Statistics Analysis & Decision Theory

Introduction & Syllabus

Class Overview

- 17 weekly modules total
  - 15 class content modules and midterm + final exam
- Each module will review a chapter of the textbook with a demonstration of the exercises
- Required materials include access to the textbook
- Weekly homework assignments due Saturday night (11:59pm)
- Two components of Midterm and Final Exam
  - Technical assignment
  - Written assignment

Communication

1. Slack Channel - Link to Join
2. BlackBoard
3. Email

Class Objectives

Why take this class?

1. How statistics can be used as information
2. Analyze, interpret, and explore methods to communicate with data
3. Inform decisions to real life business problems

How we Will Accomplish Class Objectives

- Fundamental descriptive and inferential statistics
- Use of Python for data analysis

About Me

STATE UNIVERSITY OF NEW YORK
NEW PALTZ
School of Business

CUSP
Center for Urban Science + Progress
NYU | TANDON

block party

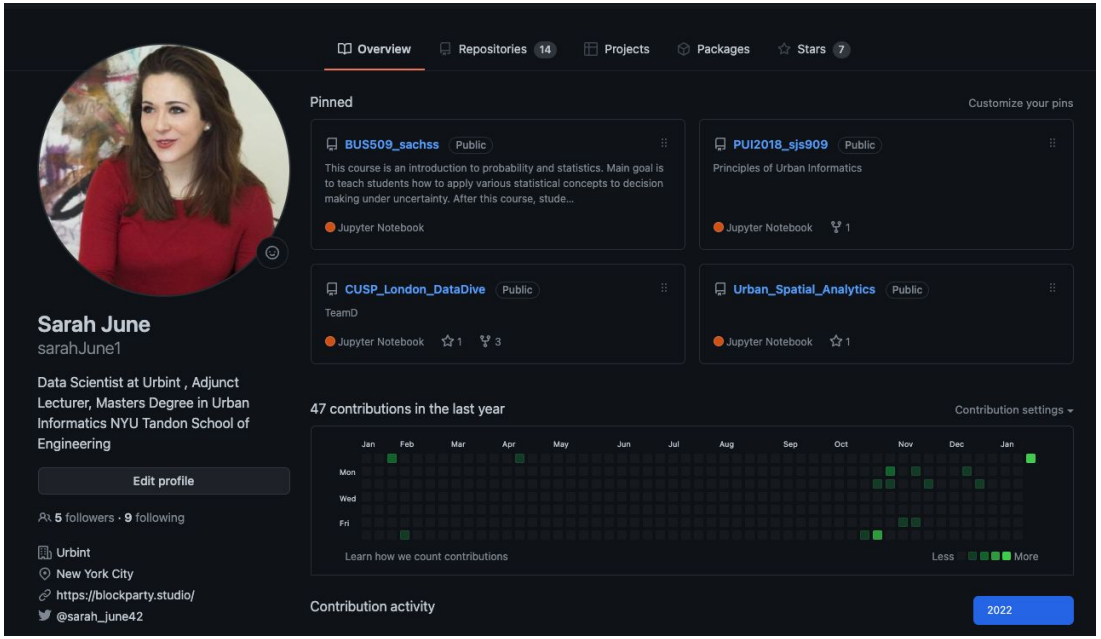
Urbint

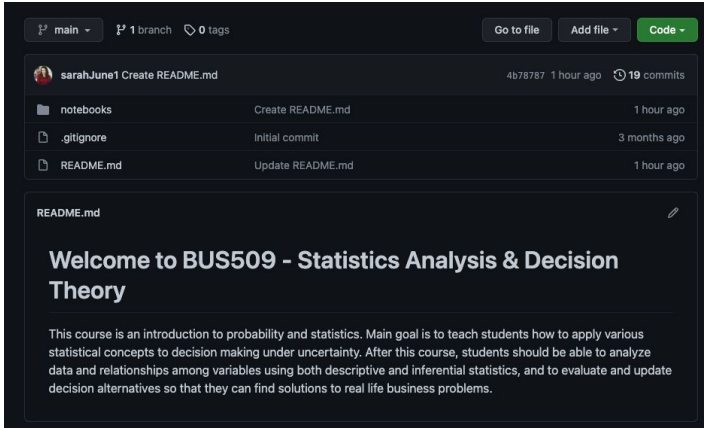
Why Python?

