

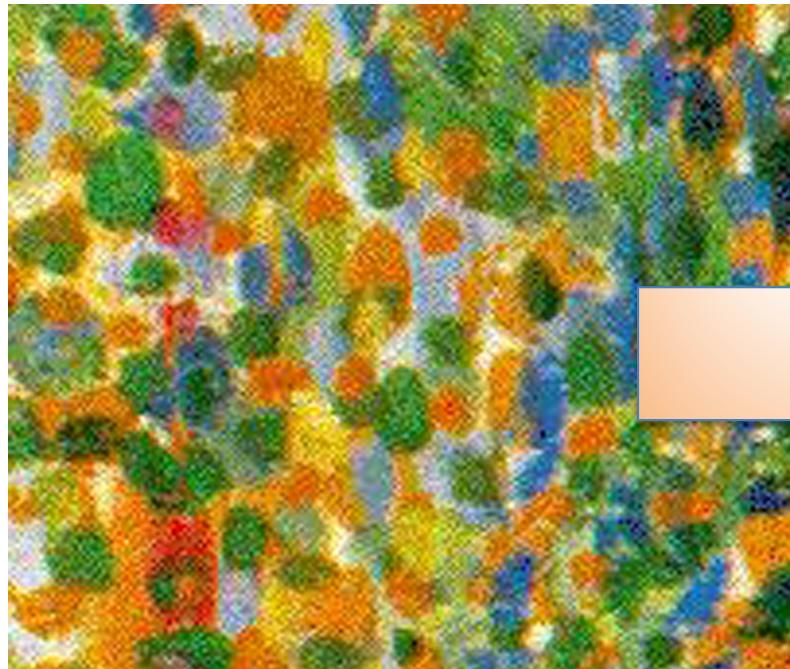


AUBURN  
ENGINEERING

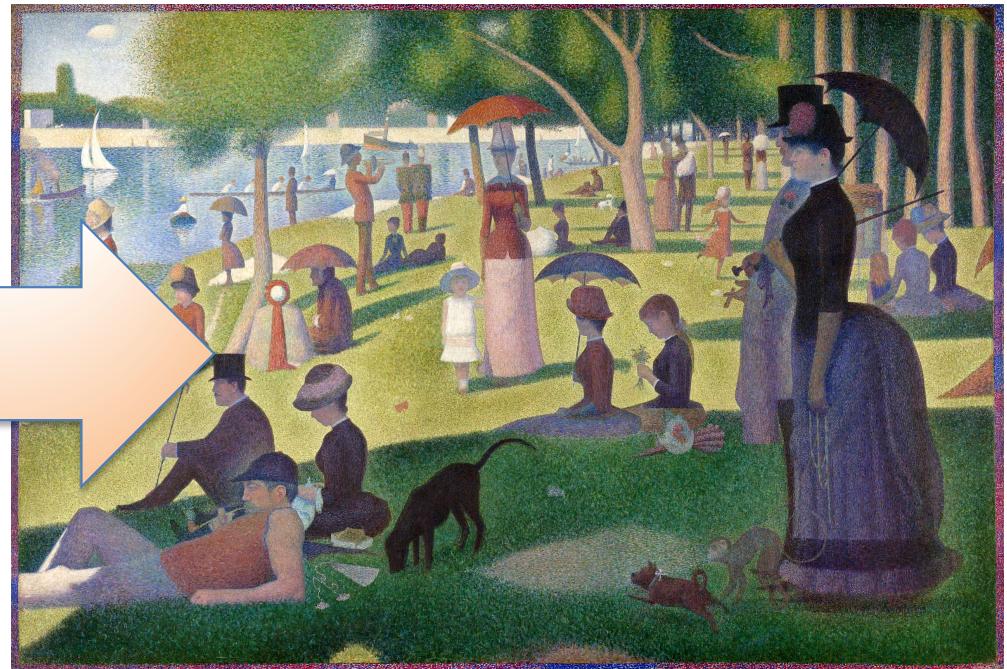
**ENGR 1110**

Module 8 Lecture

