Collapse All

Module 0: Getting Started

Complete All Items

- Welcome to the Course
- Explore the Syllabus
- Onboarding Survey
  0 pts | Submitted

Module 1: Kickstarting with Excel

Prerequisites: Module 0: Getting Started

Complete All Items

Introduction to Module 1

- 1.0.1: Excelling with Excel
- 1.0.2: Module 1 Roadmap
- 1.0.3: Getting Ready for Virtual Class
- 1.0.4: Kickstarting with Excel

Getting Started with Excel

- 1.1.1: Download and Install Excel
- 1.1.2: Set Up Your Folder Structure
- 1.1.3: Download the Kickstarter Data

Viewing the Data

Viewing the Data

- 1.2.1: Get Situated in the Big Picture
- 1.2.2: Initial Look at the Data
- 1.2.3: Filtering, Formatting, and Freezing
- 1.2.4: Conditional Formatting
- 1.2.5: Finding Averages
- 1.2.6: Errors and Debugging

Using Pivot Tables and Pivot Charts

- 1.3.1: Pivoting Toward Success
- 1.3.2: Charting the Parent Category
- 1.3.3: Timing Success

Using Filters and Searches to Deepen Your Analysis

- 1.4.1: Extra Filters
- 1.4.2: VLOOKUP

Applying Descriptive Statistics and Visualization

- 1.5.1: Measures of Central Tendency
- 1.5.2: Measures of Spread
- 1.5.3: Identifying and Addressing Outliers
- 1.5.4: Visualizing Distributions with Box Plots

Sharing Your Findings

- 1.6.1: Using GitHub

Application

- Module 1 Challenge
  Jan 10 | 100 pts | Submitted ✓
- Module 1 Career Connection

Module 2: VBA of Wall Street

Prerequisites: Module 0: Getting Started | Complete All Items ✓

Introduction to Module 2

- 2.0.1: Make Your Way With VBA
- 2.0.2: Module 2 Roadmap
- 2.0.3: Getting Ready for Virtual Class
- 2.0.4: VBA of Wall Street

Getting Started with VBA

- 2.1.1: Install Developer Tools
- 2.1.2: Download the Dataset and Set Up the VBA Editor
- 2.1.3: Enable Macros
- 2.1.4: Create a Simple Test Macro

Analyze Stock Data with VBA

- **2.2.1: Create a Worksheet for Your Analysis**
- **2.2.2: Write Readable Code**
- **2.2.3: Find Total Daily Volume for DQ in 2018**
- **2.2.4: Get DQ's Yearly Return for 2018**

Analyze Multiple Stocks

- **2.3.1: Create a New Worksheet and Subroutine**
- **2.3.2: Loop Over All Tickers**
- **2.3.3: Reuse Code**

Make the Worksheet Readable

- **2.4.1: Static Formatting**
- **2.4.2: Conditional Formatting**

Make the Worksheet Interactive

- **2.5.1: Make a Run Button**
- **2.5.2: Run the Analysis for Any Year**
- **2.5.3: Measure Code Performance**

Application

Module 2 Challenge
Jan 17 | 100 pts | Submitted ✓

Module 2 Career Connection

Unit Assessment: Excel & VBA
Jan 17 | 100 pts | Submitted

Module 3: PyPoll with Python

Prerequisites: Module 0: Getting Started | Complete All Items

Introduction to Module 3

- 3.0.1: The Power of Python
- 3.0.2: Module 3 Roadmap
- 3.0.3: Getting Ready for Virtual Class
- 3.0.4: Welcome to PyPoll

Get Started with the Command Line and Python

- 3.1.1: The Command Line
- 3.1.2: Install Python
- 3.1.3: Install Visual Studio Code
- 3.1.4: Create a GitHub Repository
- 3.1.5: Clone a GitHub Repository

Python Practice

- 3.2.1: Create a Python File
- 3.2.2: Execute Python Files

3.2.2: Execute Python Files

3.2.3: Data Types

3.2.4: Perform Calculations Using Python

3.2.5: Data Structures: Lists

3.2.6: Data Structures: Tuples

3.2.7: Data Structures: Dictionaries

3.2.8: Decision Statements

3.2.9: Membership and Logical Operators

3.2.10: Repetition Statements

3.2.11: Printing Formats

Open the Election Results

3.3.1: Import and Inspect the Data

3.3.2: Overview of the Project

3.3.3: Pseudocoding

Get Started with File Processing

3.4.1: Python Dependencies, Modules, and Packages

3.4.2: Open and Read Files Using Python

3.4.3: Write to Files with Python

- **3.4.4: Read the Election Results**
- **3.4.5: Commit Your Code**

Analyzing the Election Data

- **3.5.1: Get the Total Votes**
- **3.5.2: Get the Candidates in the Election**
- **3.5.3: Get the Candidates' Votes**
- **3.5.4: Determine Candidates' Percentage of Votes**
- **3.5.5: Determine the Winning Candidate**
- **3.5.6: Commit Your Code**

