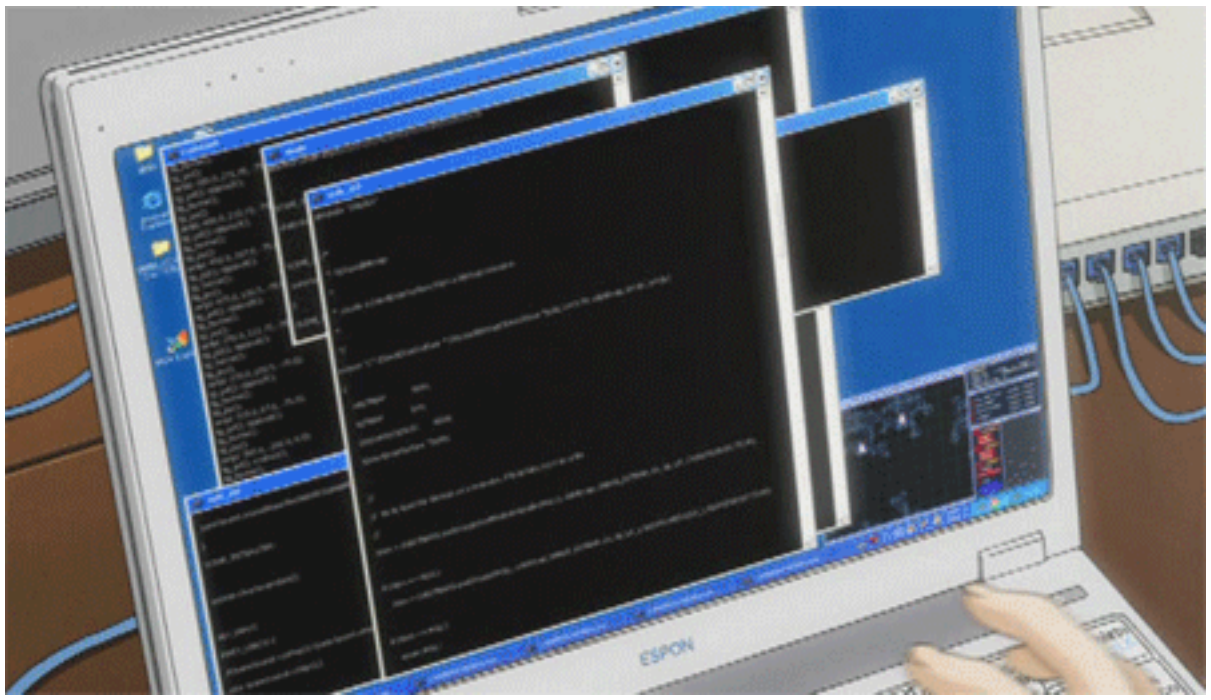

Workshop: Functions, modules, sets and dictionaries

This workshop will help you understand functions, modules, sets and dictionaries. Luckily you've worked with functions and modules quite a bit already.

1. Go through the slides to make sure you understand:
    - Functions
        - Can you write your own function by heart?
        - What are function arguments and how can you use them in your code?
    - Modules
        - Can you import and use a module?
        - What is a module you used before?
    - Sets
        - Why use sets compared to lists?
        - How do you create a set?
    - Dictionary
        - Why use dictionaries?
        - How do you create a dictionary?
2. Read the documentation for the `len` function using the `help` function as demonstrated in the recap session.
3. Deconstruct the list

    ```
    animals = [['elephant', 'rat', 'bat'], [4500, 0.2, 0.057]]
    ```

    into two variables `animals` and `weights` respectively so that `animals` contains the list `['elephant', 'rat', 'bat']` and `weights` contains the list `[4500, 0.2, 0.057]`.
4. Given a set `{'Call', 'me', 'Ishmael'}`, can you write one line of code that checks whether the string `'me'` is inside the set (yielding either `True` or `False`)?
5. Dictionary exercise
    - Create a dictionary with the following key-value pairs:
        - `'color': 'greyscale'`
        - `'size': 289983`
        - `'type': 'jpg'`

    - `'address'`: `'https://upload.wikimedia.org/wikipedia/commons/7/7b/Moby_Dick_p510_ill`
  - Add the key `source` with the value `'Wikipedia'` to the dictionary
  - Loop over all the **items** in the dictionary, and print the key-value pairs separated by the string `' - '`
6. Can you turn the following code into a function called `cookie_likeness`? What should the argument be?

```
data = input('How much do you like cookie dough?')
data = int(data)
print('You ' + 'really ' * data + 'like cookie dough')
```

