DBS211 – Week 11

# UNF and 1NF Demo

## Step 1 – Choose a MAIN entity and list attributes associated with it

**GROUPS** [ Group Name, gender, team name, team wins, team draws, team losses, team gf, team ga, team flag image, team points, team position in group, game number, game location, game team 1, game team 2, game date and time, game team 1 score, game team 2 score, winning team, losing team, draws, game status, player name, player number, player status, player position, cards]

## Step 1b – eliminate calculated fields

**GROUPS** [ Group Name, gender, team name, ~~team wins, team draws, team losses~~, ~~team gf, team ga~~, team flag image, ~~team points, team position in group~~, game number, game location, game team 1, game team 2, game date and time, game team 1 score, game team 2 score, ~~winning team, losing team, draws,~~ game status, player name, player number, player status, player position, player cards]

## Step 2 – Identify repeating groups

**GROUPS** [ Group Name, (gender), (team name, team flag image, player name, player number, player status, player position, player cards), game number, game location, game team 1, game team 2, game date and time, game team 1 score, game team 2 score, game status]

## Done that is UNF

# 1NF – eliminate non-atomic fields

## Step 1 – separate already identified repeating groups

**GROUPS** [ Group Name, FK gender, game number, game location, game team 1, game team 2, game date and time, game team 1 score, game team 2 score, game status]

**GENDER** [ gender, genderDescription ]

TEAMS [ team name, team flag image, FK Group Name, player name, player number, player status, player position, player cards ]

## Step 2 – Identify non-atomic fields

**GROUPS** [ Group Name, FK gender, game number, game location, game team 1, game team 2, game date and time, game team 1 score, game team 2 score, game status]

For visualization

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Group | Gender | Game | Date | Team 1 | Team 2 |
| A | M | 2 | July 22, 17:00 | MEX | FRA |
| 1 | July 22, 20:00 | JPN | RSA |

**GENDER** [ gender, genderDescription ]

**TEAMS** [ team name, team flag image, FK Group Name, player name, player number, player status, player position, player cards ]

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Team | flag | group | Player name | P number | status |
| JPN | Jpn.jpg | A | Tani k | 12 | Playing |
| Sakai H | 2 | Playing |
| Nakayama Y | 3 | Playing |

## Step 2b – Separate the non-atomic fields

**GROUPS** [ Group Name, FK gender]

**GAMES** [ game number, FK Group Name, game location, game team 1, game team 2, game date and time, game team 1 score, game team 2 score, game status ]

**GENDER** [ gender, genderDescription ]

**TEAMS** [ team name, team flag image, FK Group Name]

**PLAYERS** [ player name, player number, player status, player position, player cards, FK team name ]

## Step 3 – double check all new entities and attributes for Repeating groups and non-atomic fields

**GROUPS** [ Group Name, FK gender]

**GAMES** [ game number, FK Group Name, game location, game team 1, game team 2, game date and time, game team 1 score, game team 2 score, game status ]

**GENDER** [ gender, genderDescription ]

**TEAMS** [ team name, team flag image, FK Group Name]

**PLAYERS** [ player name, player number, player status, player position, player cards, FK team name ]

*Okay player cards needs to be separated*

**GROUPS** [ Group Name, FK gender]

**GAMES** [ game number, FK Group Name, game location, game team 1, game team 2, game date and time, game team 1 score, game team 2 score, game status ]

**GENDER** [ gender, genderDescription ]

**TEAMS** [ team name, team flag image, FK Group Name]

**PLAYERS** [ player name, player number, player status, player position, FK team name ]

**PLAYERCARDS** [ FK player name, FK game number, time in game, card colour ]

*We forgot who scored each goal*

**GROUPS** [ Group Name, FK gender]

**GAMES** [ game number, FK Group Name, game location, game team 1, game team 2, game date and time, game team 1 score, game team 2 score, game status ]

**GENDER** [ gender, genderDescription ]

**TEAMS** [ team name, team flag image, FK Group Name]

**PLAYERS** [ player name, player number, player status, player position, FK team name ]

**PLAYERCARDS** [ FK player name, FK game number, time in game, card colour ]

**GOALSCORERS** [ FK game number, FK player name, time in game ] *(log table)*

# The final 1NF is:

**GROUPS** [ Group Name, FK gender]

**GAMES** [ game number, FK Group Name, game location, game team 1, game team 2, game date and time, game team 1 score, game team 2 score, game status ]

**GENDER** [ gender, genderDescription ]

**TEAMS** [ team name, team flag image, FK Group Name]

**PLAYERS** [ player name, player number, player status, player position, FK team name ]

**PLAYERCARDS** [ FK player name, FK game number, time in game, card colour ]

**GOALSCORERS** [ FK game number, FK player name, time in game ]

*Please note, that each student may have a different 1NF, that is okay as long as by the time we get to 3NF they are all very much the same.*