 100 EUR  
1029.04 NOK = 100.00 EUR
```

4. (Extra challenge.) Add support for USD.

What does this program do?

```
def f(a):  
    if a == 1:  
        return False  
    b = 2  
    while b * b <= a:  
        c = a % b  
        if c == 0:  
            return False  
        b += 1  
    return True
```

What about now?

```
def is_prime(number):  
    if number == 1:  
        return False  
    divisor = 2  
    while divisor * divisor <= number:  
        remainder = number % divisor  
        if remainder == 0:  
            return False  
        divisor += 1  
    return True
```

The sequence 0, 1, 1, 2, 3, 5, 8, 13, 21,... is called the Fibonacci sequence. The first two numbers are 0 and 1 and each following number is the sum of the two preceding ones.

Write a Python function to generate and print the elements of the sequence less than or equal to the value passed to the function. Call the function to print all elements of the sequence less than or equal to 1000.

Then copy, rename and modify the function to print the first n numbers, where n is the parameter of the function.

```
fib_lte(1000)
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987

fib_first(10)
0 1 1 2 3 5 8 13 21 34
```