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Development Pipeline

What you will be able to do:

- Create documentation in markdown
- Apply a style guide to their code
- Setup and use an automated style checker

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README Files

README.md

- It is common practice to include README files with code projects. Github automatically renders README.md files on repository pages.

- What would you include for someone trying to use your project?

README.md

- It is common practice to include README files with code projects. Github automatically renders README.md files on repository pages.

- Some things to include:
  - Requirements/dependencies
  - How to setup the project
  - Any usage instructions
  - Badges for workflows
  - Licensing
  - Contact information

Markdown

- Readme files are written in **markdown** which is a markup language

- Markup languages include:
  - HTML
  - MD
  - XML

- Have you used a markup language?

- How is it different from a programming language?

Markdown

- Readme files are written in **markdown** which is a markup language

- Markup languages include:
  - HTML
  - MD
  - XML

- **Markup languages format text** – bold, underline, insert images, etc.
  - Markup languages are not compiled and run like programming languages

Writing Markdown

- Headers:
  - # Title / H1
  - ## Subtitle / H2

- Empahsis:
  - **bold**
  - *italic*
  - > quote

- [Text of link](http://google.com)

- ![alt text](path/to/image_file.jpg)

- Bullet list:

  - Can use hyphen
  * Or asterisk

- Numbered list:

  1. This is one
  1. This is two
  1. Markdown handles counting
  1. To ease re-ordering!

- Emojis:

  :sparkles:
  :octocat:

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Development Pipeline

Development Pipeline

- When code is pushed, typically it doesn’t just go live –
  - What do you think might happen?

Development Pipeline

- When code is pushed, typically it doesn’t just go live:
  - Automated Run of Static Analysis tools
    - Style Checker
    - Bug Checker
    - Security Checker
  - Automated Run of Tests
  - Code Review by another developer
  - Manual test by QA

Style Guide

- Python has a style guide called **PEP 8**
  - https://www.python.org/dev/peps/pep-0008/

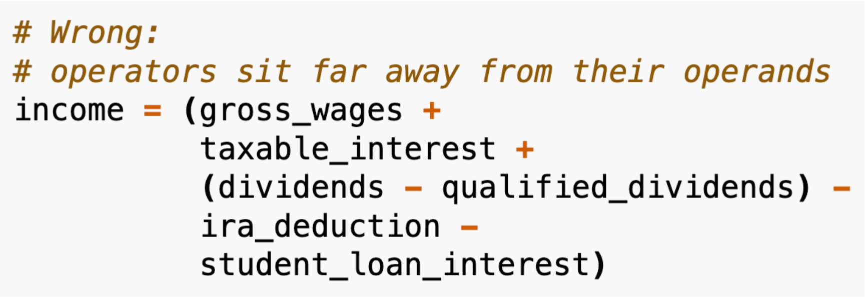
- Why would a group of developers want to follow a style guide?

Style Guide

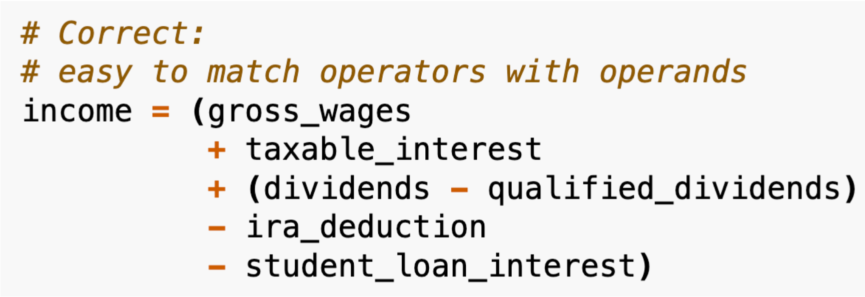
- Python has a style guide called **PEP 8**
  - https://www.python.org/dev/peps/pep-0008/

- Why would a group of developers want to follow a style guide?
  - Makes large code bases easier to read
  - Gives developers consistent experience (ex. maximum line length)
  - Agreed upon rules make code reviews faster/easier

- Compare the two examples below – which is easier to read?



```
# Wrong:
# operators sit far away from their operands
income = (gross_wages +
          taxable_interest +
          (dividends - qualified_dividends) -
          ira_deduction -
          student_loan_interest)
```



```
# Correct:
# easy to match operators with operands
income = (gross_wages
          + taxable_interest
          + (dividends - qualified_dividends)
          - ira_deduction
          - student_loan_interest)
```

Style Checker

- There is a static analysis tool to check that the style guide is followed
  - **pycodestyle - **https://pypi.org/project/pycodestyle/

- Running on terminal:

  ```
  pycodestyle --first file_name.py
  ```

- Example output:
  - file_name.py: line#: character#: Style issue description

  ```
  calc.py:   11:  1:  W293 blank line contains whitespace
  calc.py:   27:  5:  W292 no newline at end of file
  ```

Automating Style Checker

- GitHub Actions
  - Automates tasks
  - Specified in YAML – Yet Another Markup Language
    - White space matters like python!
- Create `.github/workflows/style.yaml`
  - Name workflow
  - Install python and pycodestyle
  - Run pycodestyle

```
name: Check Style
on: push

jobs:
  check-style:
    runs-on: ubuntu-latest
    steps:
      - uses: actions/checkout@v3

      - name: Setup python
        uses: actions/setup-python@v2
        with:
          python-version: 3.11.3

      - name: Install tools
        run: python -m pip install
             --upgrade pip pycodestyle

      - name: Check Style
        run: pycodestyle --first *.py
```

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What questions do you have about…

- Create documentation in markdown
- Apply a style guide to their code
- Setup and use an automated style checker

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Thank you!