Data And Applications

Assignment - 1

Group Name : SUPER MARIO BROS
Group No : 8

Introduction:

Our assigned miniworld is UNICON19.It is a Festival of unicyclists which brings riders together from different parts of the world.

We can find all the information about contests held,events and registration all that in the UNICON19 website which needs a huge database.Now ,our task is to come up with a data requirements document for this miniworld.

Purpose:

As UNICON19 is an international organizing team to conduct unicycle convention.So it need to collect the information of participants from different parts of the world to participate in huge events conducted by UNICON19 ,So we need a huge database which provides detailed information about the events,participants and to maintain social interface between the users and organizing team.

Users:

As UNICON is a huge database network which connects the different systems ,It has many types of users,They are:

1. Directors
2. Committee members
3. Volunteers
4. Event Managers

Applications :

1. Database helps in having clear information about the information about all the related stuff as **Unicon19** conducts events every year.It acts as an excellent social interface between Organisation and the people by storing the information in it.
2. We can insert ,delete and update the data into the database system and we can keep track of data every time and It backs up the data periodically.
3. Data is ensured to be safe, even if the system crashes.
4. Database connects all the users in the miniworld indirectly,because the data modified by one user can be accessed by another user.

Database Requirements:

Entities:

- ★ Competitors:
  - Attributes:
    - Name

        - Age
        - ID
- Non-competitors(Audience):
    - Attributes:
        - Name
        - Email-ID
- Volunteer:
    - Attributes:
        - Name
        - Age
        - ID
        - Job
        - Date of shift
- Event Managers:
    - Attributes:
        - Name
        - Age
        - Qualification
- Director:
    - Attributes:
        - Name
        - Age
        - Qualifications
        - ID
        - Country

- Committee member:
    - Attributes:
        - Name
        - Qualification
        - Age
- Judge:
    - Attributes:
        - Name
        - Age
        - Qualifications
        - Country
- Food:
    - Attributes:
        - Price
        - Type
        - Order-ID
- Game:
    - Attributes:
        - Name
        - Place
        - Levels
- Director Details:
    - Attributes:
        - Spouse

- Father
- Experience Years

Weak Entities:

- ★ Food
- ★ Director Details

Relation-ships :

- **Watches:**
  - Degree: 2
  - Entities in the relationship are Non-competitors and Game.
  - Non-competitors watches the Game
  - n:k ratio (n non-competitors watch k games conducted)
- **Win:**
  - Degree: 2
  - Entities in this relationship are competitor and game
  - Competitor wins the game
  - 1:1 ratio (only 1 person wins the game).
- **Control:**
  - Degree: 2
  - Entities in this relationship are Director and committee
  - Director controls the committee
  - k:n ratio (k DIrectors controls n committee members)

n>=3 Relationships are as follows:

- **Judges:**
  - Degree: 3
  - The entities are Judges, Competitors,Game
  - Here in this relation" Judges judge the competitors ,Judges judge for the game and Competitors are judged in the game".It is a ternary relation.
  - k:n ratio (k judges judges the n competitors).
  - k:1 ratio (k judges judge for 1 Game).
  - n:1 ratio (n competitors judged in 1 game)
- **Instructs:**
  - Degree: 3
  - The entities are Event managers, Committee members,Volunteers
    Event managers instruct volunteers,committee members instruct volunteers,committee members instruct event managers.It is a ternary relationship.
  - k:n (k event managers instruct n volunteers).
  - k:n (k committee members instruct n volunteers)
  - k: p (k committee members instruct p event managers)

Functional Requirements:

If a participant wants to register for the events conducted by UNICON19.He needs to register for that game/event conducted, by registering through the website.Database stores the information of the participant every time whenever he queries a request.The functional requirements for that are as follows.

Modifications:

- **Insert :** This is the query to insert the data into the database.
  Example: whenever a participant wants to register for the game he fills in his personal information about him.
- **Delete :** This query enables users to delete the records from the database.
  Example: if a participant wants to unregister for the game, so when he unregisters all his information needs to be deleted from the database.
- **Update:** This query enables users to update the information on the database.
  Example: Update the country of Director Nithil to the USA.

Retrievals:

- **Selection :**
  This query enables you to select particular data from the database.
  Example: "Select all participants from the Ukraine".

- **Projection :**
  This query enables users to search the database with a particular attribute.
  Example:Get all the events conducted in Ukraine by calling Ukraine events.

- **Aggregate:**
  This Query which returns the data by processing the query .
  Example : The top scorer of all the levels of the games conducted, by summing the scores and seeing the topscorer.

- **Search:**
  This query enables us to search for the entities. If we type some part of the entity and then it will search for the remaining parts of the entity.
  Example: The name of participants whose name ends with "singh"

- **Analysis:**
  This query is a report that conveys some relation between two entities.
  Example: Number of Judges with a qualification of double degree whose country is same as that of most frequent countries of all directors.