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# Automation and Scripting

A beginner's workshop in Python



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# PyLadies Bratislava

- Informal group
- Non-judgemental
- Monthly meetups



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# This workshop

- First time
- Share Python knowledge
- Become autonomous in writing Python scripts
- (Installation Party)



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# Ice breaker

- Write 3 statements about you:
  - 2 True
  - 1 False
- and let your partner guess which one is false



## Automation and scripting

A **script** is a sequence of instructions, in a programming language, often written for a specific task, allowing for that task to be **automated**.

*ChatGPT*

## Pancake recipe

### Ingredients:

- 2 cups flour
- 4 tablespoons sugar
- 4 teaspoons baking powder
- 2 egg
- 2 cup milk
- 4 tablespoons oil



### Preparation:

- In a bowl mix the flour, sugar, baking powder
- Add milk, eggs and oil
- Mix well.
- Cook in a pan.





**The workshop is divided into 2 parts:**

**Part 1:** Sort photos by filename (basis for Part 2)

**Part 2:** Add a GUI to our sorting script



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# Part 1 - Sort pictures by filename

Python built-ins.



## Part 1 - Sort pictures by filename

1. Download the code from github
  - a. <https://github.com/pyladies-bratislava/autoscript>
2. Open the `sort.py` and `script.py` files in your editor
3. Make yourself familiar with the code
4. Open the terminal and run the script:
  - a. `$ python script.py`
5. Inspect the output



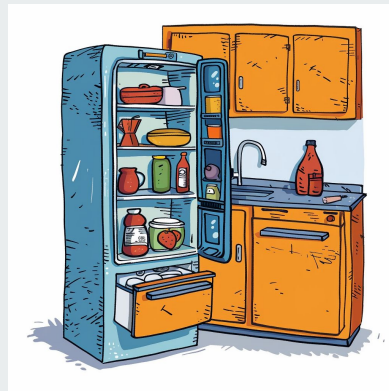


## Dot notation

Access what is inside an object.

Examples:

- `europa.slovakia.bratislava`
- `kitchen.fridge.bottle`





## Modules in Part 1

**os** - Platform-independent module for interacting with the operating system.

**os.path** - Module with functions for manipulating paths and filenames.

**shutil** - Module with utility functions for files and directories.

## Part 1 - Sort pictures by filename - Exercises

1. Change the name of the destination folder
2. Print the number of the step
3. Print how many files were organized
4. Change the script to sort only by year
5. Change the script to sort only by month



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# Part 2 - Make a GUI application

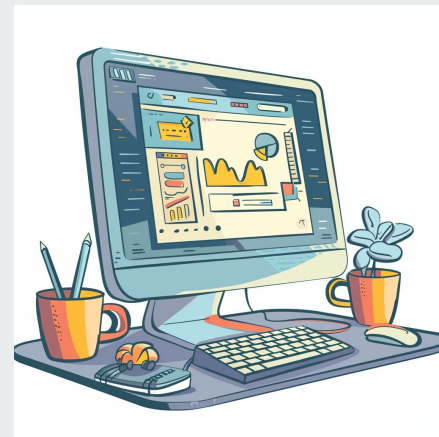
Using `tkinter`.

**GUI** - Graphical User Interface



## Part 2 - Make a simple GUI application

1. Open the `gui.py` and `script.py` files in your editor
2. Make yourself familiar with code
3. Uncomment the `photos_app()` line in the `script.py` file
4. Open the terminal and run the script:
  - a. `$ python script.py`
5. Interact with the window and inspect the output



## Tkinter - GUI toolkit

1. Foundational element is the **Window**
2. **Widgets** are elements that can be associated with a **Window**. For example, labels and buttons
3. The main loop listens to events from the user and processes them
4. <https://docs.python.org/3/library/tk.html>
5. <https://www.pythonguis.com/tkinter/>

```
# Create window  
window = tk.Tk()
```

```
# Create a label  
label = tk.Label("Hello")  
label.pack()
```

```
# Start the tk main loop  
window.mainloop()
```



## Part 2 - Make a simple GUI application - Exercises

1. Change the text in the labels
2. Change the text in the buttons
3. Add a title to the window
4. Change the size of the window
5. Change the color of the buttons
6. Add a label with the name of the chosen folder



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# Takeaways

What are you taking with you from this workshop.



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# Thank you!



## Contact us:



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<https://github.com/pyladies-bratislava>



<https://www.meetup.com/pyladies-bratislava/>



<https://slackin.pyladies.com/>