## Keeping perspective

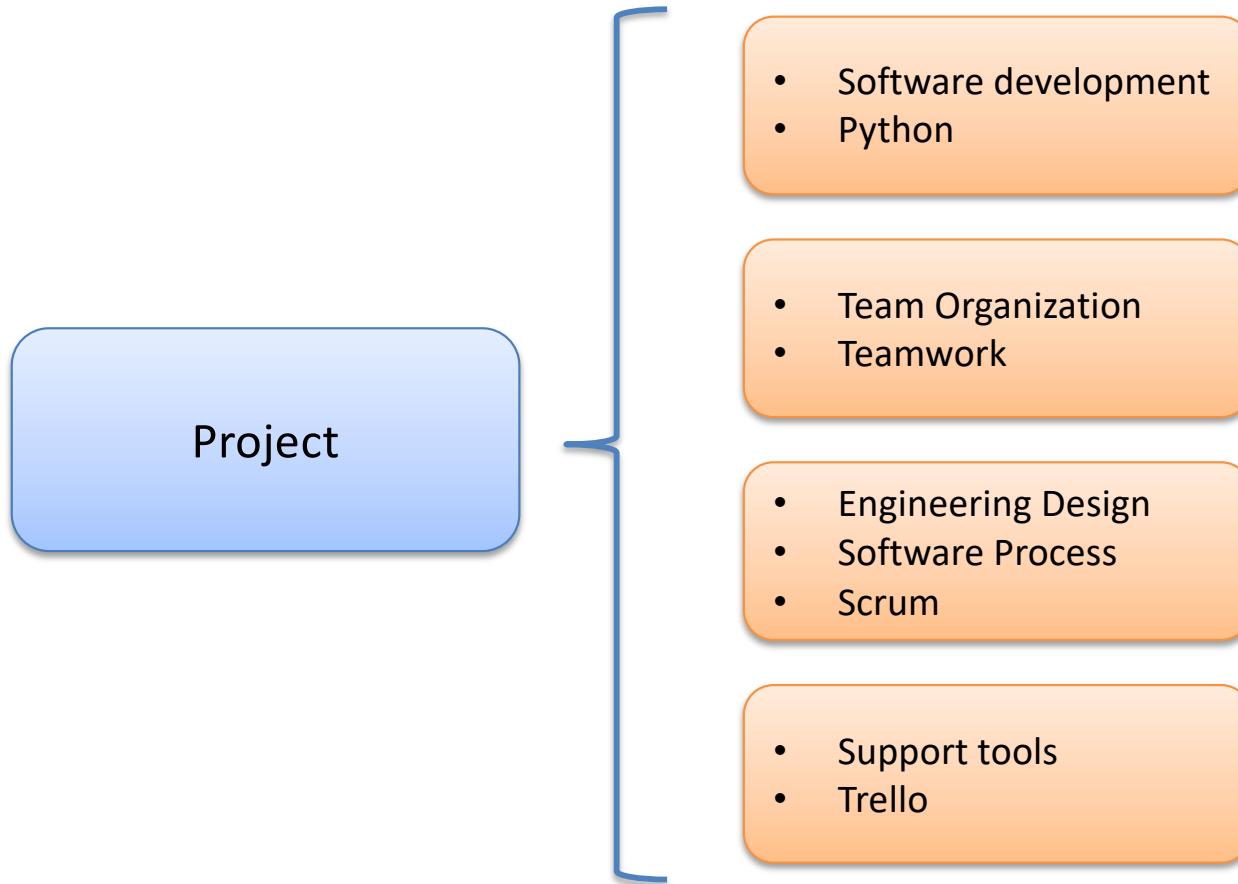


<https://www.principlegallery.com/technique-tuesday-pointillism-take-two/>



