

Project Ideas

Encryption

- Integrate email into the encryption code, so you can send and receive encrypted messages
- Explore 'code breaking', writing code that code break the encryption of some of the encryption schemes

Chatbots

- Extend the chatbot to talk about some new topics, or a new kind of interaction
 - For example, update the chatbot to more systematically answer questions
 - Or focus on a particular topic, like answering questions about Python
- Set up Chatbots that can talk to each other

Artificial Agents

- Make the agents interact with each other
 - What happens when they are in the same place? Can they 'eat' each other?
- Add something new to the world: obstacles (walls?), or targets (food?)
- Add a new exploration scheme for the bots to perform
- Note: if you are want to scale up this idea, you can look into the 'pelita' application (from the demo)

Research

- Use LiteratureScanner to investigate an area of research in the literature
- Explore scientific python to analyze a small dataset

Choose your own adventure

- Choose an area you are interested in, and explore what people do in it (read code!)
 - If you want to try and use an external tool / codebase, consider writing a demo / tutorial for it
- Find an API, and write some code to get some data / do some procedures with it
- You can also check out and build of one of the demos from the 0th class
- One option: create text based programs, that mimic some programs you would like
- Build some sort of utility that you would find useful
 - File management, organizing pictures, indexing files,
- If you are interested in an area of research, start a project related to that
 - This can be a way to learn those specific tools
 - For example: get a working demo, and sketch out a tutorial

Taboo Topics *

There are lots of helpful tutorials online; however, often it's difficult to figure out how to make *your* implementation different than these online tutorials. It's also boring and a pain to grade. So, to avoid any issues, there are two taboo topics this quarter:

1. Hangman
2. Drawings from `turtle`
3. tic-tac-toe
4. blackjack

* If you have a really new hangman implementation/idea or are super stoked about your great `turtle` idea or have invented a spin on traditional tic-tac-toe, you'll need to pitch your idea to (via email or in office hours) and get approval from Professor Ellis

How to get started

- Pseudocode out the ideas you would like to explore / work on
- Open a notebook, and get some code into it

- If you are doing an assignment related project, see which code you need, and isolate it
- Start exploring! Write some extra code that starts
 - Figure out what you will need to do your idea
- When you start having 'mature' functions / classes, try moving them into a script

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