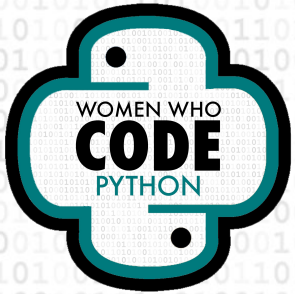
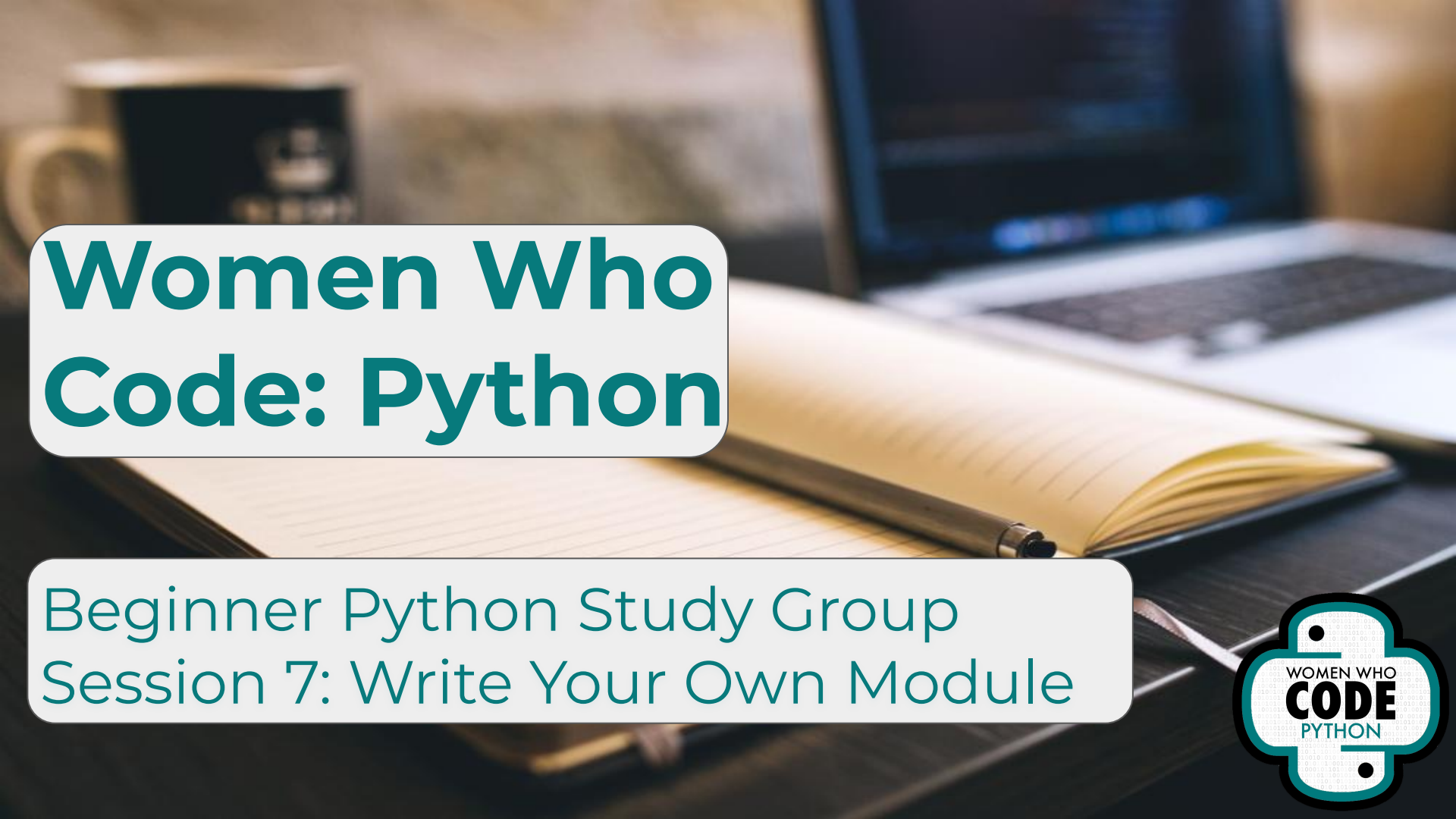
Welcome everyone!

