

Institute of Technology, Nirma University

Olympics Management
System

Innovative Assignment
(Phase 1)

Database Management System
(2CS402)

Submitted By:

Mahek Parekh (19BCE154)

Dhruva Patel (19BCE163)

Esha Patel (19BCE169)

Features:

- Helps in storing and retrieving data for Olympics and various other similar tournaments like Commonwealth Games, Asian Games, Khel Mahakumbh, etc. This model can also be used for Sports day in Schools and Colleges as with its help, storing and retrieving data becomes easy.

Project Functional Requirements:

Phase-1: Tool used for drawing ER Diagram <https://erdplus.com/> , Computer System, Microsoft Word.

Phase-2: Oracle Database 11g Express Edition, Computer System, Microsoft Word, Document of Phase-1 which contains Relational Model.

ER Model:

Entities:

Entity	Strong/Weak	Key Attribute/ Partial Attribute
Athlete	Strong	AthleteID
Country	Strong	CountryCode
Event	Strong	EventID
Team	Strong	TeamID
Referee	Strong	RefereeID
OlympicSite	Weak	Year, Season
Match	Strong	MatchID

Attributes:

Entity	Attribute	Key / Partial / Composite / Derived / Multivalued
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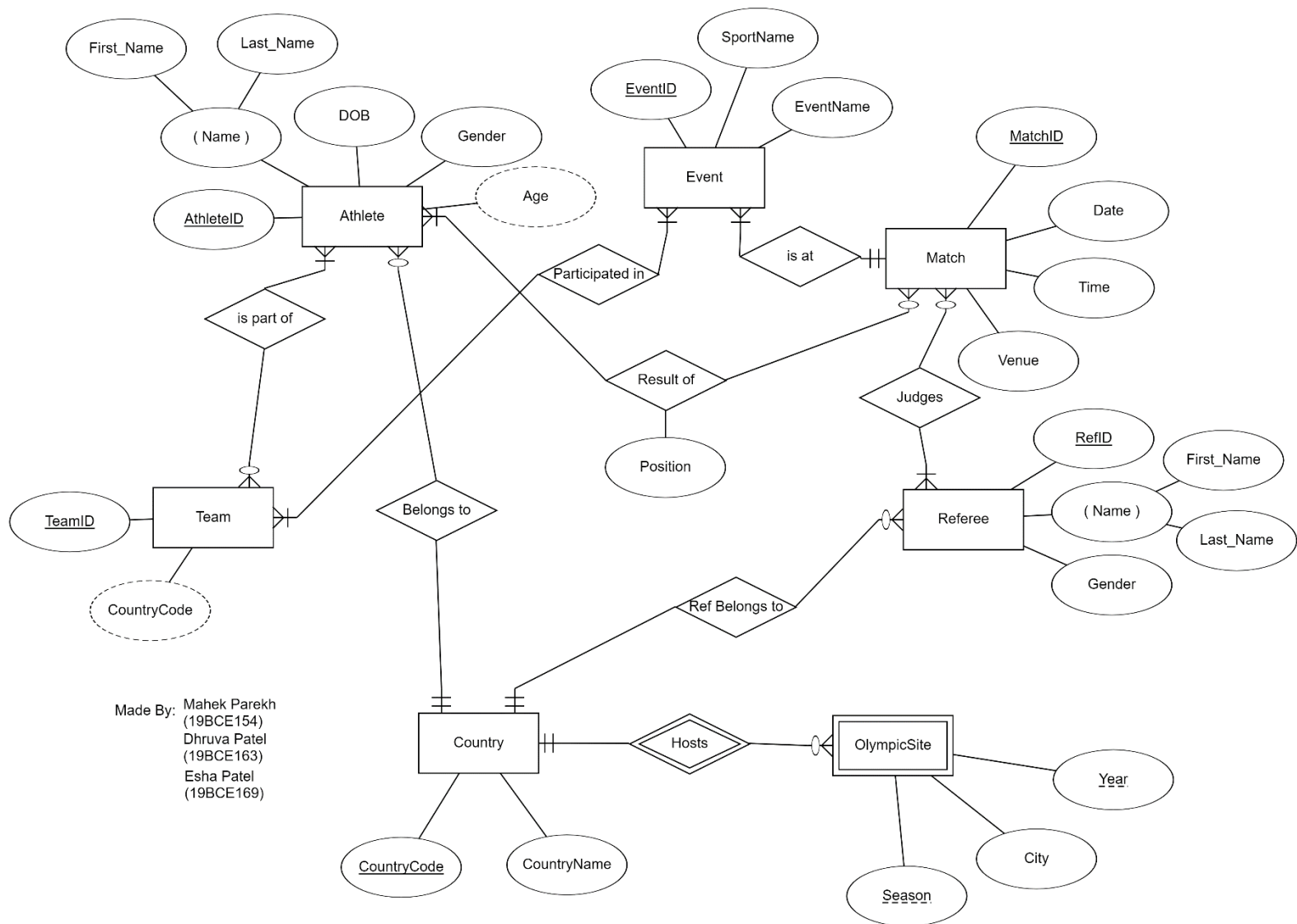
Athlete	AthleteID	Key Attribute
	Name	Composite Attribute (First_Name + Last_Name)
	DOB	-
	Gender	-
	Age	Derived Attribute
Country	CountryCode	Key Attribute
	CountryName	-
Event	EventID	Key Attribute
	SportName	-
	EventName	-
Team	TeamID	Key Attribute
	CountryCode	Derived Attribute
Referee	RefID	Key Attribute
	Name	Composite Attribute (First_Name + Last_Name)
	Gender	-
OlympicSite	Year	Partial Key Attribute
	City	-
	Season	Partial Key Attribute
Match	MatchID	Key Attribute
	Date	-
	Time	-
	Venue	-