1. Pre-built tools (or functions) for statistical analysis
2. Flexible for working with data
3. Ubiquitous in the industry
4. Foundation for reproducible research

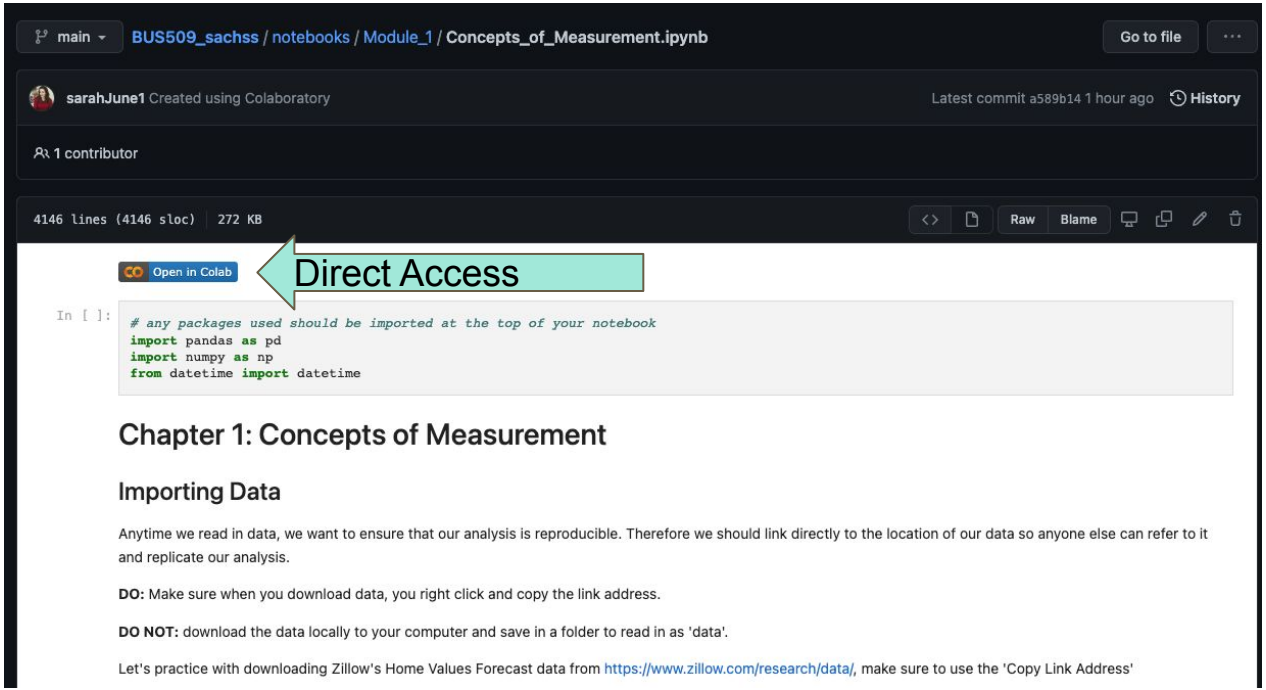
Using Python

GitHub

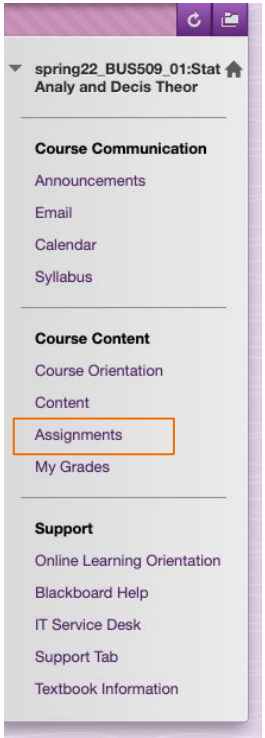

Overview
Repositories 14
Projects
Packages
Stars 7
Pinned
Customize your pins
BUS509_sachss Public
This course is an introduction to probability and statistics. Main goal is to teach students how to apply various statistical concepts to decision making under uncertainty. After this course, stude...
Jupyter Notebook
PUI2018_sjs909 Public
Principles of Urban Informatics
Jupyter Notebook 1
CUSP_London_DataDive Public
TeamD
Jupyter Notebook 1 3
Urban_Spatial_Analytics Public
Jupyter Notebook 1
Sarah June
sarahJune1
Data Scientist at Urbint , Adjunct Lecturer, Masters Degree in Urban Informatics NYU Tandon School of Engineering
Edit profile
5 followers · 9 following
Urbint
New York City
https://blockparty.studio/
@sarah_june42
47 contributions in the last year
Contribution settings
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan
Mon
Wed
Fri
Learn how we count contributions
Less More
Contribution activity
2022


main
1 branch
0 tags
Go to file
Add file
Code
sarahJune1 Create README.md
4b78787 1 hour ago
19 commits
notebooks Create README.md 1 hour ago
.gitignore Initial commit 3 months ago
README.md Update README.md 1 hour ago
README.md
Welcome to BUS509 - Statistics Analysis & Decision Theory
This course is an introduction to probability and statistics. Main goal is to teach students how to apply various statistical concepts to decision making under uncertainty. After this course, students should be able to analyze data and relationships among variables using both descriptive and inferential statistics, and to evaluate and update decision alternatives so that they can find solutions to real life business problems.

GitHub


main
BUS509_sachss / notebooks / Module_1 / Concepts_of_Measurement.ipynb
Go to file