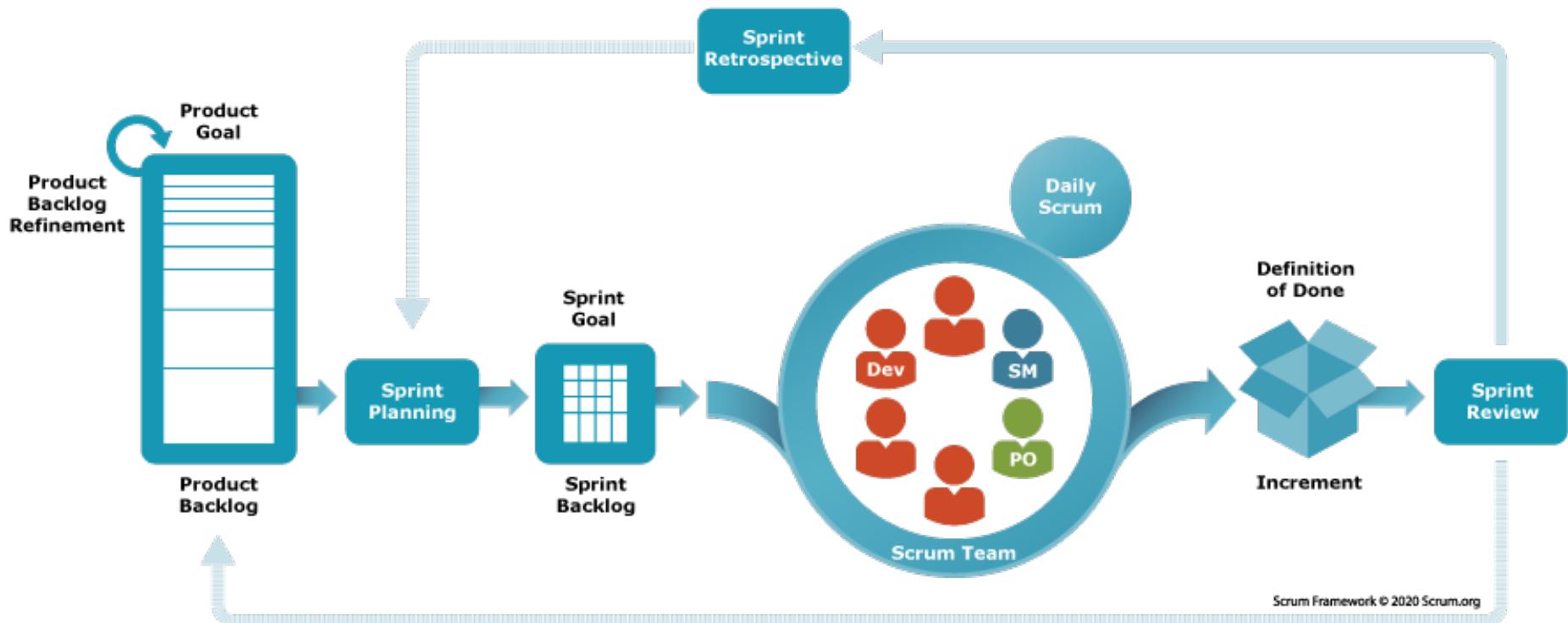
Georges Seurat, *A Sunday Afternoon on the Island of La Grande Jatte*, 1884-86,  
Public domain, via Wikimedia Commons

