Bike Share: Part 3

PLEASE FIND YOUR NAME on the list of today's studio groups. Then find your partner(s), seat yourselves comfortably anywhere in the studio, and read through the rest of this document.

Today's Agenda

We are going to focus on Chapter 4 of the ModSimPy book and the accompanying notebook. In addition to working through the notebook in class, we will ask you to submit it via GitHub — we'll show you how to do this on Thursday.

Preliminaries: Git / GitHub Setup, Pair Programming

Before we let you loose on the notebook, we'll check to be sure everyone has a consistent Git / GitHub setup and introduce the idea of pair programming.

We'll walk through the Git stuff together, but the key points are:

- You should already have a working GitHub account. If not, please work with a NINJA to set one up!
- If you followed the instructions in the preface of the book, you will have forked Allen's ModSimPy repo on GitHub and then cloned your ModSimPy repo to your laptop. If you followed our instructions in the auditorium last week, you probably just cloned Allen's repo. We will show you how to do the fork and then replace the code on your laptop with a clone of your repo.
- We recommend that when you're working with a notebook on your laptop, you make a copy of the original (e.g., `chap04.ipynb` gets copied to `chap04mine.ipynb`). We'll show you how to do this for the Chapter 4 notebook, and how to do it retroactively for the other notebooks if you would like.
- In order to actually submit the Chapter 4 notebook on Canvas, you'll have to learn how to add a file to your repo, commit this change, and push the change back to GitHub. We will do this together in the auditorium on Thursday.

First Section: Returning a Value (10 minutes)

Be sure you understand both how to return a value from a function, and how to use a value that is returned.

Next Two Sections: Running Simulations (10 minutes)

Be sure you understand the difference between `linspace` and `linrange`.

Parameter Sweeping (20 minutes)

We'll discuss parameter sweeping together, then leave you to work on the exercises in pair-programming mode.

At the end of the "Sweeping parameters" section of the notebook, what do the contents of the `sweep` variable look like?

Reflection Questions

1. How did pair programming work for you today? Who did what, and how did you decide? How did it feel? How would you expect it to feel with some additional practice?

2. You now know how to get two kinds of results from a simulation: a time series for a single set of parameter values, and a metric swept over multiple parameter values. How are these kinds of results different? What kinds of questions are more usefully answered by one than the other?

Next Steps

Before class on Thursday, please do the following things:

- ☐ Write your name here: _____
- ☐ Write your name(s) of your studio partner(s) here: _____
- ☐ By tonight: Scan this worksheet and submit it on Canvas.
- ☐ By Wednesday: Complete the exercises in the Chapter 4 notebook. You don't have to do the optional exercises, but you can if you want to.[1] You will see a Canvas assignment that instructs you to submit a link to the notebook on GitHub; you do *not* need to do this before Thursday; we'll do it together in the auditorium.
- ☐ Also by Wednesday: Read Chapter 5 and complete the Chapter 5 reading quiz on Canvas.
- ☐ Meet in the AUDITORIUM on Thursday.

[1] Yes, that's what "optional" means.