- You can find these slides on GitHub here: https://github.com/WomenWhoCode/WWCodePython
- Please make sure your chat is set to “All panelists and attendees”.
- Some housekeeping rules:
  - Everyone will be muted throughout the webinar, but there will be opportunities for participation!
  - Please share your thoughts on the chat and/or ask questions in the Q&A.
  - The entire team is here today. Please reach out to us with any technical questions!




Women Who Code: Python
Beginner Python Study Group
Session 7: Write Your Own Module
WOMEN WHO
CODE
PYTHON

Meet us!

Hi I’m Rishika!

Graduate Student
Lead at WWCode
@Rishika Singh

Hi I’m Karen!

R&D - AI Sector
Volunteer at WWCode
@Karen W

Hi I’m Stephanie!

Marketing Evangelist @ WWCode
@Stephanie

OUR MISSION

Inspiring women to excel in technology careers.

WOMEN WHO CODE

OUR VISION

A world where women are representative as technical executives, founders, VCs, board members and software engineers.

WOMEN WHO CODE

OUR TARGET

Engineers with two or more years of experience looking for support and resources to strengthen their influence and levelup in their careers.

WOMEN WHO CODE

CODE OF CONDUCT

WWCode is an inclusive community, dedicated to providing an empowering experience for everyone who participates in or supports our community, regardless of gender, gender identity and expression, sexual orientation, ability, physical appearance, body size, race, ethnicity, age, religion, socioeconomic status, caste, creed, political affiliation, or preferred programming language(s).

Our events are intended to inspire women to excel in technology careers, and anyone who is there for this purpose is welcome. We do not tolerate harassment of members in any form. Our **Code of Conduct** applies to all WWCode events and online communities.

Read the full version and access our incident report form at **womenwhocode.com/codeofconduct**

WOMEN WHO CODE

230,000
Members

70 networks in 20 countries
Members in 97+ countries
10K+ events
$1025 daily Conference tickets
$2M Scholarships
Access to jobs + resources
Infinite connections

WOMEN WHO CODE

OUR MOVEMENT

As the world changes, we can be a connecting force that creates a sense of belonging while the world is being asked to isolate.

