🧪 Lab 1 – Tasks 4 to 6 Summary

✅ Task 4: Join Data from Two Tables

Goal:
Create a report that combines loan details with geographic region data.

Steps:

1. Identify the relevant tables:
   - `loan` table contains `loan_id` and `loan_amount`
   - `state_region` table contains `region`
2. Use SQL to join the tables:

SQL
SELECT
lo.loan_id,
lo.loan_amount,
sr.region
FROM fintech.loan lo
INNER JOIN fintech.state_region sr
ON lo.state = sr.state;

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Key Questions & Answers:

- **Which SQL keyword and column would you use to connect the loan and state_region tables?**
  ✅ `INNER JOIN` and `state`
- **Which query produces the correct report?**
  ✅ **Query B** (joins on `state`, not `region`)

✅ Task 5: Create a Table Using CTAS

Goal:
Store the joined data in a new table for further analysis and sharing via Google Sheets.

Steps:

1. Use a **CTAS (CREATE TABLE AS SELECT)** statement:

SQL

```
CREATE OR REPLACE TABLE fintech.loan_with_region AS
SELECT
lo.loan_id,
lo.loan_amount,
sr.region
FROM fintech.loan lo
INNER JOIN fintech.state_region sr
ON lo.state = sr.state;
```

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2. Locate the new table in the `fintech` dataset.
3. Connect the table to **Google Sheets** using Connected Sheets.

Key Questions & Answers:

- **What dataset will this new table be part of?**
  ✅ `fintech`
- **What is the name of the new table that was created?**
  ✅ `loan_with_region`

✅ Task 6: Work with Nested Data

Goal:
Extract the purpose of each loan from a nested column in the `loan` table.

Steps:

1. In the `loan` table, locate the `application` column in the **Schema tab**.
   o This is a **record (struct)** type containing nested fields.
2. Use dot notation to access the nested `purpose` field:

SQL
```
SELECT loan_id, application.purpose
FROM fintech.loan;
```

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Key Questions & Answers:

- **What is the data type of the `application` column and its nested fields?**
  ✅ `record`; includes `type`, `purpose`, `description`, and `notes`
- **What change makes the query work to extract loan purposes?**
  ✅ Change to `SELECT loan_id, application.purpose`