Finalize the Election Results

- **3.6.1: Write the Election Results to a Text File**
- **3.6.2: Write the Candidates' Results to a Text File**
- **3.6.3: Write the Winning Candidate's Results to a Text File**
- **3.6.4: Commit the Final Code to GitHub**
- **3.6.5: Update Your README File**

Application

- **Module 3 Challenge**
  Jan 24 | 100 pts | Submitted ✓
- **Module 3 Career Connection**

Module 4: PyCitySchools with Pandas

Prerequisites: Module 0: Getting Started

Complete All Items

Introduction to Module 4

- 4.0.1: Using Pandas and Jupyter Notebook
- 4.0.2: Module 4 Roadmap
- 4.0.3: Getting Ready for Virtual Class
- 4.0.4: PyCitySchools

Anaconda Installation and Jupyter Notebook

- 4.1.1: Overview of Anaconda
- 4.1.2: Introduction to Jupyter Notebook

Creating and Activating a Development Environment

- 4.2.1: Create Your Development Environment
- 4.2.2: Activate Your Development Environment
- 4.2.3: Create and Clone a New GitHub Repository

Working with Jupyter Notebook and Pandas

- 4.3.1: Start Your Jupyter Notebook Server
- 4.3.2: Create a Jupyter Notebook File
- 4.3.3: Overview of the Jupyter Notebook Environment

4.3.3: Overview of the Jupyter Notebook Environment

4.3.4: Practice Using Jupyter Notebook

4.3.5: Overview of the Pandas Library

Convert CSV Files to a Pandas DataFrame

4.4.1: Import and Inspect CSV Files

4.4.2: Overview of the School Data Analysis Project

4.4.3: Load and Read CSV Files

4.4.4: Commit Your Code

Exploring the Data

4.5.1: Find Missing Values

4.5.2: Handle Missing Data

4.5.3: Determine Data Types

4.5.4: Get the Incorrect Student Names

4.5.5: Remove Strings: strip() vs. replace()

4.5.6: Replace Substrings

4.5.7: Fix the Students' Names

4.5.8: Commit Your Code

Verify the Clean Student Data

4.6.1: Download a Working Version of the Code

4.6.1: Download a Working Version of the Code

Generate the School District Summary

- 4.7.1: Merge DataFrames
- 4.7.2: Get the Number of Students
- 4.7.3: Get the Number of Schools
- 4.7.4: Get the Total Budget
- 4.7.5: Get the Score Averages
- 4.7.6: Get the Passing Percentages
- 4.7.7: Create a District Summary DataFrame
- 4.7.8: Format Columns
- 4.7.9: Reorder Columns
- 4.7.10: Commit Your Code

Generate the School Summary

- 4.8.1: Set the Index to the School Name
- 4.8.2: Get the Student Count Per School
- 4.8.3: Get the Budget Per Student
- 4.8.4: Get the Score Averages Per School
- 4.8.5: Get the Passing Percentages Per School

- **4.8.6: Create the School Summary DataFrame**
- **4.8.7: Clean Up the DataFrame**
- **4.8.8: Commit Your Code**

High and Low Performing Schools

- **4.9.1: Find the Highest Performing Schools**
- **4.9.2: Find the Lowest Performing Schools**
- **4.9.3: Object Oriented Programming**
- **4.9.4: Commit Your Code**

Average Math and Reading Scores by Grade

- **4.10.1: Create Grade-Level DataFrames**
- **4.10.2: Score Averages Grouped by School Name**
- **4.10.3: Combine each grade level Series into a DataFrame**
- **4.10.4: Format the Averages and Remove the Index Name**
- **4.10.5: Commit Your Code**

Group Scores by School Spending per Student

- **4.11.1: Establish the Spending Ranges per Student**
- **4.11.2: Categorize the Spending Bins**
- **4.11.3: Group by the Spending Ranges**

4.11.4: Create a DataFrame for the Scores by School Spending

4.11.5: Commit Your Code

Group Scores by School Size

4.12.1: Create Bins for School Size

4.12.2: Categorize the Size Bins

4.12.3: Group by School Size

4.12.4: Create a DataFrame for the Scores by School Size

4.12.5: Commit Your Code

Group Scores by School Type

4.13.1: Group By School Type

4.13.2: Create a DataFrame for the Scores by School Type

4.13.3: Commit Your Final Code

Application

Module 4 Challenge
Jan 31 | 100 pts | Submitted

Module 4 Career Connection

▾ Module 5: PyBer with Matplotlib

Prerequisites: Module 0: Getting Started

Complete All Items

Introduction to Module 5

- 5.0.1: Visualizing Ride-Sharing Data
- 5.0.2: Module 5 Roadmap
- 5.0.3: Getting Ready for Virtual Class
- 5.0.4: PyBer

