Assignment - Advanced Python [Major]

Grading Parameters	Marks
Visualizations	10
Insights	10
Customization of Plots	10
Background Context	10
Data Visualization Skills	10
Total Marks	50

Use the **Honey Production In USA Dataset** and solve the following question by using the dataset

- To download the dataset click on the dataset name.

Topic: To visualize how honey production has changed over the years **(1998-2021)** in the **United States.**

Background:

In 2006, global concern was raised over the rapid decline in the honeybee population, an integral component of American honey agriculture. Large numbers of hives were lost to Colony Collapse Disorder, a phenomenon of disappearing worker bees causing the remaining hive colony to collapse. Speculation as to the cause of this disorder points to hive diseases and pesticides harming the pollinators, though no overall consensus has been reached. The U.S. used to locally produce over half the honey it consumes per year. Now, honey mostly comes from overseas, with 350 of the 400 million pounds of honey consumed every year originating from imports.
This dataset provides insight into honey production supply and demand in America from 1998 to 2021.

Objective:
To visualize how honey production has changed over the years **(1998-2021)** in the United States.

Key questions to be answered:

Q1) How has honey production **yield changed** from **1998 to 2021**?

Q2) Over time, what are the **major production** trends across the states?

Q3) Does the data show any trends in terms of the number of **honey-producing colonies** and **yield per colony** before **2006**, which was when concern over Colony Collapse Disorder spread nationwide?

Q4) Are there any **patterns** that can be observed between **total honey production** and the **value of production** every year?

Q5) How has the **value of production**, which in some sense could be tied to **demand**, changed every year?

Q6) Construct the related plots using **Seaborn** and **Matplot** apply customization and derive **insights** from the visualization.

Honey Production in USA Dataset:

- **state:** Various states of the U.S.

- **numcol:** Number of honey-producing colonies.
  Honey-producing colonies are the maximum number of colonies from which honey was taken during the year. It is possible to take honey from colonies that did not survive the entire year

- **yieldpercol:** Honey yield per colony. Unit is pounds

- **totalprod:** Total production (numcol x yieldpercol). Unit is pounds

- **stocks**: Refers to stocks held by producers. Unit is pounds

- **priceperlb:** Refers to an average price per pound based on expanded sales. The unit is dollars.

- **prodvalue:** Value of production (totalprod x priceperlb). The unit is dollars.

- **year:** Year of production

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Steps To Submit An Advanced Python Assignment.

Step 1: Save Your Work:

➔ In Jupyter Notebook, click "File" > "Save and Checkpoint" to save. Optionally, use "Save As" to rename the file.

Step 2: Organize Files (Optional):

➔ Create a new folder for better organization.

Step 3: Move Notebook:

➔ Drag your saved notebook into the new folder (if created).

Step 4: Zip the Folder:

➔ Right-click the folder, select "Compress" (macOS) or "Send to" > "Compressed (zipped) folder" (Windows).

Step 5: Create a New Word Document

1) Open Microsoft Word or any word processing software.

2) Create a new document and give it a suitable title, such as "**Advanced Python Assignment Submission - (Your Name)**"

Step 6: Add Screenshots of Inputs and Outputs for each question in the assignment:

1) Type the question number and description.

2) Take a screenshot of your Python code Input.

3) Paste the screenshot into the Word document.

4)Take a screenshot of the output code (result set).

5)Paste the screenshot of the output below the Input screenshot.

Step 7: Review Your Document

1) Review the document to ensure all questions, queries, and output screenshots are correctly arranged.

2) Double-check for any typos or formatting issues.

Step 8: Save Your Document

1) Click on the "**File**" menu in Word.

2) Select "**Save As**."

3) Choose a location on your computer where you want to save the document.

4) Enter a file name for the document and select "**Save**."

Step 9: Convert to PDF

Now, let's convert your Word document into a PDF file.

1) If you have Microsoft Word with a "Save As PDF" option:

- In the "**File**" menu, select "**Save As**."
- Choose a location to save the PDF file.
- In the "**Save as type**" dropdown, select "**PDF**."
- Click "**Save**."

2) If you don't have the "**Save As PDF**" option:

- Open your Word document.
- Click "**File**" > "**Print**."
- Choose a PDF printer or select "**Microsoft Print to PDF**."
- Click "**Print**" and choose a location to save the PDF.

Step 10: Upload and Submit

1) Visit your assignment submission platform depending on the submission method.

2) Locate the option to upload your assignment.

3) Upload the PDF file of your assignment and the jupyter file

Following these steps will ensure you create a well-organized submission of your Advanced Python Assignment.