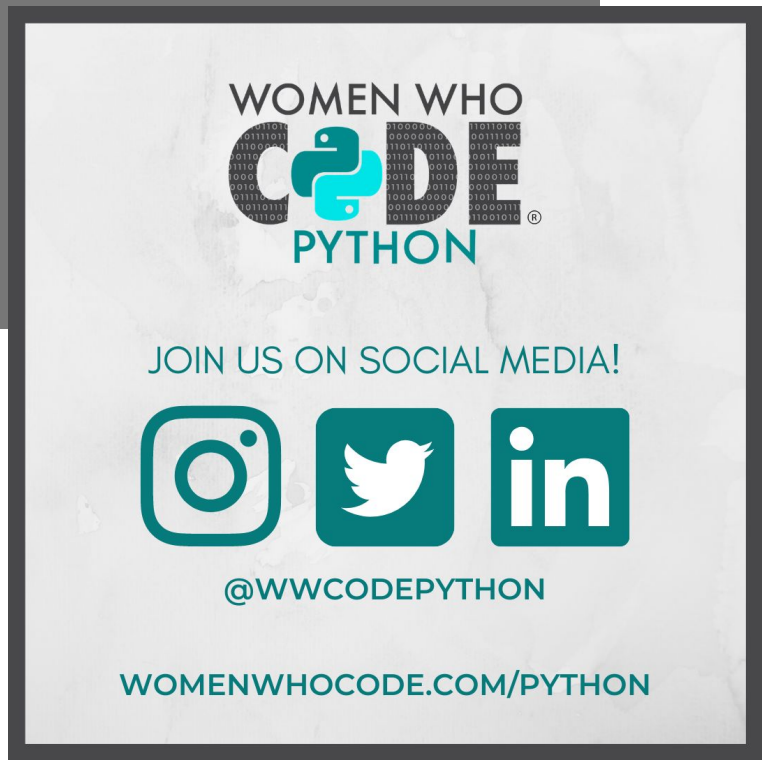
WOMEN WHO CODE

Upcoming Events!

FRI 27 NOV	❓Ask Me Anything(AMA) with Patricia Tillotson❓ 3:00 PM - 4:00 PM (EST) | Zoom	Register
SUN 29 NOV	✨ Discover NLP with Python Study Group: Vectorization ✨ 7:00 PM - 8:00 PM (EST) | Zoom	Register
WED 02 DEC	✨Beginner Python Study Group ✨Session 8: Mini Project *Recurring* 7:00 PM - 8:30 PM (EST) | Zoom	Register

WOMEN WHO CODE PYTHON

Stay Connected

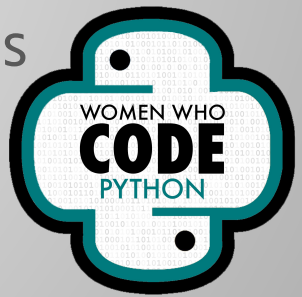


1. Module
2. Definition def
3. Class 💻
4. Print function 🖨️
5. Comments #
6. Wrap-Up 🔃

Module

- A file containing Python definitions and statements
- .py extension (like a regular Python script file)

...Confused? No worries! You'll understand by end of this session.

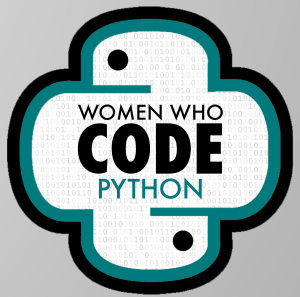


Function Definition

- Function blocks begin with keyword def followed by the function name and parameters
- Return value is not mandatory

Just picture it...

- Instead of writing the happy birthday song over and over, we can use a function to call out the lyrics!



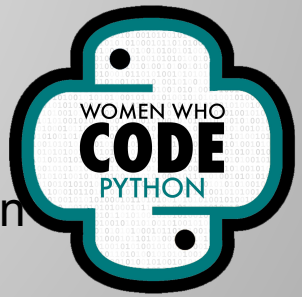
Function Definition

```
# create category list, folder name list and
# label lists from data directory
def getlists(path):
    # create empty lists for file name and labels
    file_names, labels = [], []
    # read files in directory
    folder_names = os.listdir(path)

    # loop folder names and split 2 variables
    for f in folder_names:
        file_names.append(f)
        labels.append(f.split('_')[0])

    # define and encoder classes
    category = sorted(set(labels))
    le = LabelEncoder()
    le.fit(category)
    labels = labels2cat(le, labels)

    # return values
    return category, file_names, labels
```

Define function and parameter(s)

Actions

Return values of the function



Class

- Python as an “object-oriented programming language”, all implemented codes can be referred as an object, thus objects can be grouped together
- Both variables and functions can be called within the class by classname.variable or classname.function() outside of the class
- Using self to use the variable or function within the class

Define a bicycle object prototype

attributes:

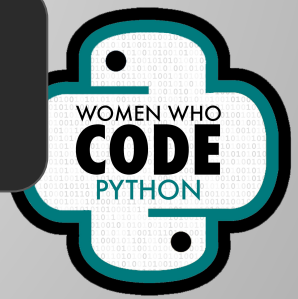
- speed
- gear

behaviours:

