COSC3506 USER DOCUMENTATION MUHAMMAD JAMIL

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1. Introduction

Welcome to the **Student Grade Tracker**! This application allows teachers to manage and track student academic performance efficiently. It is designed to run on **Google Colab** and features a clean, user-friendly interface powered by **Gradio**, with real-time GPA calculation, chart visualization, and CSV exporting.

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2. Getting Started

To begin using the Student Grade Tracker:

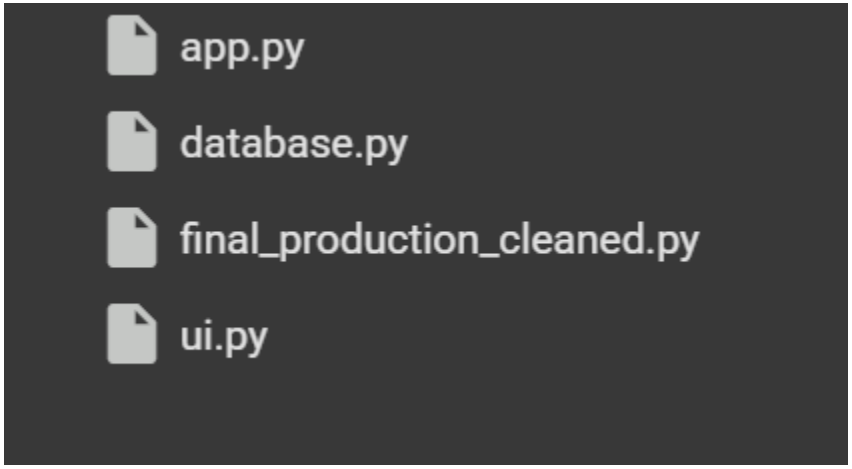
1. **Open the Colab notebook** provided with the project.

   https://colab.research.google.com/drive/1xJERZM-ttzh8GopbLvzbUwFS2iLGf2Dd#scrollTo=4fPKdc7Sf3TU

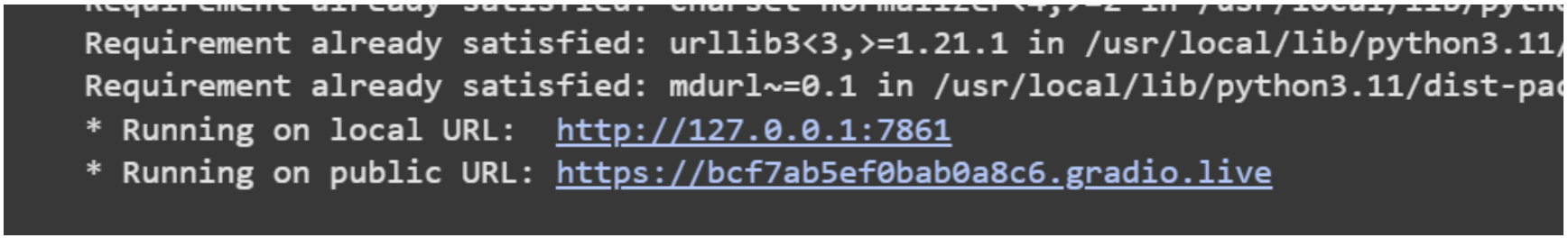
2. Run the cells to initialize the database and launch the Gradio UI.

   ```
   [ ]  !pip install gradio flask matplotlib pandas
   ```

   DOWNLOAD AND UPLOAD THESE FILES TO COLLAB NOTEBOOK(PROVIDED SEPRATELY)



3. A shareable public link (via Gradio) will appear for interacting with the app.



No installation is required. The software runs entirely in the cloud.

