INFS1200 ASSIGNMENT 1

By Michael Delmastro

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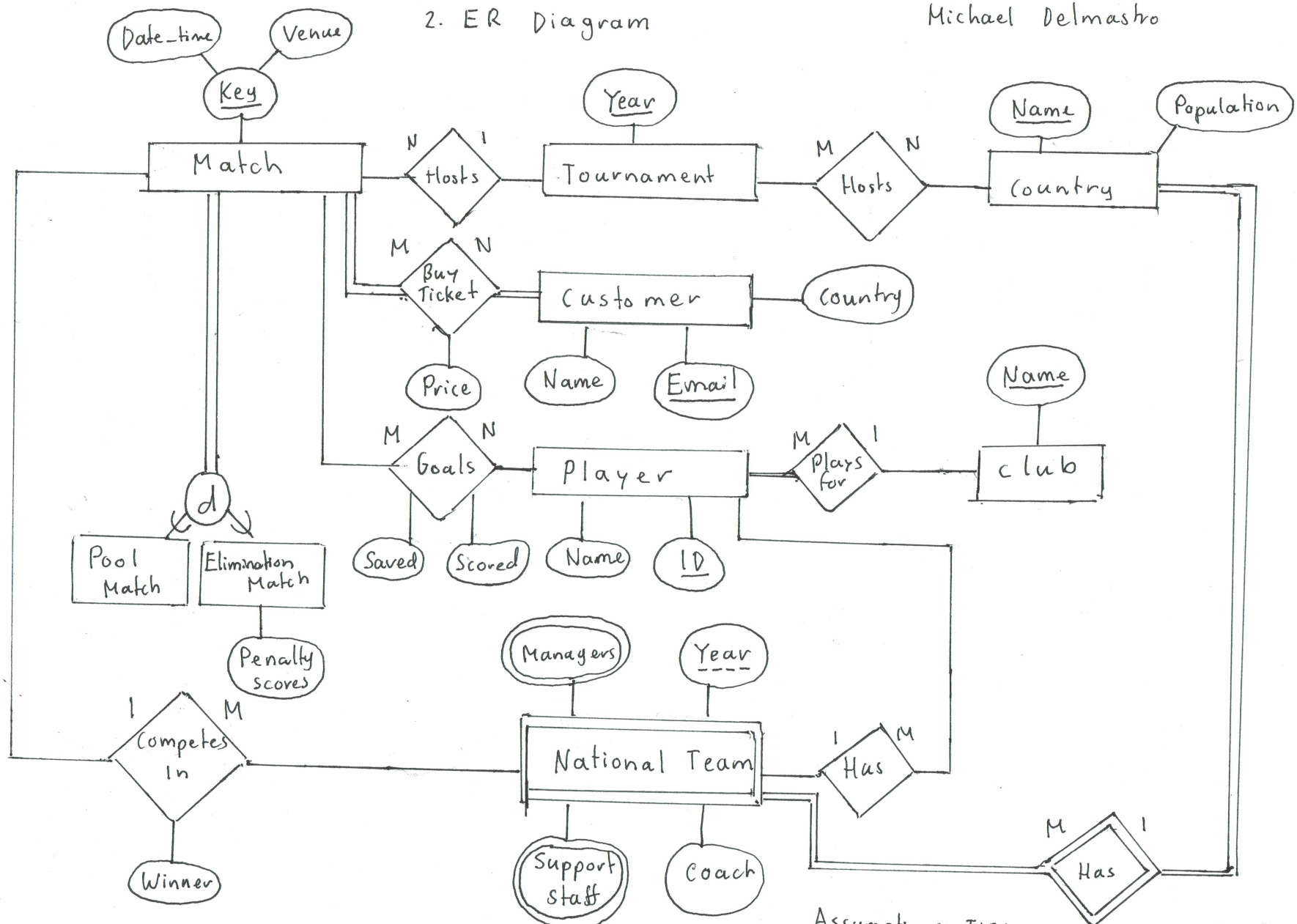
2. ER Diagram

Michael Delmastro



YOUR ER DIAGRAM MUST FIT ON THIS PAGE

Assumptions: FIFA national teams' names are just based on country, no special names.