Create Visualizations Using Matplotlib

- 5.1.1: Create and Clone a New GitHub Repository
- 5.1.2: The Matplotlib Library
- 5.1.3: Create Line Charts
- 5.1.4: Annotate Charts
- 5.1.5: Create Bar Charts Using the MATLAB Approach
- 5.1.6: Create Bar Charts Using the Object-Oriented Approach
- 5.1.7: Create Scatter Plots and Bubble Charts
- 5.1.8: Create Pie Charts
- 5.1.9: Chart Extras
- 5.1.10: Plot a Pandas DataFrame and Series

Convert CSV Files to Pandas DataFrames

- 5.2.1: Import and Inspect CSV Files

- **5.2.2: Overview of the Project**
- **5.2.3: Load and Read the CSV files**
- **5.2.4: Explore the Data in Pandas**
- **5.2.5: Commit Your Code**

Create a Bubble Chart for the Ride-Sharing Data

- **5.3.1: Create DataFrames for Each Type of City**
- **5.3.2: Get the Number of Rides for Each City Type**
- **5.3.3: Get the Average Fare for Each City Type**
- **5.3.4: Get the Average Number of Drivers for Each City Type**
- **5.3.5: Create Bubble Charts**
- **5.3.6: Create a Bubble Chart for All Cities**
- **5.3.7: Commit Your Code**

Calculate Summary Statistics

- **5.4.1: Summary Statistics for Number of Rides by City Type**
- **5.4.2: Summary Statistics for the Fare by City Type**
- **5.4.3: Summary Statistics for the Number of Drivers by City Type**
- **5.4.4: Create Box-and-Whisker Plots**
- **5.4.5: Commit Your Code**

Percentage of Total Fares by City Type

- **5.5.1: Get the Percentage of Fares for Each City Type**
- **5.5.2: Pie Chart for the Percentage of Fares by City Type**
- **5.5.3: Commit Your Code**

Percentage of Total Rides by City Type

- **5.6.1: Calculate Ride Percentages**
- **5.6.2: Pie Chart for Percentage of Rides by City Type**
- **5.6.3: Commit Your Code**

Percentage of Total Drivers by City Type

- **5.7.1: Calculate Driver Percentages**
- **5.7.2: Pie Chart for the Percentage of Drivers for Each City Type**
- **5.7.3: Commit Your Final Code**

Application

- **Module 5 Challenge**
  Feb 7 | 100 pts | Submitted ✓
- **Module 5 Career Connection**

▾ Module 6: WeatherPy with Python APIs

Prerequisites: Module 0: Getting Started

Complete All Items ✓

Introduction to Module 6

- 6.0.1: Using APIs to Visualize Weather Data
- 6.0.2: Module 6 Roadmap
- 6.0.3: Getting Ready for Virtual Class
- 6.0.4: Welcome to APIs and World Wide Weather

Generate Random Coordinates of World Cities

- 6.1.1: Create and Clone a New GitHub Repository
- 6.1.2: Overview of the Project
- 6.1.3: Review the Geographic Coordinate System
- 6.1.4: Generate Random Latitudes and Longitudes
- 6.1.5: Generate Random World Cities

Retrieve, Collect, and Clean Weather Data

- 6.2.1: Understanding APIs
- 6.2.2: Get Started with OpenWeatherMap API
- 6.2.3: Make an API Call
- 6.2.4: Make a Request for Data to an API
- 6.2.5: Parse a Response from an API
- 6.2.6: Get the City Weather Data

- 6.2.7: Create a DataFrame of City Weather Data

Plot Weather Data

- 6.3.1: Plot Latitude vs. Temperature
- 6.3.2: Plot Latitude vs. Humidity
- 6.3.3: Plot Latitude vs. Cloudiness
- 6.3.4: Plot Latitude vs. Wind Speed

Determine Correlations

- 6.4.1: Use Linear Regression to Find the Relationship Between Variables
- 6.4.2: Find the Correlation Between Latitude and Maximum Temperature
- 6.4.3: Find the Correlation Between Latitude and Percent Humidity
- 6.4.4: Find the Correlation Between Latitude and Percent Cloudiness
- 6.4.5: Find the Correlation Between Latitude and Wind Speed

Use Google API to Create Heatmaps

- 6.5.1: Set Up Google Maps and Places API
- 6.5.2: Create Heatmaps for Weather Parameters
- 6.5.3: Get Vacation Criteria
- 6.5.4: Map Vacation Criteria

Application

Module 6 Challenge
Feb 14 | 100 pts | Submitted

Module 6 Career Connection

Unit Assessment: Python
Feb 14 | 100 pts | Submitted

Module 7: Employee Database with SQL

Prerequisites: Module 0: Getting Started

Complete All Items

Introduction to Module 7

- **7.0.1: Exploring Databases with SQL**
- **7.0.2: Module 7 Roadmap**
- **7.0.3: Getting Ready for Virtual Class**
- **7.0.4: Welcome to Pewlett Hackard!**

