

2025

4Geeks Academy: data science cohort 12

DAY 6: WEEKS 1 & 2 RECAP

TOPICS: WHAT TO KNOW

01 GIT & GITHUB

02 PYTHON

03 PANDAS

04 DATA VISUALIZATION

05 SQL

01 GIT & GITHUB

GITHUB

Manage remote repositories on the web:

- Find and navigate repositories
- Create forks
- Create and merge pull requests
- Create and manage codespaces

GIT

Manage 'local' repositories on the command line:

- `git status` - check state of repository
- `git add` - add a file to staging
- `git commit` - save changes to repository
- `git push` - push local changes to remote repository
- `git pull` - get changes from remote repository

Understand the difference & how they interact!

02 PYTHON

DATA TYPES & STRUCTURES

- Integers, floats, strings, booleans
- Lists & dictionaries

CONTROL STRUCTURES

- Loops
- Conditionals

FUNCTIONS

- Using built in functions
- Defining custom functions
- Returns and arguments

How to find information about Python and Python libraries

03 PANDAS

SELECTING DATA

- By row(s)
- By columns(s)
- By row(s) and column(s)
- By conditions

EX: `sales_df[sales_df['product_a'] > 200]`

APPLYING FUNCTIONS

- Math on column or rows
- Builtin functions
- Custom functions

EX: `sales_df['product_a'].sum()`

How to find information about Pandas methods & syntax

04 DATA VISUALIZATION

PLOT TYPES

- Bar graphs
- Scatter plots
- Histograms
- Boxplots

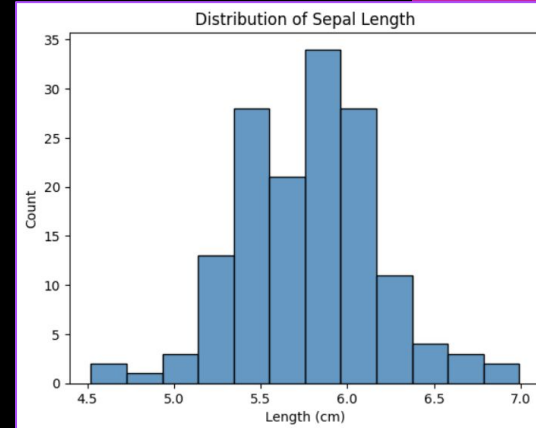
PLOTTING LIBRARIES

- Matplotlib
- Seaborn

```
import seaborn as sns

sns.histplot(df_iris['sepal_length'])
plt.title('Distribution of Sepal Length')
plt.xlabel('Length (cm)')
plt.ylabel('Count')
plt.show()
```

✓ 0.1s



Best practices for plotting quantitative data

05 SQL

WHAT IS IT

- Use case(s)
- Client server architecture

TOOLS

- Databases
- Python libraries
- Object relational mappers

BASIC QUERIES

- Operations: **SELECT**, **INSERT**, **UPDATE**, **DELETE**
- Clauses: **FROM**, **WHERE**, **GROUP BY**, **HAVING**, **ORDER BY** and **LIMIT**

```
SELECT column1, column2 FROM table1 WHERE column1 = 3 ORDER BY column2 LIMIT 100;
```