## Team Project

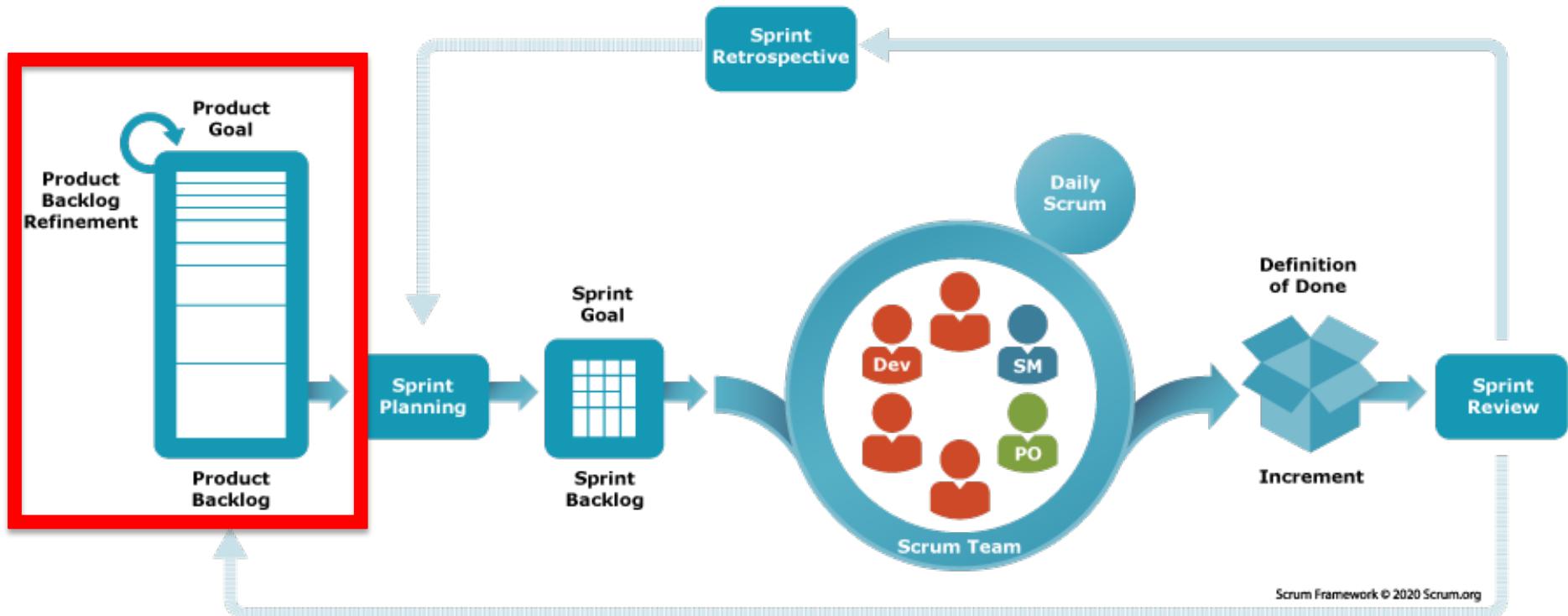


## **Scrum For This Module**

# Scrum



# Scrum



# Scrum

*Example: (adapted from source below)*

## Product Vision:

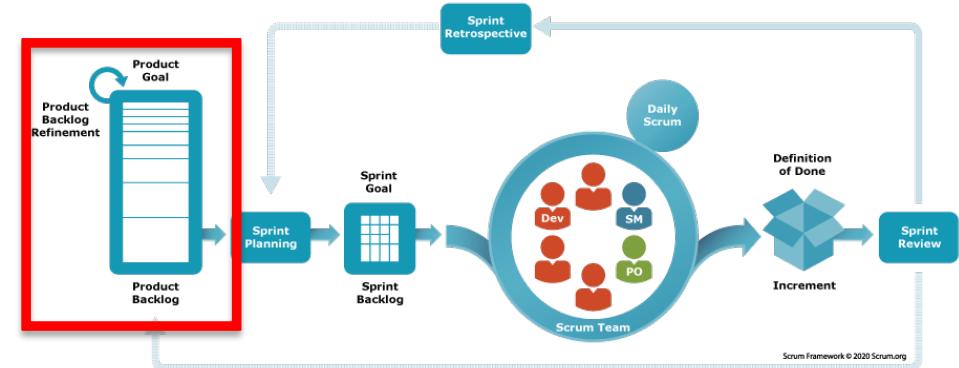
Be the leading online bakery in the state.

## Product Goals:

Goal 1: Launch a website that allows sales to customers inside Auburn.

Goal 2: Expand production/delivery to allow sales across Alabama.

Goal 3: Expand online presence via the Apple and Google Play app stores.



## Product Backlog:

1. Create a basic website structure.
2. Build capacity to list and purchase products using a credit card.
3. Many more here...
4. Launch website and fulfill the first orders.
5. Many more here...

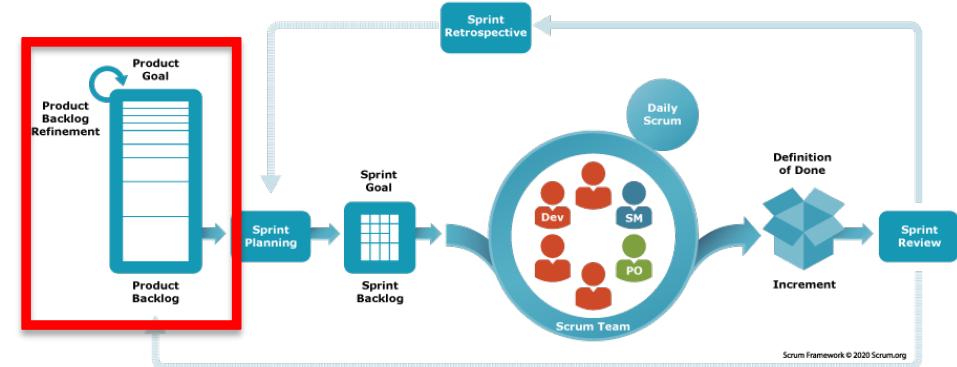
# Scrum in ENGR 1110

## Project Planning

Project planning will be done collaboratively by the team and will culminate in a Project Concept.

