# Objectives

- Python review, continued
- Design Discussion

Open Poll Everywhere

## Fill in the blank: I found ~80% of the terms to be _____ to define/identify

0

(A) Easy!

0%

(B) Hard!

0%

(C) Somewhere in the middle

0%

(D) Easy after I heard the definition

0%

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# Assignment Goals Recap

- To review how to program in Python
- To review the terminology of programming—with *precision*—so that we are better able to communicate throughout the semester (and beyond).

# Trickiness in Terms

- Synonyms and related terms are often the hardest
- Consider *state*, *variables*, *attributes/fields*
  - How are they similar/different?

# Trickiness in Terms

- Synonyms and related terms are often the hardest
- Consider state, variables, attributes/fields
  - State >> Variables >> Attributes, fields
    - State is a more general term (and can refer to variables collectively)
    - All attributes/fields are variables but not all variables are attributes/fields

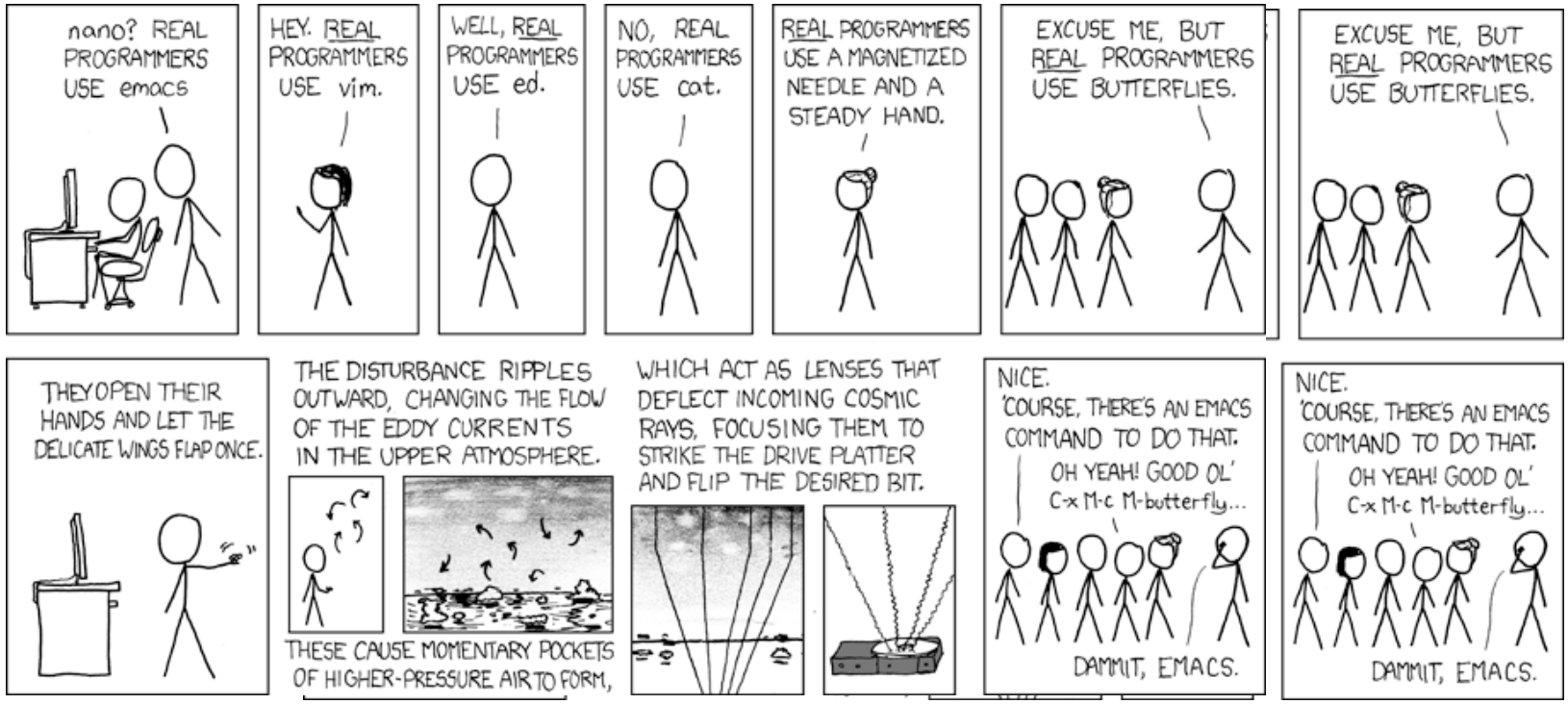
# Review && Submission

- What is the difference between comments and doc strings?
- What is the difference between functions and methods?
- How are classes and data types related?
- What is the difference between instance, class, and local variables?
  - What questions should you ask to determine which you should use? (more on this today)
- What is the difference between *inheriting* and *importing*?
- Why is *exception* handling not necessarily the same as *error* handling?
- Discuss the trickiest terms
  - Each pod: Put top 3 on white board

In parallel, show Professor Sprenkle terminology table

# Answers, in Brief

- All doc strings are comments; not all comments are doc strings
  - Doc strings are specifically to describe interface for functions/methods and for classes
- Methods: specific to objects of a certain class
- Classes define new data types
- Instance: one for each object of class
  - Class: one for all objects of class
  - Local: short-lived variable for a specific piece of code
- Inherits: get all properties/methods of parent
  - import: just *uses* code from other
- Error handling: broader




# TEXT EDITORS

https://xkcd.com/378/

# Text Editors

- For editing (plain) text—as opposed to *rich* text
  - Only text/characters
    - Example: no font, size changes
- We'll use text editors in a couple of ways: for git (version control) and programming
- Want to stick with the basics/fundamental for now
  - Build on them!

# Examples of Text Editors

- Basic: Notepad
- No frills, all terminal: nano
- For the adventurous: emacs, vim
- GUI, in increasing order of fancy:
  - jEdit, gedit
  - heading toward IDE: Sublime (paid), Pulsar, VSCode

# Set Up Your Development Environment: Git

- Choose a text editor
- Set up Git, GitHub

# SOFTWARE DESIGN DECISIONS

# Software Design Decisions

- We focused our review on terminology and the syntax/semantics of programming

- Let's talk a bit about design!
  - Assignment due Friday

# Design Questions

1. `turn` is an *instance* variable of the `Game` class.
   - Is it better design for `turn` to be a local, instance, or class variable? Justify your answer.
2. `user_input` is a *local* variable in the `getInput` method of the `ConnectFour` class.
   - Is it better design for `user_input` to be a local, instance, or class variable? Justify your answer.
3. `RANKS` is a *class* variable of the `Card` class.
   - Is it better design for `RANKS` to be a local, instance, or class variable? Justify your answer.
4. `tokens` is an *instance* variable of the `ConnectFour` class.
   - Is it better design for `tokens` to be a local, instance, or class variable? Justify your answer.
5. `Player` is a class in `war.py`.
   - Is it better design for the `Player` class to be defined in `war.py` or in `game.py`? Justify your answer.
6. `WarGame`'s `step` method takes as a parameter `dummyInput`. What purpose does it serve?

# Looking Ahead: Friday

- Complete Design Discussion assignment
- Complete the git set up assignment
  - Decide on your text editor to use for development and for commit messages
    - Emacs, vim, jEdit, Pulsar, Sublime, Notepad++, VSCode, nano, …
    - We want to stick with the basics for now
    - Can change later