

CST363 Introduction to Database Systems

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Final Project Presentation



Team

TeamID	City	Team	Wins	Losses	LWStreak	ArenaID	ConfID
1	Atlanta	Hawks	48	34	7	1	1
2	Boston	Celtics	48	34	5	2	1
3	Brooklyn	Nets	21	61	2	3	1
4	Charlotte	Hornets	48	34	7	4	1
5	Chicago	Bulls	42	40	6	5	1
6	Cleveland	Cavilers	57	25	8	6	1
7	Dallas	Mavericks	42	40	6	7	2
8	Denver	Nuggets	33	49	4	8	2
9	Detroit	Pistons	30	52	5	9	1
10	Golden State	Warriors	73	9	24	10	2
11	Houston	Rockets	41	41	5	11	2
12	Indiana	Pacers	45	37	6	12	1
13	Los Angeles	Clippers	53	29	10	13	2
14	Los Angeles	Lakers	17	65	3	13	2
15	Memphis	Grizzlies	42	40	5	14	2
16	Miami	Heat	48	34	5	15	1
17	Milwaukee	Bucks	33	49	4	16	1
18	Minnesota	Timberwolves	29	53	3	17	2
19	New Orleans	Pelicans	30	52	3	18	2
20	New York	Knicks	32	50	4	19	1
21	Oklahoma City	Thunder	55	27	8	20	2
22	Orlando	Magic	35	47	5	21	1
23	Philadelphia	Sixers	10	72	1	22	1
24	Phoenix	Suns	23	59	3	23	2
25	Portland	Trailblazers	44	38	6	24	2
26	Sacramento	Kings	33	49	5	25	2
27	San Antonio	Spurs	67	15	13	26	2
28	Toronto	Raptors	56	26	11	27	1
29	Utah	Jazz	40	42	7	28	2
30	Washington	Wizards	41	41	5	29	1

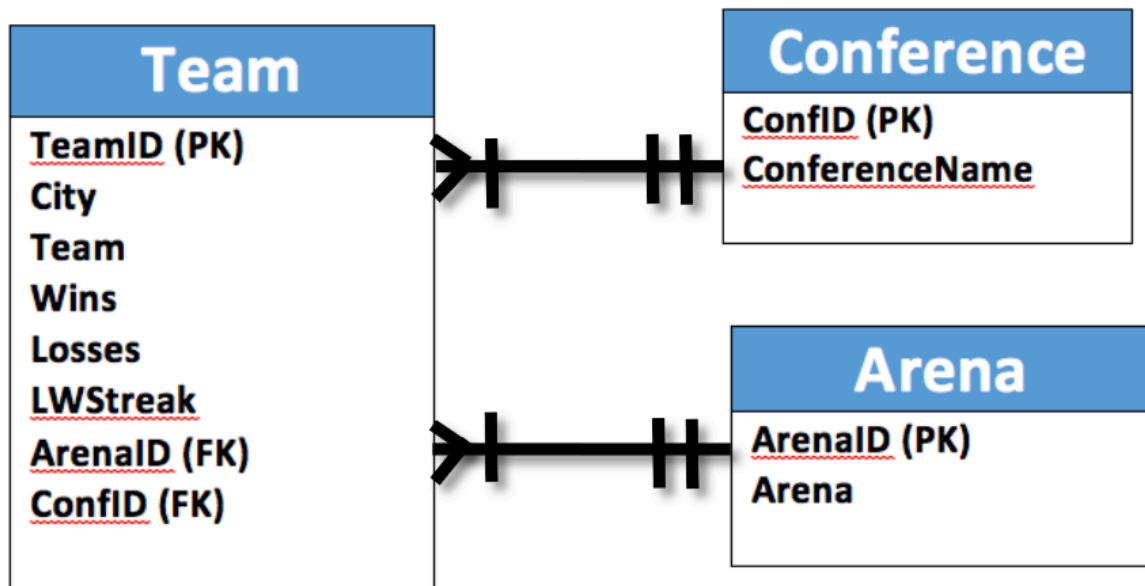
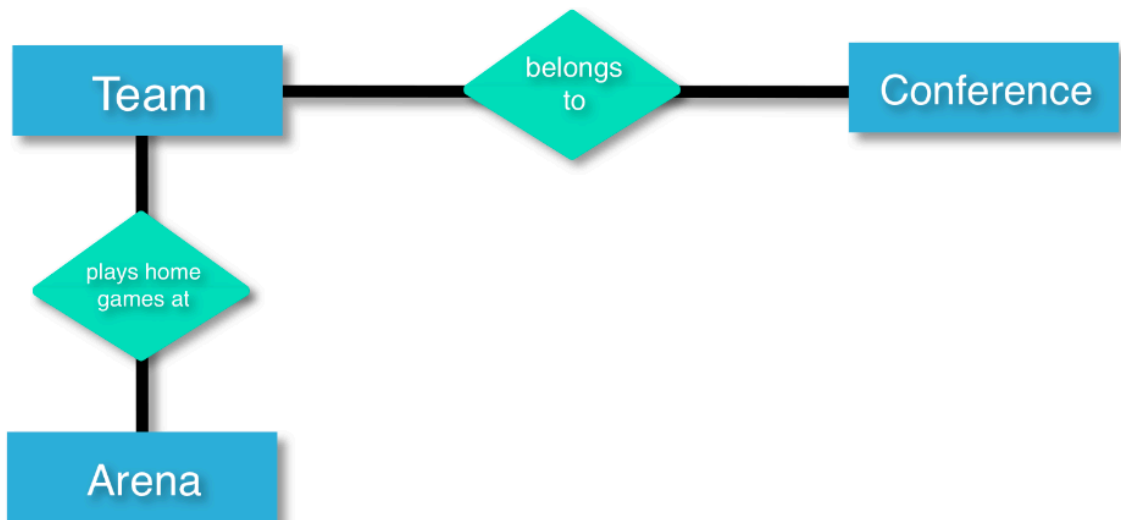
Conference