sarahJune1 Created using Colaboratory
Latest commit a589b14 1 hour ago
History
1 contributor
4146 lines (4146 sloc) | 272 KB
Raw
Blame
Open in Colab
Direct Access
In [ ]:
# any packages used should be imported at the top of your notebook
import pandas as pd
import numpy as np
from datetime import datetime
Chapter 1: Concepts of Measurement
Importing Data
Anytime we read in data, we want to ensure that our analysis is reproducible. Therefore we should link directly to the location of our data so anyone else can refer to it and replicate our analysis.
DO: Make sure when you download data, you right click and copy the link address.
DO NOT: download the data locally to your computer and save in a folder to read in as 'data'.
Let's practice with downloading Zillow's Home Values Forecast data from https://www.zillow.com/research/data/, make sure to use the 'Copy Link Address'

Homework Assignments



Assignments

Homework 0

Go through the tutorial of syntax from 00-02 Introduction to Notebook and beyond | Mohit Sharma, 01-01 Variables | Mohit Sharma, and 01-02 Strings | Mohit Sharma

- Create your first Colab notebook, To start using Google Colab, you first have to log in to your Google account. Then click here to go to Google Colab's home page.
- Replicate the code as your notebook, don't forget to give reference to the original author of the code within your notebook
- At the beginning of the notebook state who (if anyone) was in the group that the student worked in and describe the student's participation

Homework 1

Please submit one Google Colab notebook link with the following included:

Due Sat @ 11:59p.m

- Data wrangling practice - Homework 1
- Exercises 1.2 - 17, 18
- Exercises 1.3 - 19, 25, 31

Homework Requirements

ASSIGNMENT INFORMATION

Due Date	Points Possible
Saturday, January 29, 2022 11:59 PM	**10**

Go through the tutorial of syntax from 00-02 Introduction to Notebook and beyond | Mohit Sharma, 01-01 Variables | Mohit Sharma, and 01-02 Strings | Mohit Sharma

