Database Management System

FUNCTIONAL DEPENDENCY

Homework 4

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PROJECT - CULTURAL FEST

Relations -

- **Events** (eno (primary key)-X, ename-Y, ehead-Z, cashprize-U)
    - The ename, ehead and cashprize depend on eno. This is the functional dependency of this table.
      X-> Y,Z,U
      Y-> X,Z,U
    - Here, eno and ename are the candidate keys as they can have no duplicate values.
    - This relation is in second and third normal form as the non-key attributes are not dependent on a subset of key attributes. There is no partial or transitive dependency.

- **Location** (lno (primary key)-X, lname-Y, ename-Z, duration-U, capacity-V)
    - lno, lname and ename can be the candidate keys for this table as they take not null unique values and each location hosts one event only.
    - The functional dependency of this table -
      X-> Y,Z,U,V
      Y-> X,Z,U,V
      This is the table in second normal form.
    - To convert it to third normal form, we can break it into two tables -
        - ldetails(lno-A, lname-B,capacity-C)
            - The candidate keys of this table are lno and lname.
            - The functional dependency of this table
              A->B,C and B-> A,C
        - levent(lname-A, ename-B, duration-C)

        - The candidate keys of this table are lname and ename.
        - The functional dependency of this table
          A->B,C and B-> A,C

- **Sponsorship -** (sno (primary key)-X, sname-Y, scompany-Z, scontact-U, ename-V, amount-W)
    - The sname, scompany, scontact, ename and amount depend on sno. This is the functional dependency of this table.
      X-> Y,Z,U,V,W
    - Here, sno is the candidate key as it can have no duplicate values.
    - This relation is in second and third normal form as the non-key attributes are not dependent on a subset of key attributes. There is no partial or transitive dependency.

- **Registrations -** (rno (primary key)-X, rname-Y, ename-Z, contact-U, age-V, regfee-Z)
    - rno can be the candidate key for this table as it takes not null unique values.
    - The functional dependency of this table -
      X-> Y,Z,U,V,Z
      This is the table in second normal form.
    - To convert it to third normal form, we can break it into two tables -
        - rdetails(rno-A, rname-B,contact-C,age-D)
            - The candidate key of this table is rno.
            - The functional dependency of this table
              A->B,C,D
        - revent(rno-A, ename-B, regfee-C)
            - The candidate key of this table is rno.
            - The functional dependency of this table
              A->B,C and B-> C

- **Members -** (mno (primary key)-X, mname-Y, ename-Z, mcontact-U, role-V)
    - mno can be the candidate key for this table as it takes not null unique values.
    - The functional dependency of this table -

X-> Y,Z,U,V

- This relation is in second and third normal form as the non-key attributes are not dependent on a subset of key attributes. There is no partial or transitive dependency.