Data Modeling

- **7.1.1: Download and Install Your Tools**
- **7.1.2: Identifying Data Relationships**
- **7.1.3: Determine Entity Relationships**
- **7.1.4: Use the Quick Database Diagrams Tools**
- **7.1.5: Create ERDs**

Data Engineering

- 7.2.1: Create a Database
- 7.2.2: Create Tables in SQL
- 7.2.3: Import Data
- 7.2.4: Troubleshoot Imports

Data Analysis

- 7.3.1: Query Dates
- 7.3.2: Join the Tables
- 7.3.3: Joins in Action
- 7.3.4: Use Count, Group By, and Order By
- 7.3.5: Create Additional Lists
- 7.3.6: Create a Tailored List

Application

- **Module 7 Challenge**
  Feb 21 | 100 pts | Submit
- Module 7 Career Connection

Module 8: ETL - Extract, Transform, Load

Prerequisites: Module 0: Getting Started

Complete All Items

Introduction to Module 8

- 8.0.1: Use ETL to Collect, Import, and Process Data

8.0.1: Use ETL to Collect, Import, and Process Data

8.0.2: Module 8 Roadmap

8.0.3: Getting Ready for Virtual Class

8.0.4: Lights! Camera! Data!

Overview of the ETL Process

8.1.1: Extract, Transform, Load

Extract the Data

8.2.1: Extract the Wikipedia Movies JSON

8.2.2: Extract the Kaggle Data

Clean Individual Datasets

8.3.1: Data-Cleaning Strategies

8.3.2: Iterative Process for Cleaning Data

8.3.3: Investigate the Wikipedia Data

8.3.4: Revisit Functions

8.3.5: Create a Function to Clean the Data, Part 1

8.3.6: Create a Function to Clean the Data, Part 2

8.3.7: Remove Duplicate Rows

8.3.8: Make a Plan to Convert and Parse the Data

8.3.9: Write Regular Expressions

8.3.9: Write Regular Expressions

8.3.10: Parse the Box Office Data

8.3.11: Parse Budget Data

8.3.12: Clean the Kaggle Data

Merge Datasets

8.4.1: Merge Wikipedia and Kaggle Metadata

8.4.2: Transform and Merge Rating Data

Load the Data

8.5.1: Connect Pandas and SQL

Application

Module 8 Challenge
Feb 28 | 100 pts | Submit

Module 8 Career Connection

Module 9: Surf's Up with Advanced Data Storage and Retrieval

Prerequisites: Module 0: Getting Started **Complete All Items**

Introduction to Module 9

9.0.1: Exploring Weather Data

9.0.2: Module 9 Roadmap

9.0.3: Getting Ready for Virtual Class

9.0.4: Investing in Waves and Ice Cream

SQLite and SQLAlchemy

9.1.1: Download the Weather Data

9.1.2: Prepare Your Tools

9.1.3: Import Dependencies

9.1.4: Getting Started with SQLite

9.1.5: Getting Started with SQLAlchemy

Precipitation Analysis

9.2.1: Retrieve the Precipitation Data

9.2.2: Save Query Results

9.2.3: Sort the DataFrame

9.2.4: Plot the Data

9.2.5: Generate the Summary

Weather Station Analysis

9.3.1: Find the Number of Stations

9.3.2: Determine the Most Active Stations

9.3.3: Find Low, High, and Average Temperatures

9.3.4: Plot the Highest Number of Observations

Getting Acquainted with Flask

- 9.4.1: Incorporate Flask into Data Analysis
- 9.4.2: Building Flask Routes
- 9.4.3: Set Up Flask and Create a Route

Build a Climate App Using Flask

- 9.5.1: Set Up the Database and Flask
- 9.5.2: Create the Welcome Route
- 9.5.3: Precipitation Route
- 9.5.4: Stations Route
- 9.5.5: Monthly Temperature Route
- 9.5.6: Statistics Route

Application

- Module 9 Challenge
  Mar 7 | 100 pts | Submit
- Module 9 Career Connection
- Unit Assessment: Databases
  Mar 7 | 100 pts | Submit

Will unlock Feb 11 at 1:01am

Module 10: Mission to Mars - Web Scraping with HTML/CSS

Prerequisites: Module 0: Getting Started **Complete All Items**

Introduction to Module 10

- 10.0.1: Web Scraping to Extract Online Data
- 10.0.2: Module 10 Roadmap
- 10.0.3: Getting Ready for Virtual Class
- 10.0.4: Tools for Scraping

Getting Started Using Web Scraping Tools

- 10.1.1: Install Your Tools

Opening the Window to the Internet

- 10.2.1: Use HTML Elements
- 10.2.2: Using Chrome Developer Tools

Automate a Web Browser and Perform a Web Scrape

- 10.3.1: Use Splinter
- 10.3.2: Practice with Splinter and BeautifulSoup
- 10.3.3: Scrape Mars Data: The News
- 10.3.4: Scrape Mars Data: Featured Image
- 10.3.5: Scrape Mars Data: Mars Facts
- 10.3.6: Export to Python

