

## Homework 2

Due date: Thursday January 25 2018, 11:59pm

Write the whole homework in one file, the examples below could look like the file snippet below

1. Example 1: Write a command that produces this list [7,8,9,10]  
Answer: `range(7,11)`
2. Example 2: Write a command that generates a list of squares:  
Answer: `[xi*xi for xi in range(10)]` or `[xi**2 for xi in [1,4,3,2]]` etc.

```
#!/usr/bin/env python
# (c) yourname
# 1. Write a command that produces this list [7,8,9,10]
print range(7,11)
# 2. Write a command that generates a list of squares
print [xi*xi for xi in range(10)]
print [xi**2 for xi in [1,4,3,2]]
```

1. Write a command that slices this list [113, 117, 121, 125, 129, 133, 137, 141, 145, 149] into the two numbers in the center.
2. Create a 2-dimensional list: for example the result should look like this `[[1,2],[3,4],[5,6]]`
3. Add a number to a list, give an example
4. Prepend a number to a list
5. Combine two strings
6. How to do element-wise division? Give an example with this list [456,45,23,89,56] and the divisor 23 . (Hint: use `append` and `in` a loop and at the end print the final list)
7. Sum this list [113, 117, 121, 125, 129, 133, 137, 141, 145, 149]
8. Produce a list that contains pairs  $(i, i-4)$ ,  $i$  starting at 10 and stopping at 15
9. Give an example of a dictionary with 5 entries, use `firstname` as keys and last names as values.
10. Show only the unique numbers of this list `[int(xi/100) for xi in range(1000)]`

Use the homework submission feature in Canvas