


CSC110 Lecture 12: For Loops

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Exercise 1: Practice with for loops

1. Consider the following function.

```
def sum_of_squares(numbers: list[int]) -> int:
    """Return the sum of the squares of the given numbers.

    >>> sum_of_squares([4, -2, 1]) # 4 ** 2 + (-2) ** 2 + 1 ** 2
    21
    """
    sum_so_far = 0
    for number in numbers:
        sum_so_far = sum_so_far + number ** 2
    return sum_so_far
```

- a. What is the loop variable?

number

- b. What is the accumulator?

sum_so_far

- c. Fill in the loop accumulation table for the call to function `sum_of_squares([4, -2, 1])`.

Iteration	Loop variable (number)	Loop accumulator (sum_so_far)
0	N/A	0

Iteration	Loop variable (number)	Loop accumulator (sum_so_far)
1	4	16
2	-2	20
3	1	21

2. Implement the following function.

```
def long_greeting(names: list[str]) -> str:
    """Return a greeting message that greets every person in names.

    Each greeting should have the form "Hello <name>! " (note the space at
    the end).

    The returned string should be the concatenation of all the greetings.

    >>> long_greeting(['David', 'Mario']) # Note the "extra" space at the
    end
    'Hello David! Hello Mario! '
    """
```

see .py file for other
sample solutions

Exercise 2: Marriage licenses, re-revisited

In Lecture 10, we saw how to query marriage license data using a nested list (i.e., `list[list]`). In Lecture 11, we saw how to use data classes to store the marriage license data using a list of `MarriageData` (i.e., `list[MarriageData]`):