- country name is unique
- club name is unique
- Year can be key of tournament as only 1 tournament occurs /year.

YOUR FINAL MAPPING MUST FIT ON THIS PAGE

Strong Entities:

Match [Date-time, Venue, T.Year]
Customer [Email, Name, Country]
Tournament [Year]
Country [Name, population]
Club [Name, P.ID]
Player [ID, Name]

Multivalued

National_Support_staff [T.Year, C.Name, Support-staff]
Managers [T.Year, C.Name, Managers]

Weak Entities:

National-Team [T.Year, C.Name, Coach, MDate-time, MVenue, Winner]

One to Many:

Match_tournament 1-M relationship as above (Strong Entities Section).

Player [P.ID, T.Year, C.Name, Cl.Name, Name]

Many to Many:

Customer_match [MDate_Time, MVenue, Email, Price]
Country_Tournament [T.Year, C.Name]
Goals [P.ID, MDate-time, M.Venue, scored-goals, saved-goals]

Subclasses:

Elimination_Match [M.Date-time, M.Venue, Penalty-Score]
Pool_Match [M.Date-time, M.Venue]

Foreign keys:

Pool-Match.Date-Time references Match.Date-Time
Pool-Match.Venue references Match.Venue.
Elimination_match.Date-Time references Match.Date_Time.
Elimination_Match.Venue references Match.Venue.
National-Team.Year references Tournament.Year
National-Team.Name references Country.Name
Goals.ID references Player.ID
Goals.Date-Time references Match.Date-Time
Goals.Venue references Match.Venue
National-Team.Date-Time references Match.Date-Time
National-Team.Venue references Match.Venue
Player.T.Year references Tournament.Year
Player.C.Name references Country.Name
Player.Cl.Name references Club.Name
Country-Tournament.Year references Tournament.Year
Country-Tournament.C.Name references Country.Name

customer_match.M.Date-Time references Match.Date-Time
customer_match.M.Venue references Match.Venue
customer-match.Email references ...

[Two above are the only foreign keys]

YOUR FUNCTIONAL DEPENDENCIES MUST FIT ON THIS PAGE

PRODUCTS[MatchID, ProductID, ProductType, Description, Price, Alcoholic, VendorID, VendorName, Quantity, SeniorDiscount].

Functional Dependencies:

fd1: ProductID → { ProductType, Description, SeniorDiscount, Alcoholic }

fd2: VendorID → VendorName

fd3: { MatchID, VendorID } → Quantity

fd4: { MatchID, ProductID } → Price

YOUR NORMALISATION MUST FIT ON THIS PAGE

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R[MatchID, ProductID, ProductType, Description, Price, Alcoholic, VendorID, VendorName, Quantity, SeniorDiscount]

FD1:
ProductID → {ProductType, Description, SeniorDiscount, Alcoholic}

R1[ProductID, ProductType, Description, SeniorDiscount, Alcoholic].

R_{n1}[MatchID, ProductID, Price, VendorID, VendorName, Quantity]

FD2: VendorID → VendorName

R2[VendorID, VendorName]

R_{n2}[MatchID, ProductID, Price, VendorID, Quantity]

FD3: {MatchID, VendorID} → Quantity

R3[MatchID, VendorID, Quantity]

R_{n3}[MatchID, ProductID, Price, VendorID].

FD4: {MatchID, ProductID} → Price

R4[MatchID, ProductID, Price]

R5[MatchID, ProductID, VendorID]

Normalisation:

R1 [ProductID, ProductType, Description, SeniorDiscount, Alcoholic]

R2 [VendorID, VendorName]

R3 [MatchID, VendorID, Quantity]

R4 [MatchID, ProductID, Price]

R5 [MatchID, ProductID, VendorID].