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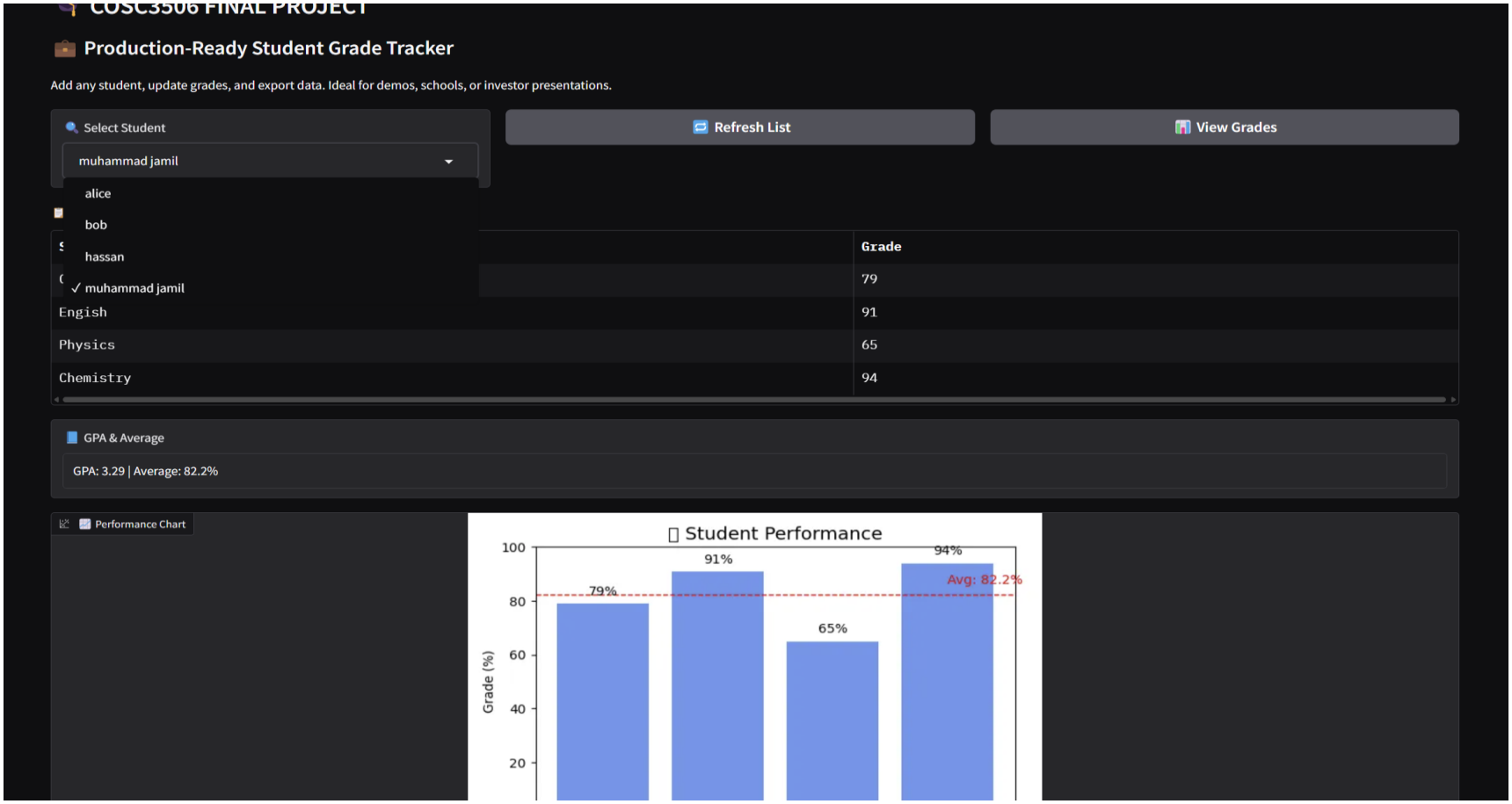
3. Application Interface Overview

The app consists of the following sections:

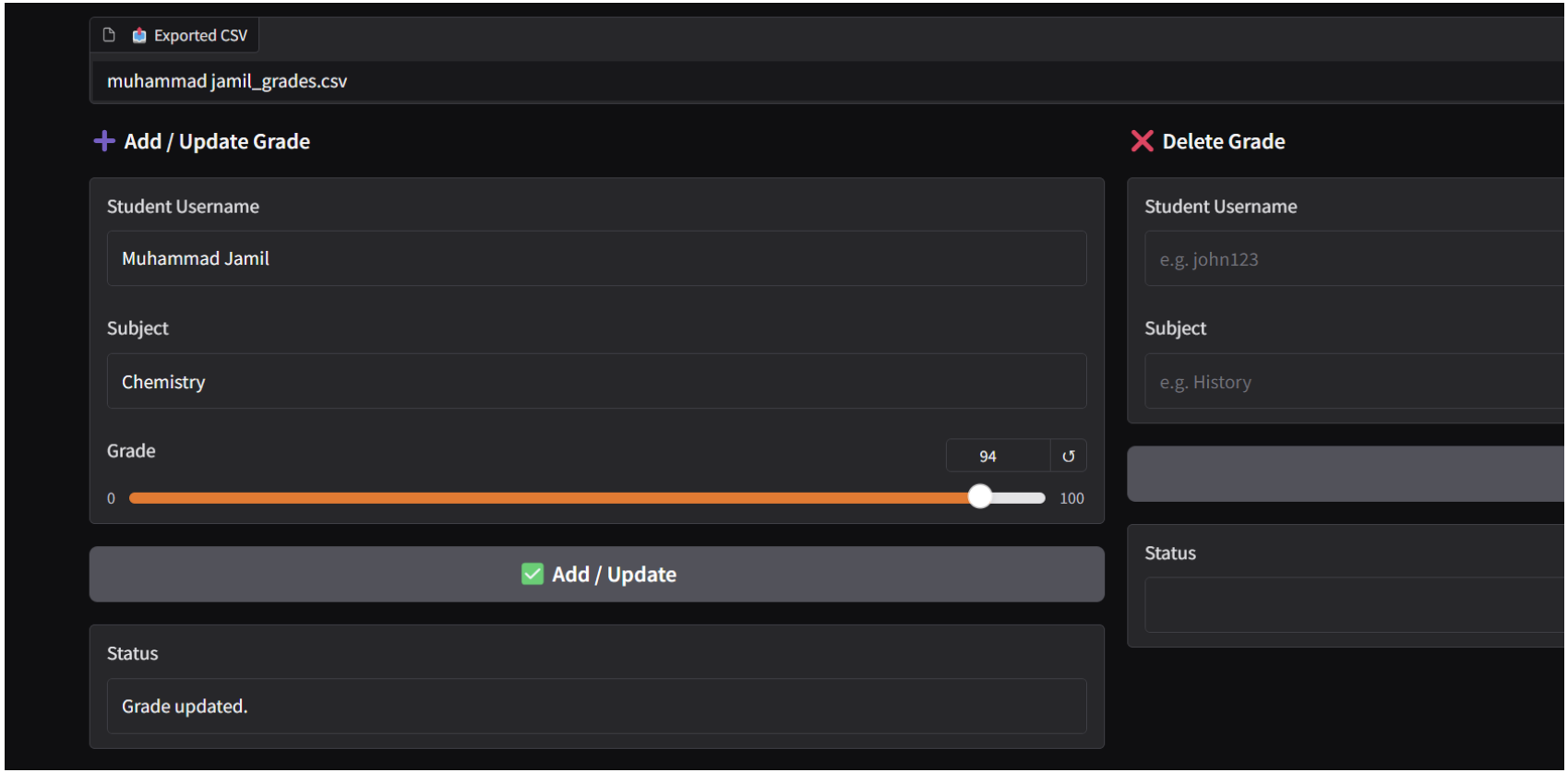
3.1 View Student Grades

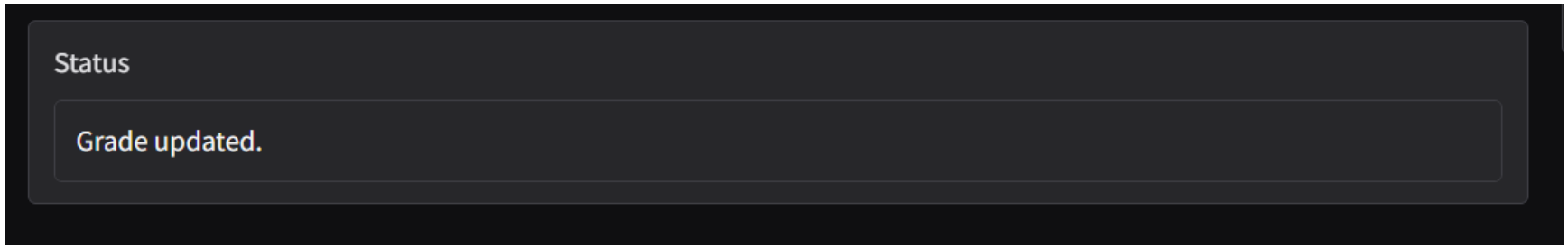
- Select a student from the dropdown.
- Click **"View Grades"**.
- You will see:
  - A table listing subject-wise grades.
  - A calculated **GPA** and **percentage average**.
  - A bar graph showing grade distribution.