ConfID		ConferenceName	
1		Eastern	
2		Western	

Arena

ArenaID	Arena
1	Philips Arena
2	TD Garden
3	Barclay Center
4	Time Warner Cable Arena
5	United Center
6	Quicken Loans Arena
7	American Airlines Center
8	Pepsi Center
9	The Palace of Auburn Hills
10	Oracle Arena
11	Toyota Center
12	Bankers Life Fieldhouse
13	Staples Center
13	Staples Center
14	FedEx Forum
15	American Airlines Arena
16	BMO Harris Bradley Center
17	Target Center
18	Smoothie King Center
19	Madison Square Garden
20	Chesapeake Energy Arena
21	Amway Center
22	Wells Fargo Center
23	Talking Stick Resort Arena
24	Moda Center
25	Sleep Train Arena
26	AT&T Center
27	Air Canada Centre
28	Vivint Smart Home Arena
29	Verizon Center

Entities



Create Tables

```
/* Drop the prior table if it exists (This ensures that we are reading from the table that we are going to create) */
DROP TABLE Conference;
DROP TABLE Arena;
DROP TABLE Team;

/* Conference Table */
CREATE TABLE Conference (
  ConfID          CHAR(1),
  ConferenceName  VARCHAR2(8),
  PRIMARY KEY (ConfID)
);

/* Arena Table */
CREATE TABLE Arena (
  ArenaID         CHAR(2),
  Arena           VARCHAR2(35),
  PRIMARY KEY (ArenaID)
);

/* Team Table */
CREATE TABLE Team (
  TeamID          CHAR(2),
  City            VARCHAR2(15),
  Team            CHAR(13),
  Wins            NUMBER(2),
  Losses          NUMBER(2),
  LWStreak        NUMBER(2),
  ArenaID         CHAR(2),
  ConfID          CHAR(1),
  CONSTRAINT fk_ArenaID foreign key (ArenaID) references Arena(ArenaID),
  CONSTRAINT fk_ConfID foreign key (ConfID) references Conference(ConfID),
  PRIMARY KEY (TeamID)
);

/* Save all data */
COMMIT;
```