The **Project Concept** is a document that contains:

1. The name and brief bio-sketch of each team member, along with the member's role(s) – Developer, Product Owner, Scrum Master.
2. The Product Vision.
3. The Product Goal(s).
4. An initial Product Backlog.
5. A link to the public Trello board that will be used to manage and document the teams' project work.



**Project Concept:  
100 points, Due March 17**

# Scrum, Project, Timeline

## Module 3 (Jan 29 – Feb 4)

- Teams assigned, get to know your team

## Module 4 (Feb 5 – Feb 11)

- Project Description available to teams

## Module 5 (Feb 12 – Feb 18)

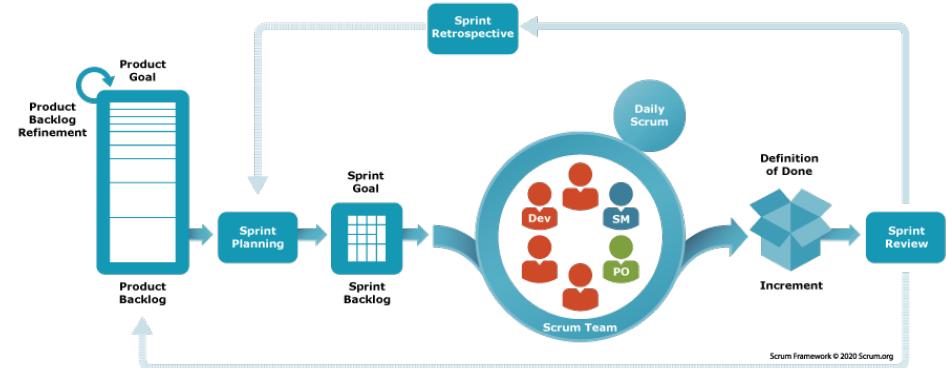
- Scrum & Trello introduced
- Brainstorm project ideas

## Module 6 (Feb 19 – Feb 25)

- Scrum explained
- Used Trello for individual assignment
- Discuss Project Concept with team

## Module 7 (Feb 26 – Mar 3 / 10)

- Used Trello for team assignment
- Make decisions about Project Concept



## Module 8 (Mar 11 – Mar 17)

- Deliver Project Concept
- Create Colab notebook
- Use Trello for team assignment

# Scrum, Project, Timeline

## Module 9 (Mar 18 – Mar 24)

- Project and sprint planning

Just plan!

## Module 10 (Mar 25 – Mar 31)

- Sprint 1

## Module 11 (Apr 1 – Apr 7)

- Sprint 2
- Alpha release

Do the work in increments, just as you planned it.

## Module 12 (Apr 8 – Apr 14)

- Sprint 3

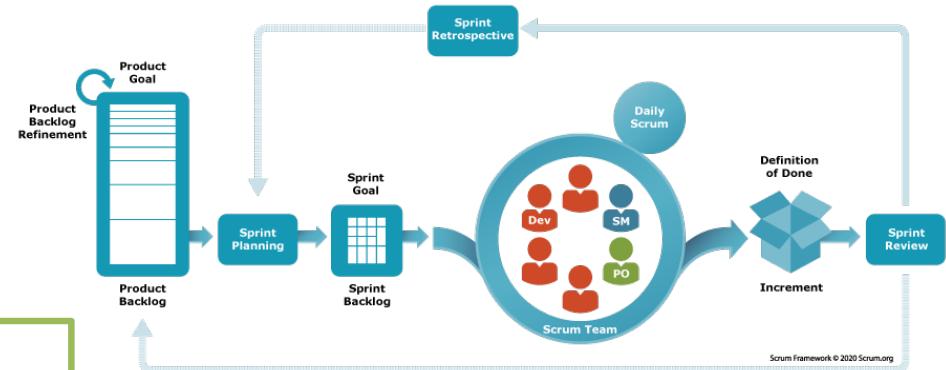
## Module 13 (Apr 15 – Apr 21)

- Sprint 4
- Beta release

## Module 14 (Apr 22 – Apr 26)

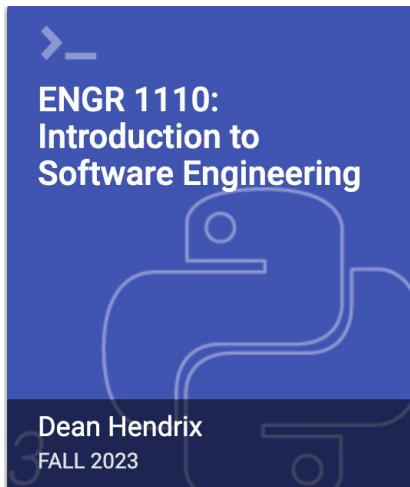
- Presentation

For this project, how you work is just as important or more important than what you produce.



