

Unicon Requirements Document Assignment 1

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Members:

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Introduction

The miniworld assigned is Unicon19 <http://www.unicon19.kr/en/> (the 19th World Unicycling Championship), held in South Korea. Unicon19 is the premier Unicycle competition and community meet up in the world. There are international Contestants and members who meet at Ansan to discuss, share and contest in various unicycling endeavours.

Purpose

To store safely and reliably all the information regarding the events, participation, and organising committee of Unicon19.

To organise all the data in an intuitive and logical manner so as to allow for easy and quick access.

To regulate access to this information only to users that require and are allowed to see these records.

Users

The organising committee members, volunteers, judges, and contestants have access to various views of the database:

Applications

This database can be used:

- By the contestants to view their upcoming matches
- By the organising committee to keep track of all the events
- By the volunteers to check the schedule of events and the contestant in each event
- By OC members and volunteers to list the judges who will judge each event
- By all users to view declared results

Database Requirements

Entity Types

1. Contestant
 - a. ChestNumber (Primary Key)
 - i. Unique
 - ii. 4-digit integer
 - iii. Not null
 - b. Name
 - i. Not null
 - ii. Max 50 character varchar
 - c. DateOfBirth
 - i. Not Null
 - ii. Date type
 - iii. Before 30th June 2018
 - d. Age (Derived from DateOfBirth)
 - i. Integer
 - ii. Non-negative
 - e. PhoneNumber
 - i. Not Null
 - ii. 10-digit integer
2. Events
 - a. EventName
 - i. Not Null
 - ii. Max 100 character varchar
 - b. Category
 - i. Max 15 character varchar
 - c. Code (Primary Key)
 - i. Not Null
 - ii. Max 10 character varchar
 - d. Venue
 - i. Max 100 Character varchar
 - e. DateTime
 - i. Not Null
 - ii. Between 29th July and 6th October 2018 (inclusive)
 - f. HasResult
 - i. Not Null
 - ii. Boolean

- g. Completed
 - i. Not Null
 - ii. Boolean
- 3. Volunteer
 - a. Name
 - i. Not Null
 - ii. Max 50 character varchar
 - b. ID (Primary Key)
 - i. Unique
 - ii. Not Null
 - iii. Integer
 - c. DateOfBirth
 - i. Not Null
 - ii. Date type
 - iii. Before 30th June 2018
 - d. Age (Derived from DateOfBirth)
 - i. Not Null
 - ii. Integer
 - iii. Non-negative
 - e. Hours
 - i. Not Null
 - ii. Default: 0
 - iii. Non-negative Integer
- 4. Team
 - a. TeamName(Primary Key)
 - i. Not Null
 - ii. Max 50 character varchar

Weak Entities

- 1. IndResult
 - a. ContestantCode
 - i. Not Null
 - ii. 4-digit Integer
 - b. Score
 - i. Nonnegative Integer
 - c. Time
 - i. Float
 - d. Status
 - i. Max 50 character varchar
- 2. TeamResult
 - a. TeamName
 - i. Not Null
 - ii. 4-digit Integer
 - b. Score
 - i. Nonnegative Integer
 - c. Time
 - i. Float
 - d. Status
 - i. Max 50 character varchar
- 3. Judges
 - a. Name
 - i. Max 50 characters varchar
 - ii. Not Null

Relationships

- 1. ParticipatingIn
 - a. Degree: Binary
 - b. Entity Types: Contestant, Event
 - c. Cardinality Ratio: M:N
- 2. IndLeaderboard
 - a. Degree: Binary
 - b. Entity Types: IndResult, Event
 - c. Cardinality Ratio: N:1
 - d. Identifying relationship for Result type (with partial key ContestantCode)
- 3. TeamLeaderboard
 - a. Degree: Binary
 - b. Entity Types: TeamResult, Event
 - c. Cardinality Ratio: N:1
 - d. Identifying relationship for Result type (with partial key TeamName)
- 4. VolunteeringFor
 - a. Degree: Binary
 - b. Entity Types: Volunteer, Event
 - c. Cardinality Ratio: N:1
- 5. Judging

- a. Degree: Binary
- b. Entity Types: Judges, Events
- c. Cardinality Ratio: M:N
- d. Identifying relationship for Judge type (with partial key Name)

n>2 Relationships

1. PartOf
 - a. Degree: Ternary
 - b. Entity Types: Contestants, Team, Event
 - c. Cardinality Ratio: C:T:E

Functional Requirements

Modifications

Insert

1. Results (on completion of event)
2. Volunteer (on-the-spot registration)
3. Contestant (on-the-spot registration)

Delete

1. Record of ParticipatingIn (disqualification)
2. Event (cancellation)
3. Record of VolunteeringFor (dropping out)

Update

1. Volunteer Hours
2. Event DateTime, Venue (postponement, shifting)
3. Event completed

Retrievals

Selection

1. View all Contestants
2. View all Volunteers
3. Complete Schedule

Projection:

1. View result of a contestant
2. View result of an event
3. View result of a team

Aggregate:

1. Sum of all the 1st, 2nd, 3rd prizes of a Contestant (MVP)
2. Overall Leaderboard
3. Team Leaderboard
4. Number of total volunteering hours

Search:

1. Schedule of a contestant
2. Search for the judges for a particular Event
3. Search for a particular Volunteer's details

Analysis:

1. Participation as a function of age
2. Volunteers per Event
3. Find any scheduling conflicts