Load Data in Tables

```
@@createNBATables.sql

/* Load Data into Tables */

/* Conference Table */
INSERT INTO Conference VALUES('1', 'Eastern');
INSERT INTO Conference VALUES('2', 'Western');

/* Arena Table */
INSERT INTO Arena VALUES('1', 'Philips Arena');
INSERT INTO Arena VALUES('2', 'TD Garden');
INSERT INTO Arena VALUES('3', 'Barclay Center');
INSERT INTO Arena VALUES('4', 'Time Warner Cable Arena');
INSERT INTO Arena VALUES('5', 'United Center');
INSERT INTO Arena VALUES('6', 'Quicken Loans Arena');
INSERT INTO Arena VALUES('7', 'American Airlines Center');
INSERT INTO Arena VALUES('8', 'Pepsi Center');
INSERT INTO Arena VALUES('9', 'The Palace of Auburn Hills');
INSERT INTO Arena VALUES('10', 'Oracle Arena');
INSERT INTO Arena VALUES('11', 'Toyota Center');
INSERT INTO Arena VALUES('12', 'Bankers Life Fieldhouse');
INSERT INTO Arena VALUES('13', 'Staples Center');
INSERT INTO Arena VALUES('14', 'FedEx Forum');
INSERT INTO Arena VALUES('15', 'American Airlines Arena');
INSERT INTO Arena VALUES('16', 'BMO Harris Bradley Center');
INSERT INTO Arena VALUES('17', 'Target Center');
INSERT INTO Arena VALUES('18', 'Smoothie King Center');
INSERT INTO Arena VALUES('19', 'Madison Square Garden');
INSERT INTO Arena VALUES('20', 'Chesapeake Energy Arena');
INSERT INTO Arena VALUES('21', 'Amway Center');
INSERT INTO Arena VALUES('22', 'Wells Fargo Center');
INSERT INTO Arena VALUES('23', 'Talking Stick Resort Arena');
INSERT INTO Arena VALUES('24', 'Moda Center');
INSERT INTO Arena VALUES('25', 'Sleep Train Arena');
INSERT INTO Arena VALUES('26', 'ATT Center');
INSERT INTO Arena VALUES('27', 'Air Canada Centre');
INSERT INTO Arena VALUES('28', 'Vivint Smart Home Arena');
INSERT INTO Arena VALUES('29', 'Verizon Center');

/* Team Table */

INSERT INTO Team VALUES('1', 'Atlanta', 'Hawks', 48, 34, 7, '1', '1');
INSERT INTO Team VALUES('2', 'Boston', 'Celtics', 48, 34, 5, '2', '1');
INSERT INTO Team VALUES('3', 'Brooklyn', 'Nets', 21, 61, 2, '3', '1');
INSERT INTO Team VALUES('4', 'Charlotte', 'Hornets', 48, 34, 7, '4', '1');
INSERT INTO Team VALUES('5', 'Chicago', 'Bulls', 42, 40, 6, '5', '1');
INSERT INTO Team VALUES('6', 'Cleveland', 'Cavaliers', 57, 25, 8, '6', '1');
INSERT INTO Team VALUES('7', 'Dallas', 'Mavericks', 42, 40, 6, '7', '2');
INSERT INTO Team VALUES('8', 'Denver', 'Nuggets', 33, 49, 4, '8', '2');
INSERT INTO Team VALUES('9', 'Detroit', 'Pistons', 30, 52, 5, '9', '1');
INSERT INTO Team VALUES('10', 'Golden State', 'Warriors', 73, 9, 24, '10', '2');
INSERT INTO Team VALUES('11', 'Houston', 'Rockets', 41, 41, 5, '11', '2');
INSERT INTO Team VALUES('12', 'Indiana', 'Pacers', 45, 37, 6, '12', '1');
INSERT INTO Team VALUES('13', 'Los Angeles', 'Clippers', 53, 29, 10, '13', '2');
INSERT INTO Team VALUES('14', 'Los Angeles', 'Lakers', 17, 65, 3, '13', '2');
INSERT INTO Team VALUES('15', 'Memphis', 'Grizzlies', 42, 40, 5, '14', '2');
INSERT INTO Team VALUES('16', 'Miami', 'Heat', 48, 34, 5, '15', '1');
INSERT INTO Team VALUES('17', 'Milwaukee', 'Bucks', 33, 49, 4, '16', '1');
INSERT INTO Team VALUES('18', 'Minnesota', 'Timberwolves', 29, 53, 3, '17', '2');
INSERT INTO Team VALUES('19', 'New Orleans', 'Pelicans', 30, 52, 3, '18', '2');
INSERT INTO Team VALUES('20', 'New York', 'Knicks', 32, 50, 4, '19', '1');
INSERT INTO Team VALUES('21', 'Oklahoma City', 'Thunder', 55, 27, 8, '20', '2');
INSERT INTO Team VALUES('22', 'Orlando', 'Magic', 35, 47, 5, '21', '1');
INSERT INTO Team VALUES('23', 'Philadelphia', 'Sixers', 10, 72, 1, '22', '1');
INSERT INTO Team VALUES('24', 'Phoenix', 'Suns', 23, 59, 3, '23', '2');
INSERT INTO Team VALUES('25', 'Portland', 'Trailblazers', 44, 38, 6, '24', '2');
INSERT INTO Team VALUES('26', 'Sacramento', 'Kings', 33, 49, 5, '25', '2');
INSERT INTO Team VALUES('27', 'San Antonio', 'Spurs', 67, 15, 13, '26', '2');
INSERT INTO Team VALUES('28', 'Toronto', 'Raptors', 56, 26, 11, '27', '1');
INSERT INTO Team VALUES('29', 'Utah', 'Jazz', 40, 42, 7, '28', '2');
INSERT INTO Team VALUES('30', 'Washington', 'Wizards', 41, 41, 5, '29', '1');

/* Save all data */

COMMIT;
```