Deliverable	Points	Due Date
Concept	100	Mar 17
Alpha	100	Apr 07
Beta	100	Apr 21
Presentation	100	Apr 22, 24

## **Python – Files & Plotting, Colab; Process – Using Trello to Manage Work**



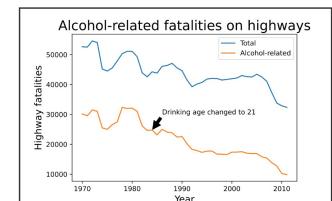
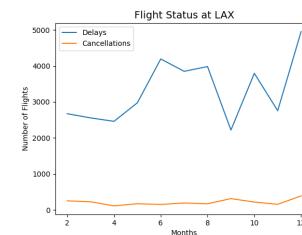
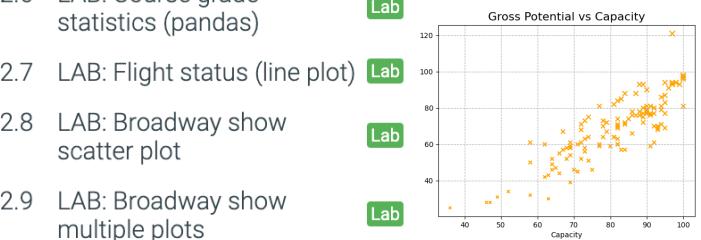
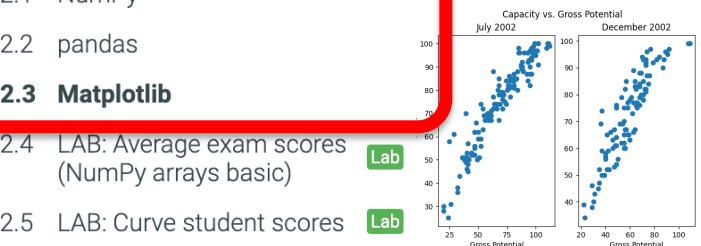
company, surname, forename  
Foo Tech, Jones, Alice  
Top Bar Hardware, Smith, Bob  
Quxcorp, Garcia, Carlos

## Chapter 11. Files

- 11) Files
  - 11.1 Reading files
  - 11.2 Writing files
  - 11.3 File systems
  - 11.4 Binary data
  - 11.5 Cmd-line args and files
  - 11.6 'with'
  - 11.7 CSV files
  - 11.8 LAB: Words in a range (lists)
  - 11.9 LAB: Word frequencies (lists)
  - 11.10 LAB: Sorting TV Shows (dictionaries and lists)
  - 11.11 LAB: Course Grade
  - 11.12 LAB: File name change
  - 11.13 LAB: Thesaurus

## Chapter 12. Plotting

- 12) Plotting
  - 12.1 NumPy
  - 12.2 pandas
  - 12.3 Matplotlib**
  - 12.4 LAB: Average exam scores (NumPy arrays basic)
  - 12.5 LAB: Curve student scores
  - 12.6 LAB: Course grade statistics (pandas)
  - 12.7 LAB: Flight status (line plot)
  - 12.8 LAB: Broadway show scatter plot
  - 12.9 LAB: Broadway show multiple plots