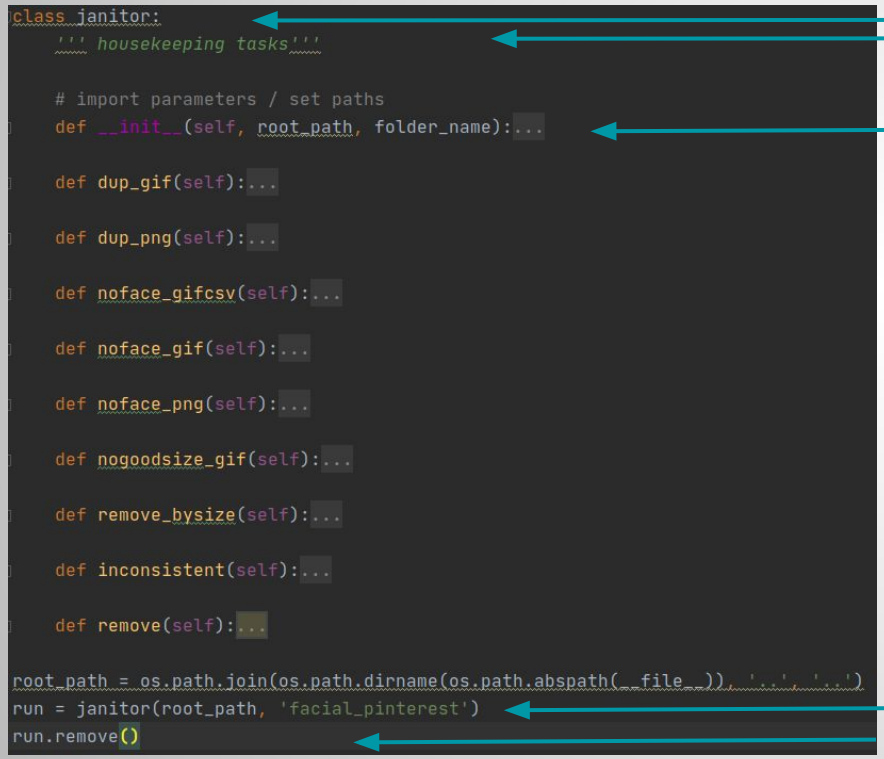
- speed up
- apply brake
- change gear

```
class bicycle:
    ''' properties'''
    # Class variables.
    gear = 1
    speed = 0

    def __init__(self, gear, speed):
        self.gear = gear
        self.speed = speed

    def speedUp(self, increase):
        self.speed += increase

    def changeGear(self,newGear):
        self.gear = newGear

    def applyBrake(self, decrease):
        self.speed -= decrease
```

```
class myname:
   name = 'Karen'
print('Hi I am ',myname.name)
```



Now we put the 2 together!



Class name

Class description

Initiate all the input values

List of functions

Input parameter values

Execute one of the functions from class

WOMEN WHO CODE PYTHON

def vs class

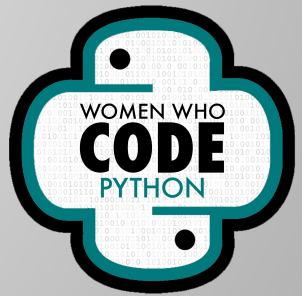
```
def myname():
    name = 'Karen'
    return name

print('Hi I am ', myname())

>>Hi I am Karen
```

VS

```
class myname:
    name = 'Karen'

print('Hi I am ', myname.name)

>>Hi I am Karen
```

Quick Memo ❤️:

- To call out a function, type function name followed by bracket "()"
- To call out a variable, just type the variable name



Print() function

I am the key to help you finding bugs!

2 ways (or more) to print a statements with values: % and {}

```
name = 'Mr. Bean'
age = 65
item = 'his teddy bear'
print('This is is %s.'%(name))
print('%s is %d years
old.'%(name,age))
print('His favourite companion is
%s.'%(item))
```

```
name = 'Mr. Bean'
age = 65
item = 'his teddy bear'
print('This is is {}.'.format(name))
print('{} is {:d} years
old.'.format(name,age))
print('His favourite companion is
{}.'.format(item))
```

```
This is is Mr. Bean.
Mr. Bean is 65 years old.
His favourite companion is his teddy bear.
```

WOMEN WHO CODE PYTHON

Lost? Comment More!