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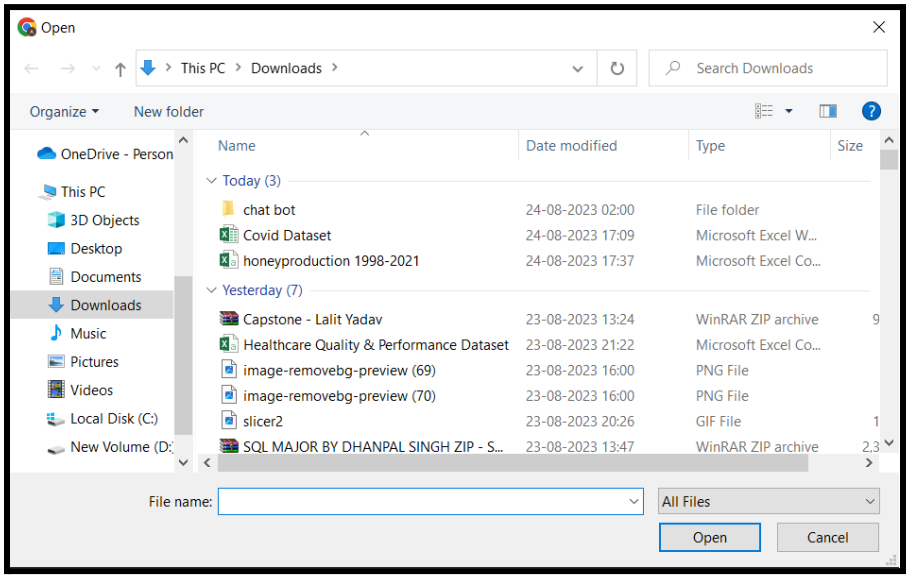
How To Zip Your File & Submit Assignments

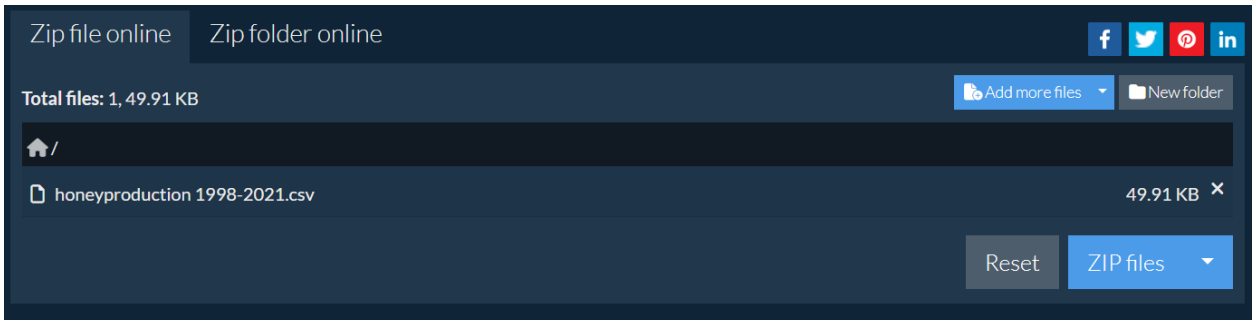
Step 1: Open the [Ezyzip Website] on your Web Browser

Step 2: Click on “Select files to archive”

Step 3: Select Your Assignment File From Its Location To Upload



Step 4: Once The Upload Is Done, Zip The file by clicking on “ZIP files”

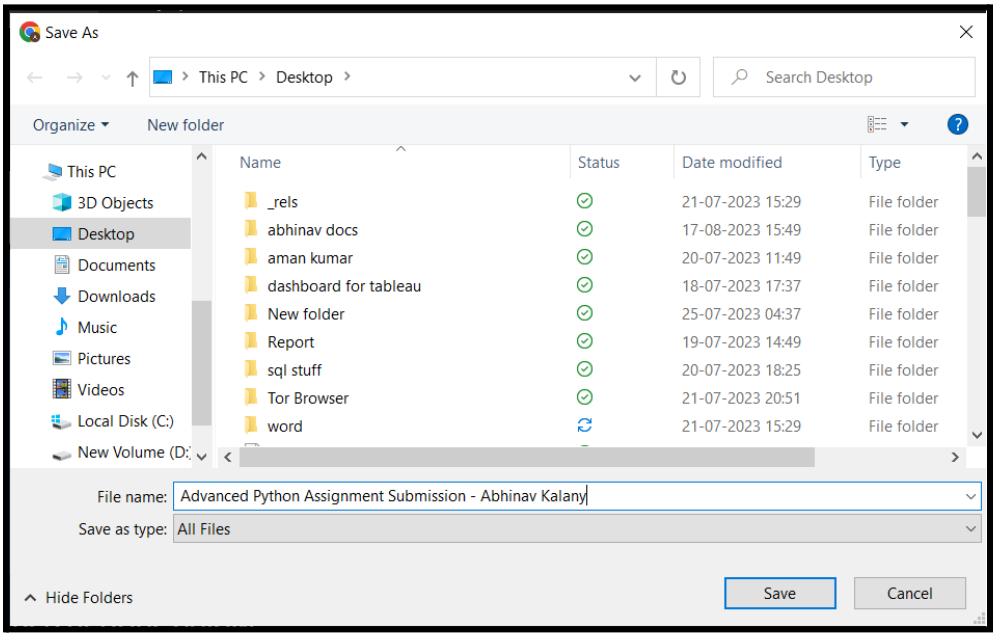


Step 5: Once The ZIP File Is Compressed Click on Save ZIP File

Step 6: Name This Zip File While Saving Into Your Local folder

➔ **Name Format:**

"**(Assignment name)Assignment Submission - (Your Name)**"



Step 7: Once Saved, Submit This ZIP FIle On Your Skillacademy Assignment Submission Portal