CIS 122: Intro to Programming and Problem Solving
January 11th, 2022

Class Objectives

- Built in functions
- Python Modules
- User-defined functions
- Defining vs Calling a Function
- Function Parameters

Week 1 – Setting up: computational problem-solving, intro to programming languages, intro to Python – primitive elements (objects), identifiers, keywords. Intro to IDLE/Python programming environment and first programs.

Week 2 – Learn about a super-important Python object, functions. Important programming concept and programming tool. Functions are the focus of class, lab, text & projects this week.

The more you practice programming (both offline – tracing code – and online) the better. Practice exercises are often included in the class slides – be sure to do them. Other good practice problems are in the text and on the class website Resources page.

Coding during covid: We are trying to stay in-person, though with all materials – slides, notes, lab materials, lab video, projects, project solutions – posted on the class website (Schedule page), as we are aware everyone can’t always be here. Many help hours are available and more have been added (Wednesday, Thursday, Friday evenings – see How to Get Help at the class website). We invite you to come and ask questions, or just hang out while you work on 122, so someone is around to answer questions that come up as you work.

As you are aware, a certain number of projects not submitted by the weekly deadline (Mondays at 6 p.m.) will be ignored at the end of the term. (This is for any reason, not just covid.) Be sure to complete the projects as soon as possible and check the posted solutions. Checking the posted solutions is an essential part of every project. You may have questions about the project after reviewing the solution – please ask us!

If needed, our backup plan is always to go remote rather than cancel any class activity, with as much advance notice to you (on Canvas) as possible. If you arrive at an in-person activity that does not appear to be happening, you are welcome to stay at the location and join the zoom meeting (the link will be posted on Canvas).

Reminder – The first midterm demo (aka quiz/exam) is next week (week 3), in-class on Thursday. Practice problems will be posted at the class website by the end of this week.

It’s a good day to code!
Python Functions
PURPOSE: hide unnecessary detail, organize code
- There’s built-in functions and user-defined functions
- When calling a function write in format:
  ```
  >>> abs()
  ```
  - Write parameters inside the parenthesis
  - Functions are evaluated and return a value

Python Modules
- more useful functions
- explore the modules in the Python Standard library with the help function
- MUST IMPORT modules to use them
  ```
  >>> import math
  ```

Python User-Defined Functions
Define function associates name with operation
- must be in format:
  ```
  def add_one(y):
      ''' ''' #docstring
      (BODY OF FUNCTION)
      return
  ```
  - y is the parameter
  - return marks the end of a function

Docstrings
- comment directly after the function header

TO BE CONTINUED