Practical 1 (Question 2)

Aim

To populate the previously created Authors and Books tables with meaningful data using Data Manipulation Language (DML) commands, while adhering to the foreign key constraint.

Objective

- To insert at least three sample records into the Authors table.
- To insert at least three sample records into the Books table.
- To ensure that the author_id in the Books table references a valid author_id that exists in the Authors table.

Theory

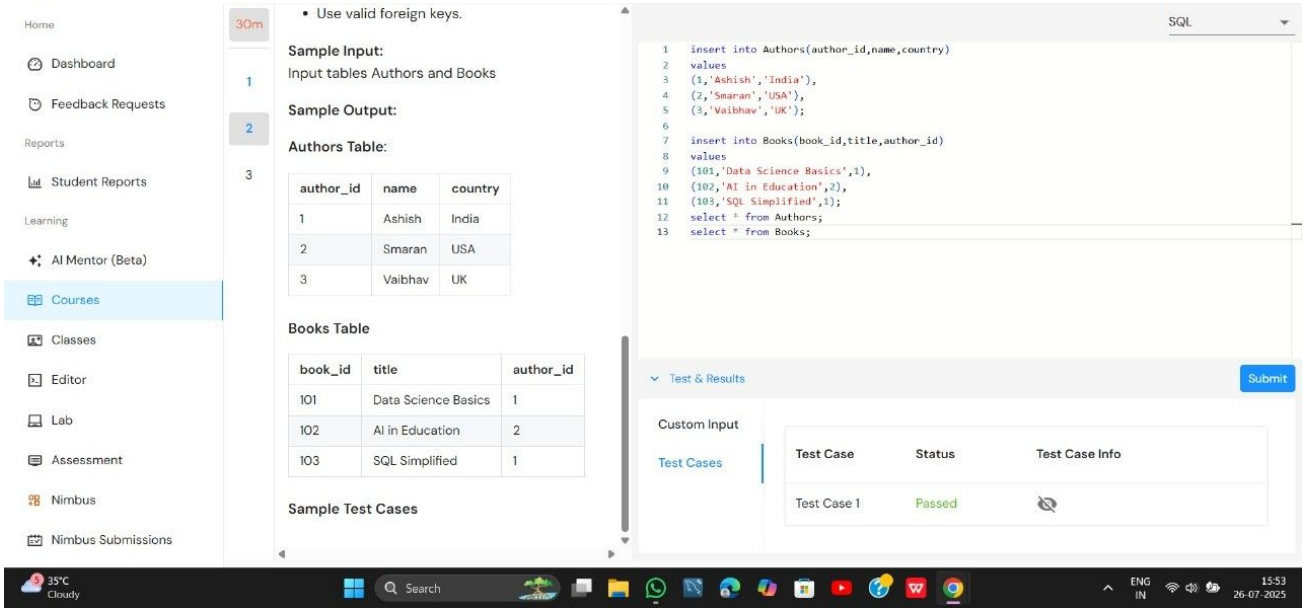
Data Manipulation Language (DML) commands are used to manage data within database objects. The INSERT INTO command is used to add new records to a table. When inserting data into a table with a foreign key, it is crucial to ensure that the value being inserted into the foreign key column already exists in the referenced primary key column of the parent table. This is known as **referential integrity**, a core principle of relational databases.

Procedure

1. **Ensure** the Authors and Books tables have been successfully created.
2. **Execute** the following DML commands to insert records into the Authors table:
   INSERT INTO Authors (author_id, name, country) VALUES (1, 'Ashish', 'India');
   INSERT INTO Authors (author_id, name, country) VALUES (2, 'Smaran', 'USA');
   INSERT INTO Authors (author_id, name, country) VALUES (3, 'Vaibhav', 'UK');
3. **Execute** the following DML commands to insert records into the Books table, referencing the author_ids from the Authors table:
   INSERT INTO Books (book_id, title, author_id) VALUES (101, 'Data Science Basics', 1);
   INSERT INTO Books (book_id, title, author_id) VALUES (102, 'AI in Education', 2);
   INSERT INTO Books (book_id, title, author_id) VALUES (103, 'SQL Simplified', 1);

4. **Verify** the data insertion by performing a SELECT * FROM query on both tables.

Result



Learning Outcomes

1. **DML Commands:** The ability to use INSERT INTO to add data to a database.
2. **Data Integrity:** A practical understanding of how to respect and enforce referential integrity rules.
3. **Data Population: Experience in populating a database with sample data for testing and analysis.**