## ENGR 1110: Introduction to Software Engineering

Multiple instructors  
SPRING 2024

### Chapter 11. Files

11.8 LAB: Words in a range (lists)

Lab

11.9 LAB: Word frequencies (lists)

Lab

11.10 LAB: Sorting TV Shows (dictionaries and lists)

Lab

11.11 LAB: Course Grade

Lab

11.12 LAB: File name change

Lab

11.13 LAB: Thesaurus

Lab

### Chapter 12. Plotting

12.4 LAB: Average exam scores (NumPy arrays basic)

Lab

12.5 LAB: Curve student scores

Lab

12.6 LAB: Course grade statistics (pandas)

Lab

12.7 LAB: Flight status (line plot)

Lab

12.8 LAB: Broadway show scatter plot

Lab

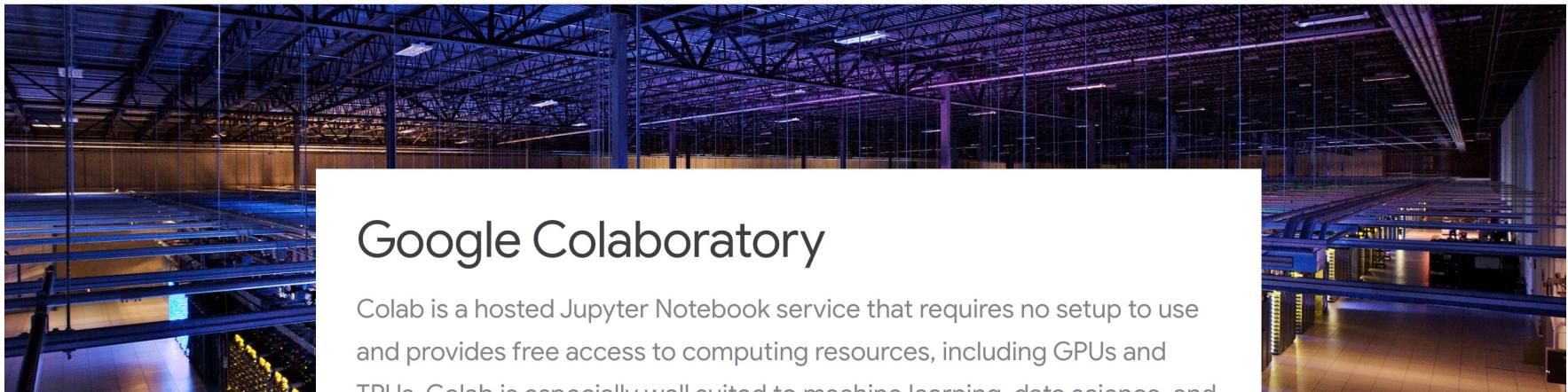
12.9 LAB: Broadway show multiple plots

Lab



- Team assignment with individual responsibilities & grades
- Each team member responsible for one lab from Ch 11 and one lab from Ch 12
- Use Trello to guide, plan, and document your work
- **Each team member submit a link to your Trello board as your turn-in.**

# Google Colab

[Blog](#)[Release Notes](#)[Notebooks](#)[Resources](#)[Open Colab](#)[New Notebook](#)[Sign Up](#)

## Google Colaboratory

Colab is a hosted Jupyter Notebook service that requires no setup to use and provides free access to computing resources, including GPUs and TPUs. Colab is especially well suited to machine learning, data science, and education.

[Open Colab](#)[New Notebook](#)

Get started with a free trial

# Google Colab



## Individual Colab Assignment

Recreate the following sample:

<https://colab.research.google.com/drive/1mjDot4RXf4nIN7xKYfABMgQym2xtXWc->

ENGR 1110 First Colab Notebook.ipynb

File Edit View Insert Runtime Tools Help Last saved at March 9

+ Code + Text

Comment Share Colab AI

Alcohol Fatalities 1970 - 2012

This notebook will compare the trend in total highway fatalities to those involving alcohol from 1970 through 2012.

Import a Python library for plotting:

```
[ ] import matplotlib.pyplot as plt
```

Use the `curl` command line tool to download a CSV file with data for 1970 through 2012.

Data for this project is adapted from <http://www.alcoholalert.com/drunk-driving-statistics.html>.

```
[ ] !curl https://raw.githubusercontent.com/hendrixr/engr-1110/main/docs/data/dd_stats.csv --output dd_stats.csv
```

	Total	% Received	% Xferd	Average Speed	Time	Time	Time	Current
100	503	100	503	0	0	5901	0	5917

Read the data from the downloaded file.

```
[ ] with open('dd_stats.csv') as f:  
    total_fatalities = []  
    alcohol_fatalities = []  
    for line in f:  
        total, alcohol = line.split(',')  
        total_fatalities.append(int(total))  
        alcohol_fatalities.append(int(alcohol))
```