Access Data in MongoDB

10.4.1: Store the Data

Display Data With Flask

10.5.1: Use Flask to Create a Web App

10.5.2: Update the Code

10.5.3: Integrate MongoDB Into the Web App

Make It Pretty

10.6.1: Customize the Appearance

Show It Off

10.7.1: Create a Portfolio

Application

Module 10 Challenge
Mar 14 | 100 pts | Submit

Module 10 Career Connection

Will unlock Feb 18 at 1:01am

Module 11: UFO Sightings with JavaScript

Prerequisites: Module 0: Getting Started

Complete All Items

Introduction to Module 11

11.0.1: Creating Dynamic Content

11.0.2: Module 11 Roadmap

- 11.0.3: Getting Ready for Virtual Class
- 11.0.4: JavaScript, Bootstrap, and UFOs

JavaScript Basics

- 11.1.1: Overview of ES6+
- 11.1.2: JavaScript in the Real World
- 11.1.3: Writing JavaScript

Building Webpages with JavaScript

- 11.2.1: JavaScript Components
- 11.2.2: Organize Your Repository
- 11.2.3: JavaScript Objects
- 11.2.4: Storyboarding

Functional JavaScript

- 11.3.1: Getting Started with JavaScript Functions
- 11.3.2: Simple JavaScript Functions
- 11.3.3: From Simple Functions to Arrow Functions

JavaScript for Loops

- 11.4.1: Use a JavaScript for Loop
- 11.4.2: Practice Using for Loops in JavaScript

Building Dynamic Tables

- 11.5.1: Introduction to Dynamic Tables
- 11.5.2: Add forEach to Your Table
- 11.5.3: Add Filters
- 11.5.4: Use the “If” Statement

Build the HTML

- 11.6.1: Bootstrap Components
- 11.6.2: Add the Data
- 11.6.3: Customize the Page with CSS

Application

- Module 11 Challenge
  Mar 21 | 100 pts | Submit
- Module 11 Career Connection

Will unlock Feb 25 at 1:01am

Module 12: Plotly & Belly Button Biodiversity

Complete All Items

Prerequisites: Module 0: Getting Started

Introduction to Module 12

- 12.0.1: Data Visualization in JavaScript
- 12.0.2: Module 12 Roadmap

12.0.3: Getting Ready for Virtual Class

12.0.4: From Bacteria to Beef

Getting Started with Plotly

12.1.1: Organizing Your Tools

12.1.2: Inspect a Plotly.js Chart

12.1.3: Create a Bar Chart

12.1.4: Create a Pie Chart

Transform Data with JavaScript

12.2.1: Functional JavaScript

12.2.2: Practicing JavaScript Methods

Retrieve External Data

12.3.1: Inspect an API call with D3.json()

12.3.2: Load a JSON file with D3.json()

12.3.3: Handle CORS Errors

JavaScript Events

12.4.1: JavaScript Event Listeners

12.4.2: Create a Dynamic Plotly Chart

12.4.3: Belly Button Demographics Panel

Deployment

12.5.1: Deploy the Project to GitHub Pages

Application

Module 12 Challenge
Mar 28 | 100 pts | Submit

Module 12 Career Connection

Will unlock Mar 4 at 1:01am

Module 13: Mapping Earthquakes with JS & APIs

Prerequisites: Module 0: Getting Started

Complete All Items

Introduction to Module 13

13.0.1: Visualizing Earthquake Data

13.0.2: Module 13 Roadmap

13.0.3: Getting Ready for Virtual Class

13.0.4: Welcome to Mapping Earthquakes

The Earthquake Mapping Project

13.1.1: Create and Clone a New GitHub Repository

13.1.2: Project Overview

Create Your First Map

13.2.1: The Mapbox API

13.2.2: Create a Branch on Your Repository

13.2.3: Create an HTML File and CSS File

13.2.4: Create a Simple Map

Don't Mess with the main Branch

13.3.1: Add, Commit, and Push to a Branch

13.3.2: Compare Branch to the main Branch

13.3.3: Create a Pull Request

13.3.4: Merge Branch Into main Branch

Map Geographical Features

13.4.1: Map a Single Point

13.4.2: Map Multiple Points

13.4.3: Map Lines

Map GeoJSON Data

13.5.1: Overview of GeoJSON Data

13.5.2: Map GeoJSON Point Type

13.5.3: Map Multiple GeoJSON Points

13.5.4: Add Multiple Maps

13.5.5: Map GeoJSON LineStrings

13.5.6: Map GeoJSON Polygons

Map Earthquakes

13.6.1: Add Earthquake Data to a Map

13.6.2: Add Style to the Earthquake Data

13.6.3: Add Color and a Popup for Each Earthquake

13.6.4: Add Earthquake Data as an Overlay

13.6.5: Add a Legend to the Map

13.6.6: Merge the Earthquake Branch with the main Branch

Application

Module 13 Challenge
Apr 4 | 100 pts | Submit

Module 13 Career Connection

Will unlock Mar 11 at 1:01am

Module 14: NY Citibike with Tableau

Prerequisites: Module 0: Getting Started

Complete All Items

Introduction to Module 14

14.0.1: Tableau Basics

14.0.2: Module 14 Roadmap

14.0.3: Getting Ready for Virtual Class

14.0.4: Citi Bike Cruisin'