BAD example (with no comments)

```
# ---------- Video Clip - avi to gif ---------- #
def videoclip(vfile, start_frame, end_frame, cate):
    video = editor.VideoFileClip(os.path.join(path_video, vfile))
    clip = video.subclip(start_frame, end_frame)
    clip.write_gif(os.path.join(path_gif, '_ori_gif', 'o_' + cate + '.gif'))
    print('created clip for ', cate)
```

WOMEN WHO CODE PYTHON

Lost? Comment More!

BETTER example (with comments!!)

```
# ---------- Video Clip - avi to gif ---------- #
def videoclip(vfile, start_frame, end_frame, cate):
    # access the video file with its associated path
    video = editor.VideoFileClip(os.path.join(path_video, vfile))
    # indicate the time frame the video clip starts and ends
    clip = video.subclip(start_frame, end_frame)
    # use the function write_gif to save clipped video
    clip.write_gif(os.path.join(path_gif, '_ori_gif', 'o_' + cate + '.gif'))
    # indicate what category it is clipping for
    print('created clip for ', cate)
```

WOMEN WHO CODE PYTHON

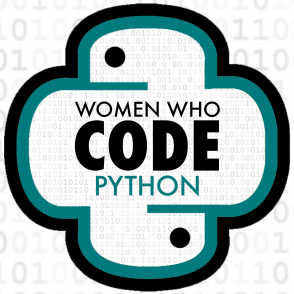
Lost? Comment More!

GOOD example (with comments and description!!)

```
# ---------- Video Clip - avi to gif ---------- #
def videoclip(vfile, start_frame, end_frame, cate):
    '''to make .gif video clips from original video
    parameters: original video file (vfile), start frame(start_frame),
    end frame(end_frame) and category(cate)'''
    # access the video file with its associated path
    video = editor.VideoFileClip(os.path.join(path_video, vfile))
    # indicate the time frame the video clip starts and ends
    clip = video.subclip(start_frame, end_frame)
    # use the function write_gif to save clipped video
    clip.write_gif(os.path.join(path_gif, '_ori_gif', 'o_' + cate + '.gif'))
    # indicate what category it is clipping for
    print('created clip for ', cate)
```

WOMEN WHO CODE PYTHON

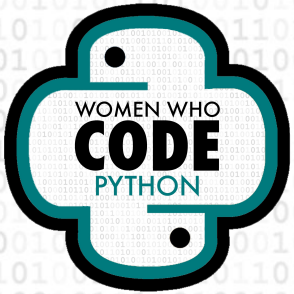
Q&A Time!



Time for Live Coding!

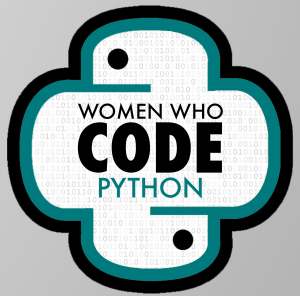
Google Colab link:

https://colab.research.google.com/drive/1aBujVG9CFXUkqJ0Irc4wR7ozhUEGMOD7#scrollTo=4a6XJXZdcdIv



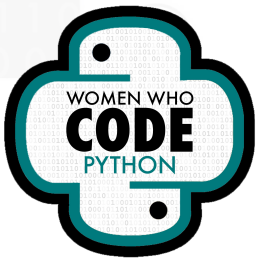
Wrap-Up

- Module - a file contains list of functions/classes
- Definition - a function
- Class - a class with groups of functions / variables
- Print function - print()
- Comments - helps you to figure out where the bugs are



Questions?

Join our Slack channel: #beginner-python-stdy-grp



Thanks, everyone!