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**Lab Task:** 03

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**Course Code:** CL2005

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**Course Title:** Database Systems - Lab

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**Semester:** 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\_labtasknumber.pdf**  
**Example:** *24p-1234\_ozair\_labtask03.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\_survey.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.

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



8. Show developers with experience of 5 to 10 years.
9. Show developers whose primary language is either one of **Python, Java, C++, PHP**.
10. Show developers whose framework name starts with the letter **S**.
11. Show developers whose database contains the word **SQL**.
12. Show the top 5 highest-paid developers.
13. Show the lowest-paid developers sorted by salary.
14. Show the only developer with the most experience.
15. Show the developer with the **4th highest** salary.
16. Show developers who **use both primary and secondary languages**.
17. Show developers where salary information is not provided.
18. For each country (ordered alphabetically), rank developers from highest to lowest salary.
19. Display the **total number of unique** primary programming languages used by all developers.
20. Display developers ranked **6th to 10th** by salary, where rank 1 corresponds to the highest salary overall.
21. Display the average annual salary of developers whose primary programming language is **Java** and whose database is **Oracle**.
22. Display a new calculated column named **bonus**, where the bonus is computed for each developer as:

```
bonus = annual_salary + (1000 × experience_years)
```