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<b>Lab Task:</b>	02
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<b>Course Code:</b>	CL2005
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<b>Course Title:</b>	Database Systems - Lab
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<b>Semester:</b>	Spring 2026
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## Guidelines

- Please review the lab manual before starting the task to ensure you fully understand the requirements.
- You may use **only the concepts covered in the lab manual** to complete this task.
- Your submission must be a **single PDF file** that includes:
  - The source code (in plain text)
  - Screenshots of the corresponding outputs
- Name your file using the following format: **rollno\_name\_tasknumber.pdf**  
**Example:** *24p-1234\_ozair\_labtask02.pdf*
- Unethical use of AI tools will result in a **deduction of 5 marks**.
- Late submissions will incur a penalty of **-1 mark per day**.

## Tasks

You are provided with a database file named **tech\_servey.db**, which contains a simplified, real-world subset of the **Stack Overflow Developer Survey** dataset.

Open the given database in SQLite and perform **all the specified database operations** on the given dataset.

### Part 1: ALTER TABLE

1. Add a column **education\_level**.
2. Rename table **developers** to **dev\_survey**.
3. Rename column **salary\_usd** to **annual\_salary**.
4. Drop column **education\_level**.

### Part 2: INSERT

1. Insert **all columns** for one record.



2. Insert **specific columns only** for one record.
3. Insert **3 rows in one statement**.

## Part 3: UPDATE

4. Update salary of developers from Pakistan by +10%.
5. Update framework to **NULL** where database\_used is **NULL**.
6. Change the primary language of dev\_id = 5 to **Python**.

## Part 4: DELETE

7. Delete developers with experience < 2 years.
8. Delete developers whose salary is **NULL**.

## Part 5: SELECT

1. Display all developer records.
2. Display only **country**, **primary\_language**, **annual\_salary**.
3. List developers earning more than 50,000 USD.
4. List developers with experience between 3 and 8 years.
5. Show developers from Pakistan earning less than 20,000 USD.
6. Show developers who use Python **and** PostgreSQL.
7. Show developers from USA **or** Germany earning above 60,000 USD.
8. Show developers who do **not** use JavaScript.
9. Show developers with experience between 5 and 10 years.



10. Show developers whose primary language is either one of Python, Java, C++, PHP.
11. Show developers whose framework starts with S.
12. Show developers whose database contains the word SQL.
13. Show the top 5 highest-paid developers.
14. Show the lowest-paid developers sorted by salary.
15. Show the only developer with the most experience.
16. Show developers who **use both primary and secondary languages**.
17. Show developers where salary is not provided.
18. Rank developers by salary within each country (sort based on two columns).