OIM3640 - Problem Solving and Software Design

2022 Fall

Session 06 (9/15)

Today's Agenda

1. Welcome/News/Announcements
2. Class review
3. Revisit exercises
4. More practice
5. Lecture
   - ○ Functions II - Case: Interface Design

Welcome/News/Announcements

1. Exercises
   - 38/43 **finished and pushed** to GitHub on time
2. Office Hours:
   - 9:45 AM - 10:45 AM, Tuesday/Thursday
   - Webex by appointment
3. **Communications**
   i. **Email** - specify course and section #, e.g. `"OIM3640-01: GitHub settings"`
   ii. Use **Slack/GitHub** when asking **code-related** questions
4. Questions?

What we have learned so far...

- Variables, Expressions, Statements
- Types: `int`, `float`, `str`, `bool`, `None`, other data structures
- Functions:
  - syntax:

```python
def f():
    """ docstring """
    # function body
```

  - Variables and Parameters are **local**
  - Discussions on `print()` vs. `return`: 1, 2, 3, ...

Quick Quiz

Answer the following question(s):

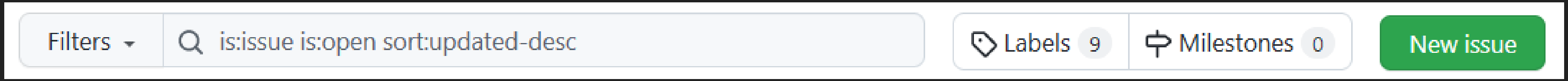
1. Can function return **multiple** values?
2. How do we check if variable `a` is an integer?
    - `isinstance(a, int)`
3. When we don't know how to finish the function, what shall we use?
    - comments!
    - `pass`
4. What will be the output below?

```python
def f():
    print('Hi')

print(f())
```

Exercise Feedback

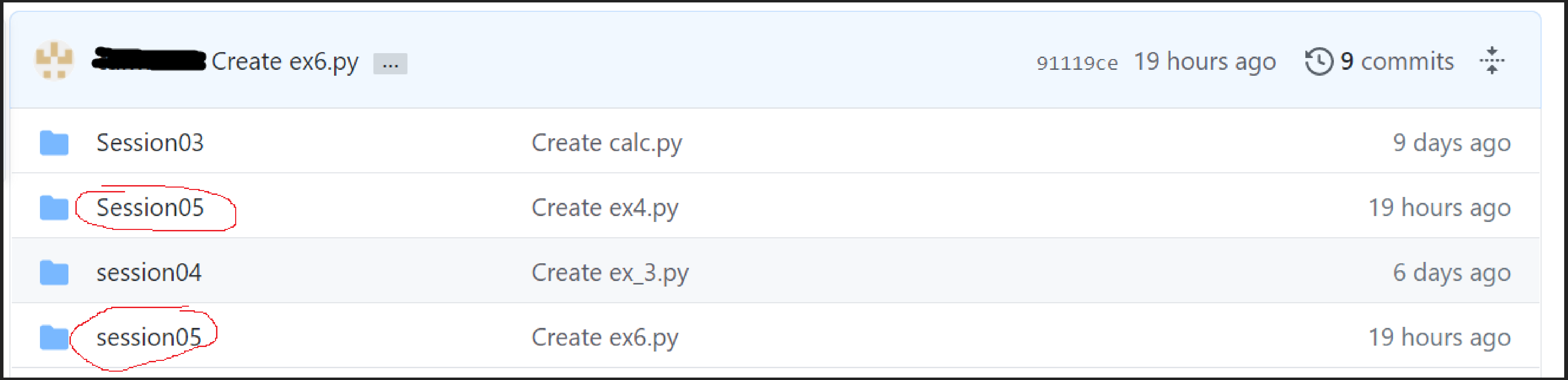
- Please check your OIM3640/**Issues** on GitHub.
  - **Reply** if we need to continue the conversation.
  - **Comment (with evidence) and Close** if you think it is fixed.
- File/folder names - use **lowercase** and **underscore**, i.e., *session04/type_demo.py*
- Use more Python **comments** and be ready to write **pseudo-code** and **docstrings**
- If you have any question regarding
  - Class **demo code**, create new issue in OIM3640/oim3640
  - Class **material**, create new issue in OIM3640/resources



is:issue is:open sort:updated-desc

Docstring! Docstring! Docstring!

How to fix this



[redacted] Create ex6.py ... 91119ce 19 hours ago 9 commits

Session03	Create calc.py	9 days ago
Session05	Create ex4.py	19 hours ago
session04	Create ex_3.py	6 days ago
session05	Create ex6.py	19 hours ago

1. Move the folder out of repo.
2. Commit
3. Move the folder back.

What if exercises are too difficult?

1. Do I understand the **concepts**?
2. Have I **attempted** example/demo code?
3. Have I read **supplemental** materials?
4. Have I tried any **debugging approaches**?
5. Have I had enough **rest**?
6. Have I asked for **help**?
    1. internal community (slack/GitHub/email)
    2. external community
        - Please give credits for use of code.
        - **Cite URLs as references in comments.**

Revisit Exercises

- Exercise 3-5:
  - `my_abs()`: create your own version of built-in `abs()`, i.e. without using `abs()`
  - Argument checking - stackoverflow discussion
  - How does **module** work?
  - Use **Psuedo-code**
- Exercise 6:
  - `quadratic()`

Revisit Exercises

-
  ```python
  def quadratic(a, b, c):
      a = float(input('Enter a: '))
      b = float(input('Enter b: '))
      c = float(input('Enter c: '))
      ...
  ```
- `return(-x)` -> `return -x`
- `if some_condition == True:` -> `if some_condition:`
- Make sure you test (aka. **call**) the function.

Python Tips

- Always format your code before running.
- Use Python Tutor
  - to visualize code execution
  - Please bookmark this website: https://pythontutor.com/visualize.html

Practice

1. **Codingbat** (OIM3640/codingbat)
2. Python Challange
    i. Challenge 1
3. More learning resources

Lecture

- Functions II - Case: Interface Design
    - **Watch Videos** together
    - **Read** class materials, and **try all the examples** in your VS Code
    - **Attempt** exercises together
    - **Complete** exercises **before due time**

Questions?