Relationship and Mapping Cardinalities and Participation:

Entity 1	Relation	Entity 2	Cardinality	Participation of Entity 1	Participation of Entity 2	Descriptive Attributes
Athlete	Is Part Of	Team	M:N	Partial	Total	-
Team	Participated In	Event	M:N	Total	Total	-
Event	Is At	Match	1:N	Total	Total	-
Referee	Judges	Match	M:N	Partial	Total	-
Athlete	Result Of	Match	M:N	Partial	Total	Position
Athlete	Belongs To	Country	M:1	Total	Partial	-
Referee	Ref Belongs To	Country	M:1	Total	Partial	-

Country	Hosts	OlympicSite	1:M	Partial	Total	-
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ER Diagram:



Relational Model:

Tables Required:

- Athlete (AthleteID, First_Name, Last_Name, DOB, Gender, CountryCode)

- Country (CountryCode, CountryName)
- Referee (RefID, First_Name, Last_Name, Gender, CountryCode)
- OlympicSite (Year, Season, City, CountryCode)
- PartOf (AthleteID, TeamID)
- Judges (MatchID, RefID)
- Result (MatchID, AthleteID, Position)
- TeamParticipatedinEvent (TeamID, EventID, SportName, EventName)
- EventInMatch (EventID, SportName, EventName, MatchID, Date, Time, Venue)

Relational Schema of each table:

Athlete:

Column Name	Data Type	Size	Constraints
AthleteID	varchar2	5	Primary key
First_Name	varchar2	15	Not Null
Last_Name	varchar2	15	
DOB	date		
Gender	char	1	Female (F) / Male (M)
CountryCode	varchar2	5	ForeignKey references CountryCode of Country table

Country:

Column Name	Data Type	Size	Constraints
CountryCode	Varchar2	5	Primary Key
CountryName	Varchar2	15	Not Null

Referee:

Column Name	Data Type	Size	Constraints
RefID	Varchar2	5	Primary Key
First_Name	Varchar2	15	Not Null
Last_Name	Varchar2	15	
Gender	char	1	Female (F) / Male (M)
CountryCode	Varchar2	5	ForeignKey references CountryCode of Country table

OlympicSite:

Column Name	Data Type	Size	Constraints
Year	Number	4	Primary Key along with Season
Season	Char	1	Primary Key along with Year (Winter (W) / Summer (S))
City	Varchar2	15	Not Null
CountryCode	Varchar2	5	ForeignKey references CountryCode of Country table

PartOf:

Column Name	Data Type	Size	Constraints
AthleteID	Varchar2	5	Primary Key and ForeignKey

			references AtheleteID of Athlete table
TeamID	Varchar2	5	

Judges:

Column Name	Data Type	Size	Constraints
MatchID	Varchar2	5	Primary Key
RefID	Varchar2	5	Foreign Key references RefereeID of Referee table

Result:

Column Name	Data Type	Size	Constraints
MatchID	Varchar2	5	Primary Key along with AthleteID
AthleteID	Varchar2	5	Primary Key along with MatchID and Foreign Key references AthleteID from Athlete table
Position	Number	2	Check > 0

TeamParticipatedinEvent:

Column Name	Data Type	Size	Constraints
TeamID	Varchar2	5	Primary Key along with EventID

EventID	Varchar2	5	Primary Key along with TeamID
SportName	Varchar2	15	
EventName	Varchar2	15	

MatchInEvent:

Column Name	Data Type	Size	Constraints
MatchID	Varchar2	5	Primary Key along with MatchID
EventID	Varchar2	5	Primary Key along with EventID
SportName	Varchar2	15	
EventName	Varchar2	15	
Date	Date		
Time	Number	2,2	Check between 00.00 and 23.59
Venue	Varchar2	15	