Tableau Basics

14.1.1: Install Tableau Public

14.1.2: Download the Data

14.1.3: Set Up the Tableau Environment

14.1.4: Import Data into Tableau

14.1.5: Overview of Tableau

Tableau Worksheets, Part 1

14.2.1: Set Up Your Tableau Workspace

14.2.2: Introduction to Tableau Worksheets

14.2.3: Worksheet Best Practices

14.2.4: Using and Portraying Data to Answer Questions

14.2.5: Determine the Number of Trips

14.2.6: Find the Proportion of Short Term Customers to Annual Subscribers

14.2.7: Find the Peak Riding Hours in August

Tableau Worksheets, Part 2

14.3.1: Find Top Starting Locations

14.3.2: Find Top Ending Locations

14.3.3: Find the Number of Rides by Gender

14.3.4: Find the Average Trip Duration by Age

14.3.5: Determine the Bikes Due for Repair

14.3.6: Determine Bike Utilization

Tableau Dashboards

14.4.1: Introduction to Dashboards

14.4.2: Dashboard Best Practices

14.4.3: Add Worksheets to the Citi Bike Dashboard

Final Presentation

14.5.1: Introduction to Tableau Stories

Application

Module 14 Challenge
Apr 11 | 100 pts | Submit

Module 14 Career Connection

Unit Assessment: Visualization
Apr 11 | 100 pts | Submit

Will unlock Mar 18 at 1:01am

Module 15: Statistics and R

Prerequisites: Module 0: Getting Started

Complete All Items

Introduction to Module 15

15.0.1: Using Statistics and R to Boost Your Data Science Repertoire

15.0.2: Module 15 Roadmap

15.0.3: Getting Ready for Virtual Class

15.0.4: Putting the R in AutosRUs

Getting Started with R

15.1.1: Introduction to R

15.1.2: Install R

15.1.3: Install RStudio

Programming and ETL in R

15.2.1: Fundamentals of R Programming

15.2.2: Functions in R

15.2.3: Read and Write Using R

15.2.4: Select Data in R

15.2.5: Transform, Group, and Reshape Data Using the Tidyverse Package

Visualize Your Data Using ggplot2

15.3.1: Introduction to ggplot2

15.3.2: Build a Bar Plot in ggplot2

15.3.3: Add Formatting Functions

15.3.4: Build a Line Plot in ggplot2

15.3.5: Create Advanced Boxplots in ggplot2

15.3.6: Create Heatmap Plots

15.3.7: Add Layers to Plots

Introduction to Statistical Tests

15.4.1: Identifying Statistical Test Types

15.4.2: Identify Different Data Types

15.4.3: Dive Into Distributions

15.4.4: Test for Normality

15.4.5: Understand Skew

Introduction to Hypothesis Testing

15.5.1: Practice Hypothesis Testing

15.5.2: Assess Error in Hypothesis Testing

Perform an Analysis of Means in R

15.6.1: Sample Versus Population Dataset

15.6.2: Use the One-Sample t-Test

15.6.3: Use the Two-Sample t-Test

15.6.4: Use the Two-Sample t-Test to Compare Samples

15.6.5: Use the ANOVA Test

Correlation and Regression in R

15.7.1: The Correlation Conundrum

15.7.2: Return to Linear Regression

15.7.3: Perform Multiple Linear Regression

Characterize Categorical Data

15.8.1: Category Complexities

Getting Real With A/B Testing

15.9.1: Practice A/B Testing

Choose the Right Test for Your Data

15.10.1: Whose Analysis Is It Anyway?

Application

Module 15 Challenge
Apr 18 | 100 pts | Submit

Module 15 Career Connection

Will unlock Mar 25 at 1:01am

Module 16: Big Data

Prerequisites: Module 0: Getting Started

Complete All Items

Introduction to Module 16

- 16.0.1: Grasping the Scope of Big Data
- 16.0.2: Module 16 Roadmap
- 16.0.3: Getting Ready for Virtual Class
- 16.0.4: Welcome to Big Data!