Query Questions

1. How many NBA Teams are there?
2. Which Team had the best record this season?
3. Which Team had the worst record this season?
4. What are the top 8 Teams in the Eastern Conference and their winning percentage?
5. What are the top 8 Teams in the Western Conference and their winning percentage?
6. What conference are the Spurs in and what is their record and winning percentage?
7. What conference are the Hornets in and what is their record and winning percentage?
8. Which Teams are in the Western Conference ordered from best to worst record?
9. Which Teams are in the Eastern Conference ordered from best to worst record?
10. Who had the worst record in the Western Conference and their winning percentage?
11. Who had the worst record in the Eastern Conference and their winning percentage?
12. What Arena do the Golden State Warriors play in?
13. What Arena do the Los Angeles Clippers play in?
14. Which Team(s) play home games at Staples Center?
15. What Arena do the Knicks play in?
16. Who had the longest winning streak?
17. Who had the shortest winning streak?
18. Update a Teams Wins and Losses and show the result.

SQL Queries

```
/* Create NBA Table using the following script */
@@LoadNBATablesData.sql

/* 1) How many NBA Teams are there? */
SELECT count(*) AS NBATotalTeamCount FROM Team;

/* 2) Which team had the best record this season? */
SELECT City, Team, MostWins, LeastLosses
FROM(
SELECT
City, Team, max(Wins) AS MostWins, min(Losses) AS LeastLosses
FROM Team
GROUP BY City, Team
ORDER BY max(Wins) DESC)
WHERE rownum = 1 ;

/* 3) Which team had the worst record this season? */
SELECT City, Team, LeastWins
FROM(
SELECT
City, Team, min(Wins) AS LeastWins
FROM Team
GROUP BY City, Team
ORDER BY min(Wins) ASC)
WHERE rownum = 1 ;

/* 4) What are the top 8 Teams in the Eastern Conference and their Winning Percentage? */
SELECT Teams, WinPerct
FROM(
SELECT
TEAM as Teams,
(TRUNC(WINS/(LOSSES+WINS),2))*100||'%' as WinPerct
FROM Team
WHERE WINS>LOSSES and ConfID = 1
ORDER BY WinPerct DESC)
WHERE rownum<=8;

/* 5) What are the top 8 Teams in the Western Conference and their Winning Percentage? */
SELECT Teams, WinPerct
FROM(
SELECT
TEAM as Teams,
(TRUNC(WINS/(LOSSES+WINS),2))*100||'%' as WinPerct
FROM Team, Conference
WHERE ConferenceName = 'Western' and Conference.ConfID = Team.ConfID
ORDER BY WinPerct DESC)
WHERE rownum <= 8;

/* 6) What Conference are the San Antonio Spurs in and what is their record along with winning percentage? */
SELECT ConferenceName, City, Teams, Wins, Losses, WinPerct
FROM(
SELECT
ConferenceName, City, TEAM as Teams, Wins, Losses,
(TRUNC(WINS/(LOSSES+WINS),2))*100||'%' as WinPerct
FROM Team, Conference
WHERE Team = 'Spurs' and Conference.ConfID = Team.ConfID
ORDER BY WinPerct DESC)
WHERE rownum = 1;

/* 7) What Conference are the New Orlean Hosrnets in and what is their record along with winning percentage? */
SELECT ConferenceName, City, Teams, Wins, Losses, WinPerct
FROM(
SELECT
ConferenceName, City, TEAM as Teams, Wins, Losses,
(TRUNC(WINS/(LOSSES+WINS),2))*100||'%' as WinPerct