COSC3506 FINAL PROJECT
Production-Ready Student Grade Tracker
Add any student, update grades, and export data. Ideal for demos, schools, or investor presentations.
Select Student
muhammad jamil
alice
bob
hassan
✓ muhammad jamil
Refresh List
View Grades
Grade
79
English
91
Physics
65
Chemistry
94
GPA & Average
GPA: 3.29 | Average: 82.2%
Performance Chart
Student Performance
Grade (%)
100
80
60
40
20
79%
91%
65%
94%
Avg: 82.2%

3.2 Add / Update Grade (Teacher/Admin Role)

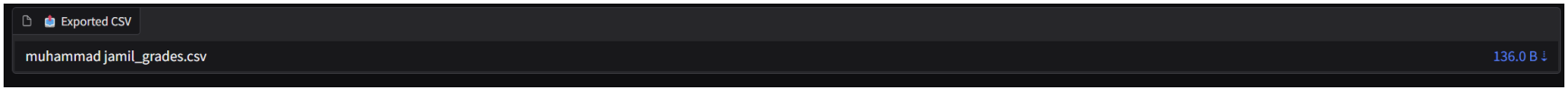
- Enter **Student Username** (e.g., alice, bob, sara).
- Enter or select **Subject**.
- Use the **slider** to input the grade (0 to 100).
- Click **"Add / Update"** to store the grade.
- A success or error message will confirm the operation.

- 

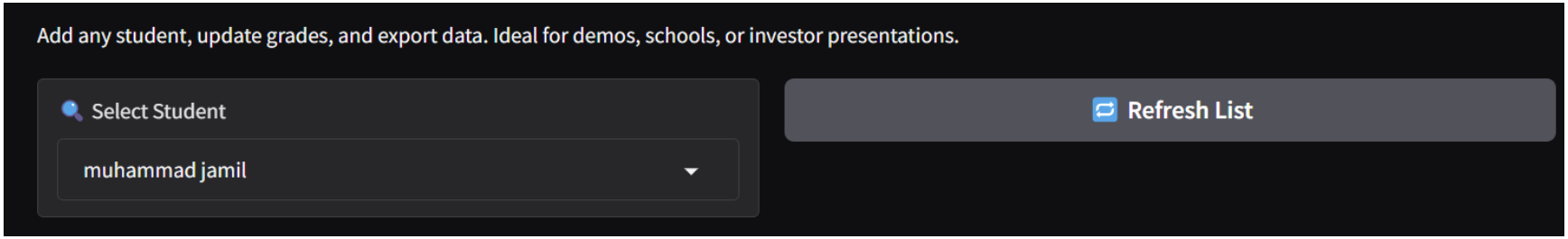
- 

3.3 Export Grades

- After viewing a student's grades, click the **Download CSV** button.
- A .csv file will be generated with all grade data.



3.4 Refresh Grades

- Use the **Refresh** button on the student dashboard to update displayed grades in real time.
- 

4. Features Summary

Feature	Description
GPA Calculation	**GPA is computed from percentage grades and displayed in real time.**

Add/Update/Delete Grades	**Teachers can manage grade entries dynamically.**
CSV Export	**Grade data can be exported to spreadsheets for reporting.**
Chart Visualization	**Automatically generated bar chart for each student showing subject grades.**
Dark Mode UI	**Gradio blocks are styled for accessibility and night-friendly visuals.**

5. FAQ / Help

Q: What if I enter a new student name?
A: The system automatically creates a record for the new student.

Q: Can I enter new subjects?
A: Yes, just type in the subject name while adding a grade.

Q: What happens if I re-enter an existing subject and student?
A: The grade will be updated.

Q: How fast does the app respond?
A: All operations (add/view/export) are executed under 2 seconds (non-functional goal).

Q: Do I need to log in?
A: No login is required. This is a demo-ready, public access app.

6. Technical Requirements

- **Platform:** Google Colab (free tier)
- **Languages:** Python
- **Frameworks:** Flask (backend), Gradio (frontend), SQLite, Pandas, Matplotlib
- **No installation required.**