7. Print out the number of CPU cores in your computer using the `os` module
8. Given a list of ingredients (for instance `['Vodka', 'Apple Cider', 'Apple Brandy']`), write a function `print_ingredients` that prints the ingredients separated by a comma (`','`) except for the two last items, that should be separated by an `'and'`. So the above example should show as `Vodka, Apple Cider and Apple Brandy`

   - Try it out with the following ingredient lists:
     - `['Gin', 'Vermouth', 'Campari', 'Orange peel']`
     - `['White port', 'Tonic water']`
9. (**Bonus question** - don't spend too much time on this): Create a new function `get_me_a_drink` that takes a list of ingredient lists and randomly selects one of the ingredient lists to be printed. When an ingredient list has been selected, store it in a variable and print it. You can reuse the function you wrote above in part 7. Use the list of ingredient lists below to test your function.

   - Hint: We used a function previously in the session that could pick a random element from a list.

```
list_of_lists = [
  ['Gin', 'Vermouth', 'Campari', 'Orange peel'],
  ['White port', 'Tonic water'],
  ['Vodka', 'Triple sec', 'Cranberry juice', 'Lime juice'],
  ['Vodka', 'Tequila', 'Light rum', 'Triple sec', 'Gin', 'Cola'],
  ['Vodka', 'Tomato juice', 'Worcestershire sauce']
]
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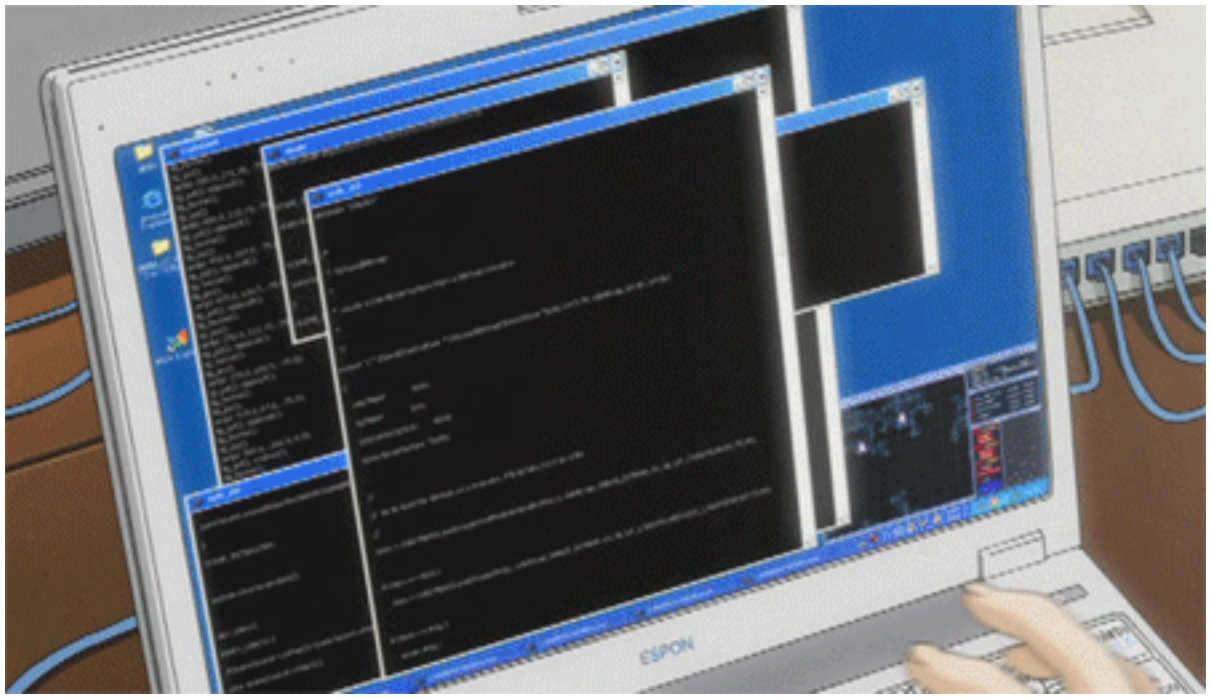

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