- Replicate the code as your notebook, don't forget to give reference to the original author of the code within your notebook
- At the beginning of the notebook state who (if anyone) was in the group that the student worked in and describe the student's participation

ASSIGNMENT SUBMISSION

Text Submission Write Submission

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

Paragraph | Arial | 10pt

https://colab.research.google.com/drive/1Ha5yA2PMKPNPftTmJgVnolzwI_AhWQI_?usp=sharing

Requirements:

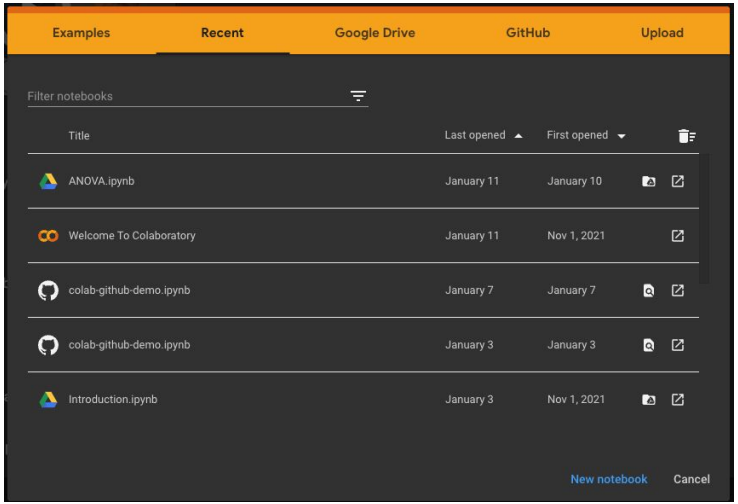
- Text Submission
- Link to Colab notebook
- Must be accessible by me (share it)

Homework Requirements

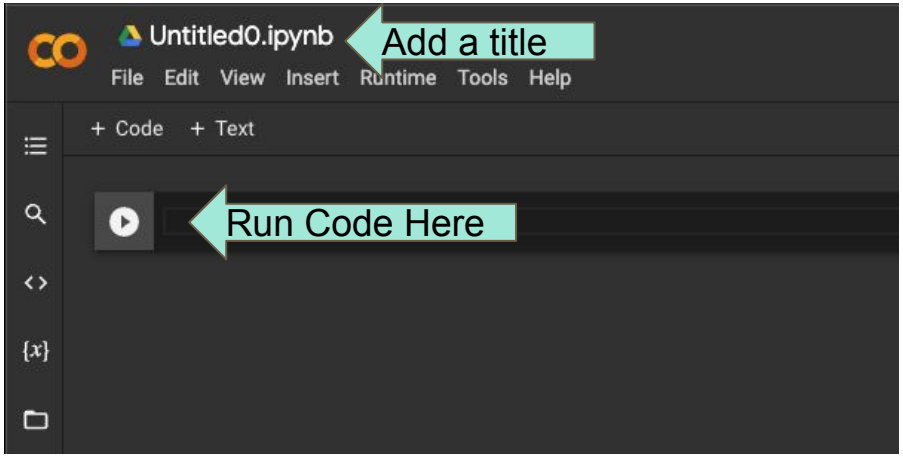
1. All homework assignments are allowed to be a collaborative effort
    a. MUST disclose who you worked with and what the contributions were
    b. 10% penalty if inconsistencies cannot be easily reconciled
2. Notebook must have description of assignments with clear indication of the question number's answer
3. Plots must be able to render and code must execute
    a. 10% penalty if code does not run
4. All graphs must have an interpretation below that describes what I am seeing
    a. 10% penalty if any plot is missing axis labels, title, or caption with description
5. Any code that is used from another source, contribution must be disclosed

How to Use Google Colab

To start using Google Colab, you first have to log in to your Google account. Then click here to go to Google Colab's home page.



Your Notebook



- Structure of Notebook contains cells for markdown and code

Notebook Demo

1. Introduction to Notebook Structure
2. How to write in markdown
3. How to run code