

Assignment - 02

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Section: 04

Answer to Question- 1

- (i) if all attributes contains indivisible values & without any repeating groups. The relation already satisfies 1NF cause (Car, Salesperson) is atomic with no multi-valued. So the relation is 1NF.
- (ii) This relation is not 2NF because attribute Date-sold is functionally dependent on attribute Salesperson which is a primary key. So it is 1NF but has non-key attribute (date-sold) that is partially dependent on key (Salesperson)

∴ Decomposition to 2NF:

CAR-SALE1 (Car, Salesperson, Commission, Discount-amt)

CAR-SALE2 (Salesperson, Date-sold)

- (iii) This relation is in 3NF. Being in 2NF we don't have a non-key attribute transitive dependencies. Date-sold attribute is functionally dependent on Salesperson. So no non-key attribute depends on Date-sold.

Question - 2

(i) This is in 1NF relation as all attributes contain values and no repeating groups. The primary Key is (Tournament Acronym, Team ID, Tournament-ID)

(ii) the above relation is not in 2NF. So decomposing it into 2NF:

- tournament-info (Tournament Acronym, Tournament-ID, Tournament-title, tournament-Matches, Base-Amount, Final-Amount - Tournament-Year, Tournament-Sponsor, Tournament-Logo)
- team-info (Team-ID, Team-Name, Team-Lead)

(iii) relation is in 3NF if its on 2NF without transitive dependences.

Decomposition 3F:

- Tournament-info (Tournament Acronym, Tournament-ID, Tournament-title, tournament-Matches, Base-amount, Final-Amount, Tournament-Year, Tournament-Sponsor, Tournament-Logo)
- Team-info (Team-ID, Team-Name, Team-Lead)
- Tournament-Title-info (Tournament-ID, Tournament-Title, Tournament-Matches)