

PyLadies

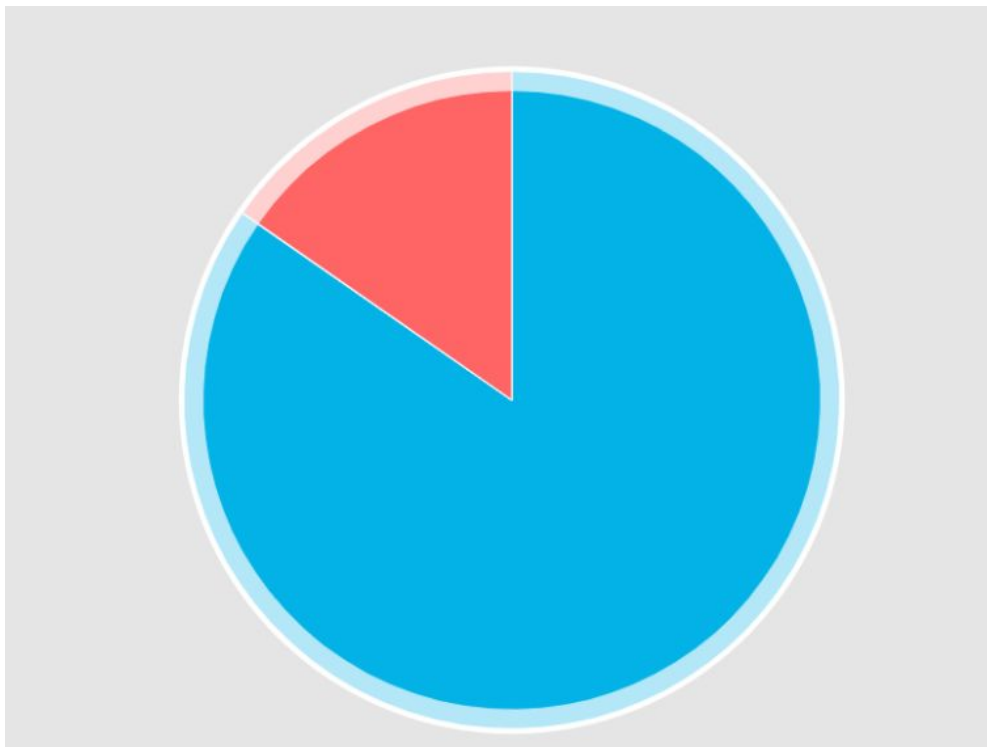
Vienna 9.11.2019

Who?

International mentorship group with a focus on helping more women become active participants and leaders in the Python open-source community.

Our mission is to promote, educate and advance a diverse Python community through outreach, education, conferences, events and social gatherings.

Why?



Source: <https://github.com/triketora/women-in-software-eng>

PyLadies

- Regular meetups
- Courses
- Workshops on specific topics
- Mentorship
- Open-source community

Python!!

What you can do with programming?

- Automate stuff
- Make websites
- Play and create games
- Control your household

Python!!

— — —

Why Python?

- Awesome community!
- Human readable syntax
- Powerful
- Wide usage and potential

Agenda for today

1. Getting started with python
2. Lightning talk
3. Exercices, networking, discussion
of own projects

Python in command line

Open your command line and type “python3”

>>>

and you can start with coding!

Check the options displayed – help, licence, credits and copyright

Numbers

Simplest tasks are just numbers

(>>> only indicates that we are in python console, do not type this)

Try to type:

- >>>1
- >>>42
- >>>-8.3

Arithmetic operations

— — —

addition: +

subtraction: -

multiplication: *

Try:

- 1 + 2
- 6 - 3
- 5 * 6

Arithmetic operations

Division: /

Try:

- $8 / 2$
- $100 / 5$
- $10 / 3$

Data types (numbers)

— — —

- Integer (whole numbers)
 - eg. 11, 5, 1052478
 - $11/3 \rightarrow 3$
- Float (decimals)
 - eg. 1.5, 11.0
 - $11.0 / 3.00 \rightarrow 3.666$

Comparison operators

-- -- --

==

Equal

!=

Not equal

<

Less than

>

Greater than

<=

Less than or equal to

>=

Greater than or equal to

Exercises

— — —

- $4 - 2$
- $5 < 4 + 2$
- $12 + 1 \geq 12$
- $3 + (4 + 6) \times 8 \div 2 - 1$
- $16 \neq 16$
- What does the `%` operator stand for?
- What is the outcome of `**` operator?

Strings

“Hello PyLady!”

“abcdef”

Is it working without quotes?

“3 + 5.5” - numbers also can be strings if surrounded by quotes

Basic string operations

— — —

- concatenation: +
- multiplication: *

Try:

“Hi” + “PyLady!”

“Ha” * 10

First program

- open your editor
- write: `print("Hello world")`
- save the file as `hello.py`
- use your command line to navigate to folder with a script
- run `python3 hello.py`

Print function

Basic function for returning the output of code to the user

Concatenate without the “+”

Try:

```
print(“this”, “is”, “awesome”)
```

Play with spacing and other sentences

Indexes

Strings are made of characters

“H” + “e” + “l” + “l” + “o” → “Hello”

Each character has a position in string called **Index**

H	e	l	l	o
0	1	2	3	4

In Python index start with 0

Not every programming language
indexes start with 0!!

Indexes

To access a character at certain position, use []

Try to combine with print:

```
print("Hello"[0])
```

```
print("PyLadies!"[-1])
```

Play around to find out more about indexes

Variables

for easier manipulation, we can assign values to variables

```
age = 25
```

```
first_name = "Tyna"
```

Keeps the value for later use

Name of variable stays the same, you can change the value

Combine it all together

```
fruit = "pineapple"
```

```
number = 4
```

```
print(fruit[number])
```

```
print("I have", number, fruit, "at home")
```

Errors

`“friend” * 5`

`“friend” + 5`

`Does it work?`

Errors

```
Traceback (most recent call last):  
  File "<stdin>", line 1, in <module>  
TypeError: can only concatenate str (not "int") to str
```

What is the 'str', what is the 'int'?

What does concatenate mean?

How to fix it?

Exercises

- Store your name and age into a variable and print it in a sentence. Save it in a script and run it from command line
- Calculate how long this workshop will last and store it into new variable

Conditions

if something, do something... else?

```
a = 33
```

```
b = 200
```

```
if b > a :
```

```
    print("b is greater than a")
```

(try without in indentation and see what will happen)

Resources and materials

— — —

- advent of code – adventofcode.org
- hackerrank – hackerrank.com
- Django Girls – django tutorial (in April in Vienna)
- <https://www.practicepython.org>
- Nice Python exercises at one place
https://github.com/tystar86/python_exercises/tree/master/Tasks
- <https://automatetheboringstuff.com>
- <https://diveintopython3.problemsolving.io>

Next topics

— — —

Conditions

Loops

Functions

List and dictionaries

Handling the files

Jupyter notebooks

Thank you and see you next time

Suggest a topic you are interested in!

If you want to help with organization, let me know!

Please fill the survey I will send tomorrow :)