**Objective:**

To develop a dynamic, interactive dashboard for GUVI to monitor and assess student readiness for placements using real-time data from a MySQL (TiDB Cloud) database.

**Step-by-Step Project Workflow:**

**Database Design and Creation**

1. The project begins with creating a relational database schema consisting of 4 key tables:
   * **Students**: Stores student details (name, email, batch, graduation year, etc.).
   * **Placement**: Tracks mock interview scores, number of interviews cleared, internship count, placement status, and package.
   * **Programming**: Contains technical skill metrics like problems solved, mini projects, assessments, etc.
   * **SoftSkills**: Records soft skill parameters and calculates the average score.
2. All tables are linked using student\_id as a foreign key.
3. Database schema was executed in a Jupyter Notebook using OOP (Placement\_Eligibility\_App\_final\_code.ipynb).

**Data Generation Logic:**

* The database was created first, followed by data population using Python.
* Faker was used to generate realistic names, emails, and cities.
* Random was used to populate scores and counts conditionally.
* The placement status (Placed, Ready, Not Ready) was assigned first. Based on this assigned status, other values such as mock scores, soft skill scores, internships, and programming metrics were generated logically.
* For example, "Placed" students are given higher mock scores and soft skill rating
* This makes sure the consistency and realistic relationships across the dataset
* The soft skill average (soft\_skill\_avg) was computed directly within the SoftSkills table while inserting records ensuring the average reflects the six soft skill parameters for each student.

**SQL Table Upload:**

1. After generating data, all CREATE TABLE and INSERT INTO statements were executed via Python code using mysql-connector-python.
2. Data was uploaded to a TiDB Cloud-hosted MySQL database.

**Streamlit App:**

**Tabs:**

* Main Dashboard – Visualizes key metrics and Placement trends
* Eligibility Filter – Filter and displays students who meet selected criteria

**Features Implemented:**

* Main Dashboard:
  + Total students
  + Total companies
  + Average Placement Package
  + Pie chart of Placement status
  + Stacked bar of placement status by batch
  + Programming language popularity bar chart
* Eligibility Filter:
* Filter students based on: Soft skill average, Problems solved, Mini projects completed, Assessments completed
* It displays eligible students

**Business Insights (from CaseStudy.sql):**

**The SQL file includes 10 real-time insights such as:**

1. **Which course has the highest student enrolment?**

**Insight:** The course AI-S-WE-N-B07 has the highest enrolment with 38 students.

1. **Which course batches have the highest average programming project score?**

**Insights:** The course batch AI-S-WE-N-B05 has the highest average programming project score of 79.43, followed by DS-S-WE-N-B03 (79.31) and FSD-S-WD-N-B10 (77.91). These batches demonstrate strong programming performance overall.

1. **What are the top courses by total certifications earned?**

**Insights:** The course batch AI-S-WE-N-B07 had the highest total certifications earned with 65, suggesting active participation in extra learning modules.

1. **Which course batches have the highest number of placed students?**

**Insights:** The batch FSD-S-WD-N-B12 had the highest number of placed students (16), followed by FSD-S-WD-N-B10 (15) and AI-S-WE-N-B07 (14), indicating strong placement readiness in these batches.

1. **How are students distributed across different placement statuses?**

**Insights:** Out of 500 students, 170 are 'Placed', 152 as 'Ready', and 178 as 'Not Ready'. This indicates that while a good number of students are nearing placement readiness, a significant portion still requires support and intervention to become placement eligible.

1. **Who are the top 5 ‘Ready’ students with the highest mock interview scores?**

**Insights:** The top 5 ‘Ready’ students based on mock interview scores are Vasatika More, Kabir Sachar, Ijaya Talwar, Hitesh Sinha, and Abhiram Rajan. These candidates have demonstrated strong interview preparedness and are ideal for upcoming placement opportunities.

1. **Among students who cleared more than 2 interview rounds, how many were placed or ready for placement?**

**Insights:** A total of 170 students were placed and 48 students are ready for placement among those who cleared more than two interview rounds.  
This indicates that clearing multiple interviews rounds significantly increases a student's chances of being placed.

1. **Which programming language is most popular among students based on enrolment?**

**Insights:** Python is the top choice among students with 94 learners, followed by R and Java, showing strong interest in popular programming languages.

1. **What is the distribution of students by average soft skill score?**

**Insights:** The majority of students have Medium (152) or Low (178) soft skill scores, while only 170 students fall into the High category.

1. **What is the average programming project score for each placement status?**

**Insights:** Students who are Placed have the highest average project score of 92.30, followed by Ready students at 77.14, while Not Ready students have the lowest at 54.24, highlighting a strong link between project performance and placement status.

1. **What is the placement status distribution by gender?**

**Insights:** Female students have an even spread across all placement statuses, while more male students are not ready for placement compared to those who are ready.

**Technologies Used:**

* **Python 3.13**
* **Streamlit**
* **MySQL (TiDB Cloud)**
* **Faker & Random**
* **Plotly Express**
* **Pandas**
* **MySQL Connector**