Overview of Big Data

- 16.1.1: What Is Big Data?
- 16.1.2: Big Data Technologies

Using MapReduce to Process Data

- 16.2.1: MapReduce Process
- 16.2.2: mrjob Library

Using Spark to Handle Large Datasets

- 16.3.1: Key Features of Spark
- 16.3.2: Spark Architecture
- 16.3.3: Spark Parallelism
- 16.3.4: Spark API

Working with Spark DataFrames and Functions

- 16.4.1: PySpark in Google Colab Notebooks
- 16.4.2: Spark DataFrames and Datasets

16.4.3: Spark Functions

Natural Language Processing

16.5.1: Natural Language Processing

16.5.2: Computers Understanding Language

16.5.3: NLP Core Concepts

16.5.4: NLP Use Cases

16.5.5: NLP Pipeline

PySpark and Natural Language Processing

16.6.1: Tokenize Data

16.6.2: Stop Words

16.6.3: Term Frequency-Inverse Document Frequency Weight

16.6.4: Pipeline Setup to Run the Model

16.6.5: Run the Model

Cloud Databases with Amazon Web Services

16.7.1: Evaluate Amazon Web Services

16.7.2: Create an AWS Relational Database

16.7.3: Connect pgAdmin to Your RDS Instance

16.7.4: Test with Create, Read, Update, and Delete

Cloud Storage with S3 on AWS

- 16.8.1: Database Versus Data Storage
- 16.8.2: AWS's Simple Storage Service
- 16.8.3: PySpark and S3 Stored Data

ETL in the Cloud

- 16.9.1: PySpark ETL
- 16.9.2: Shut Down Your Instances
- 16.9.3: Check AWS billing

Application

- Module 16 Challenge
  Apr 25 | 100 pts | Submit
- Module 16 Career Connection

Will unlock Apr 1 at 1:01am

Module 17: Supervised Machine Learning and Credit Risk

Prerequisites: Module 0: Getting Started **Complete All Items**

Introduction to Module 17

- 17.0.1: Introduction to Machine Learning
- 17.0.2: Module 17 Roadmap
- 17.0.3: Getting Ready for Virtual Class

17.0.4: Predicting Credit Risk

Machine Learning Environment

17.1.1: Create a Machine Learning Environment

Supervised Learning

17.2.1: Overview of Machine Learning

17.2.2: Supervised Learning: Regression and Classification

17.2.3: Linear Regression Example

Logistic Regression

17.3.1: Overview of Logistic Regression

17.3.2: Logistic Regression to Predict Diabetes

17.3.3: How Logistic Regression Works

Classification Model Validation

17.4.1: Assess Accuracy, Precision, and Sensitivity

17.4.2: Confusion Matrix in Practice

Support Vector Machines

17.5.1: Overview of Support Vector Machines

17.5.2: SVM in Practice

Data Preprocessing in Machine Learning

17.6.1: Encode Labels With Pandas

17.6.2: Encode Labels With Scikit-learn

17.6.3: Create Custom Encoding

17.6.4: Scale and Normalize Data

Decision Trees

17.7.1: Overview of Decision Trees

17.7.2: Predict Loan Application Approval

17.7.3: Make Predictions and Evaluate Results

Ensemble Learning and Random Forests

17.8.1: Overview of Ensemble Learning

17.8.2: Predict Loan Applications

17.8.3: Fit the Model, Make Predictions, and Evaluate Results

Bagging and Boosting

17.9.1: Bootstrap Aggregation

17.9.2: Boosting

17.9.3: Boosting in Practice

Techniques to Resolve Class Imbalance

17.10.1: Oversampling

17.10.2: Undersampling

17.10.3: Combination Sampling With SMOTEENN

Application

Module 17 Challenge
May 2 | 100 pts | Submit

Module 17 Career Connection

Will unlock Apr 8 at 1:01am

Module 18: Unsupervised Machine Learning and Cryptocurrencies

Prerequisites: Module 0: Getting Started **Complete All Items**

Introduction to Module 18

18.0.1: Using Unsupervised Learning to Discover Unknown Patterns

18.0.2: Module 18 Roadmap

18.0.3: Getting Ready for Virtual Class

18.0.4: Unsupervised Learning and Crypto

Supervised vs. Unsupervised Learning

18.1.1: Supervised Learning Recap

18.1.2: Unsupervised Learning

18.1.3: Types of Unsupervised Learning: Transformations and Clustering

18.1.4: Install Your Tools

Data Preprocessing

- 18.2.1: Steps for Preparing Data
- 18.2.2: Pandas Refresher
- 18.2.3: Preprocessing Data With Pandas
- 18.2.4: Data Selection
- 18.2.5: Data Processing
- 18.2.6: Data Transformation

Clustering and the K-means Algorithm

- 18.3.1: Clustering Data
- 18.3.2: K-means Algorithm
- 18.3.3: Trial and Error of Finding Centroids

Using the Elbow Curve to Find Centroids

- 18.4.1: Elbow Curve
- 18.4.2: Use the Elbow Curve

Manage Data Features

- 18.5.1: Dimensionality Reduction
- 18.5.2: Principal Component Analysis
- 18.5.3: Mean, Variance, and Covariance

