

2024 CpSc Q12

Section: Database Design and Development

Topic: SQL Constraints — Composite Keys and Foreign Keys

Question Summary

The Score table has fields playerId, tournamentID and score. The following SQL tries to insert a new score without a tournamentID:

```
INSERT INTO Score(playerID, score) VALUES("P1815", 550);
```

Explain why this causes the statement to fail.

Worked Solution

Worked Solution

From the schema, Score uses playerId and tournamentID as key fields (both marked with '*'), and each is also a foreign key pointing to the corresponding rows in Player and Tournament. Because key fields are required (NOT NULL) and identify a unique score per player-tournament, omitting tournamentID means:

- the database cannot tell which tournament the score belongs to (key would be incomplete); and
- the NOT NULL / foreign-key constraint on tournamentID is violated (no valid referenced tournament).

Therefore the INSERT fails due to constraint violations on a compulsory key/foreign-key column.

Final Answer

Final Answer

The insert fails because tournamentID is a required key (and foreign key) in Score. Leaving it out tries to store NULL for a NOT NULL key and gives no referenced tournament, so the database rejects the row.

Revision Tips

- Composite primary keys identify a row using more than one column (here: playerId + tournamentID).
- Primary-key columns are NOT NULL; foreign-key columns must match an existing referenced row.
- When inserting, you must supply every NOT NULL column unless a default is defined.

Exam Alignment

Exam Alignment

Matches the 2024 MI: candidates should recognise that tournamentID is a required (key/foreign-key) field in Score, so omitting it violates constraints and the SQL fails.