18.5.4: Linear Transformations

18.5.5: PCA's Underlying Theory

Hierarchical Clustering

18.6.1: Understanding Hierarchical Clustering

18.6.2: Dendrograms

18.6.3: Running Hierarchical Clustering

18.6.4: K-means vs. Hierarchical Clustering

Application

Module 18 Challenge
May 9 | 100 pts | Submit

Module 18 Career Connection

Will unlock Apr 15 at 1:01am

Module 19: Neural Networks and Deep Learning Models

Prerequisites: Module 0: Getting Started

Complete All Items

Introduction to Module 19

19.0.1: The Rise of Machine Learning

19.0.2: Module 19 Roadmap

19.0.3: Getting Ready for Virtual Class

19.0.4: Nonprofit Networking

Introduction to Neural Networks

- 19.1.1: What Is a Neural Network?
- 19.1.2: Perceptron, the Computational Neuron
- 19.1.3: Make the Connections and Explore TensorFlow Playground

Build Your First Neural Network

- 19.2.1: Set Up the TensorFlow Pipeline
- 19.2.2: Build a Basic Neural Network
- 19.2.3: Train and Test a Basic Neural Network
- 19.2.4: Nuances of Neural Networks on Nonlinear Numbers
- 19.2.5: Create the Connective Tissue, the Multiple Neuron Neural Network
- 19.2.6: Give Your Model a Synaptic Boost

Prepare Your Neural Network Datasets

- 19.3.1: Measure Twice, Model Once
- 19.3.2: The Headache of Categorical Variables
- 19.3.3: Practice Encoding Categorical Variables
- 19.3.4: Span the Gap Using Standardization

Dig Deeper Into Neural Networks

- 19.4.1: Unleash the Hidden Potential of Neural Networks

19.4.2: Real Data, Real Practice Imports and Setup

19.4.3: Real Data, Real Practice Preprocessing

19.4.4: Real Data, Real Practice Deep Learning Model Design

19.4.5: Real Data, Real Practice Train and Evaluate the Model

Select the Best Model for Your Dataset

19.5.1: Whose Model Is It Anyway?

19.5.2: Logistic Regression Vs. a Basic Neural Network

19.5.3: Support Vector Machine Vs. Deep Learning Model

19.5.4: Random Forest Vs. Deep Learning Model

Export and Import Trained Models

19.6.1: Checkpoints Are Not Just for Video Games

19.6.2: For Best Results, Please Save After Training

Application

Module 19 Challenge
May 16 | 100 pts | Submit

Module 19 Career Connection

Unit Assessment: Analytical Modeling and Big Data
May 16 | 100 pts | Submit

Will unlock Apr 22 at 1:01am

Module 20: Final Project

Prerequisites: Module 0: Getting Started

Complete All Items

Introduction to the Group Project and Project Overview

- 20.0.1: The End of the Beginning
- 20.0.2: Data Storytelling
- 20.0.3: Collaboration
- 20.0.4: Project Roadmap
- 20.0.5: Getting Ready for Virtual Class
- 20.0.6: Final Segment Rubric
- 20.0.7: Work with Your Team

First Segment: Sketch It Out

- 20.1.1: First Segment Overview
- 20.1.2: Build Your Foundation
- 20.1.3: First Segment Rubric
- 20.1.4: Team
- 20.1.5: Square Role
- 20.1.6: Triangle Role
- 20.1.7: Circle Role
- 20.1.8: X Role

Module 20 First Segment Project Deliverable
May 16 | 100 pts

Second Segment: Build the Pieces

20.2.1: Overview

20.2.2: Build the Pieces

20.2.3: Second Segment Rubric

20.2.4: Team

20.2.5: Square Role

20.2.6: Triangle Role

20.2.7: Circle Role

20.2.8: X Role

Module 20 Second Segment Project Deliverable
May 30 | 100 pts

Third Segment: Plug It In

20.3.1: Overview

20.3.2: Plug It In

20.3.3: Third Segment Rubric

20.3.4: Square Role

20.3.5: Triangle Role

20.3.6: Circle Role

20.3.6: Circle Role

20.3.7: X Role

Module 20 Third Segment Project Deliverable
Jun 6 | 100 pts

Fourth Segment: Put It All Together

20.4.1: Overview

20.4.2: Put It All Together

20.4.3: Fourth Segment Rubric

20.4.4: Square Role

20.4.5: Circle Role

20.4.6: Triangle Role

20.4.7: X Role

Module 20 Fourth Segment Project Deliverable
Jun 9 | 100 pts | Submit

Individual Self-Assessment

Module 20 Individual Self Assessment Deliverable
Jun 9 | 10 pts

Will unlock Apr 29 at 1:01am

Module 21: Course Wrap-Up

Prerequisites: Module 20: Final Project

Course Wrap-Up

21.0.1: Congratulations