FROM Team, Conference
WHERE Team = 'Hornets' and Conference.ConfID = Team.ConfID
ORDER BY WinPerct DESC)
WHERE rownum = 1;
```

```

/* 8) Which teams are in the Western Conference ordered from best to worst record? */

SELECT ConferenceName, City, Teams, Wins, Losses, WinPerct
FROM(
SELECT
ConferenceName, City, TEAM as Teams, Wins, Losses,
(TRUNC(WINS/(LOSSES+WINS),2))*100||'%' as WinPerct
FROM Team, Conference
WHERE ConferenceName = 'Western' and Conference.ConfID = Team.ConfID
ORDER BY WinPerct DESC)
;

/* 9) Which teams are in the Eastern Conference ordered from best to worst record? */

SELECT ConferenceName, City, Teams, Wins, Losses, WinPerct
FROM(
SELECT
ConferenceName, City, TEAM as Teams, Wins, Losses,
(TRUNC(WINS/(LOSSES+WINS),2))*100||'%' as WinPerct
FROM Team, Conference
WHERE ConferenceName = 'Eastern' and Conference.ConfID = Team.ConfID
ORDER BY WinPerct DESC)
;

/* 10) Who had the worst record in the Western Conference and what is their winning percentage? */

SELECT Teams, WinPerct
FROM(
SELECT
TEAM as Teams,
(TRUNC(WINS/(LOSSES+WINS),2))*100||'%' as WinPerct
FROM Team, Conference
WHERE ConferenceName = 'Western' and Conference.ConfID = Team.ConfID
ORDER BY WinPerct ASC)
WHERE rownum =1;

/* 11) Who had the worst record in the Eastern Conference and what is their winning percentage? */

SELECT Teams, WinPerct
FROM(
SELECT
TEAM as Teams,
(TRUNC(WINS/(LOSSES+WINS),2))*100||'%' as WinPerct
FROM Team, Conference
WHERE ConferenceName = 'Eastern' and Conference.ConfID = Team.ConfID
ORDER BY WinPerct ASC)
WHERE rownum =1;

/* 12) What Arena do the Golden State Warriors play in? */

SELECT Team, Arena
FROM Team, Arena
WHERE Team = 'Warriors' and Arena.ArenaID = Team.ArenaID;

/* See what we did there? wink wink */

/* 13) What Arena do the Los Angeles Clippers play in? */

SELECT Team, Arena
FROM Team, Arena
WHERE Team = 'Clippers' and Arena.ArenaID = Team.ArenaID;

/* 14) Which team(s) play their Home Games at Staples Center? */

SELECT Team, Arena
FROM Team, Arena
WHERE Arena = 'Staples Center' and Arena.ArenaID = Team.ArenaID;

/* 15) What Arena do the Knicks play in? */

SELECT Team, Arena
FROM Team, Arena
WHERE Team = 'Knicks' and Arena.ArenaID = Team.ArenaID;

```

```

/* 16) Which team had the Longest Winning Streak this season? */

SELECT City, Team, LongestWinningStreak
FROM(
SELECT
City, Team, max(LWStreak) AS LongestWinningStreak
FROM Team
GROUP BY City, Team
ORDER BY max(Wins) DESC)
WHERE rownum = 1 ;

/* 17) Which team had the Shortest Winning Streak this season? */

SELECT City, Team, ShortestWinningStreak
FROM(
SELECT
City, Team, min(LWStreak) AS ShortestWinningStreak
FROM Team
GROUP BY City, Team
ORDER BY max(Wins) ASC)
WHERE rownum = 1 ;

/* 18) Update Record */

Update a Team's WINS and LOSSES */

PROMPT ---NBA WIN/LOSS Tracking System ---

ACCEPT vTeamName PROMPT 'Please Enter the Team Name: ';
ACCEPT vWINS PROMPT 'Please enter team WINS: ';
ACCEPT vLOSSES PROMPT 'Please enter team LOSSES: ';
ACCEPT vStreak PROMPT 'Please enter the LWStreak: ';

UPDATE Team
SET WINS='&vWINS', LOSSES='&vLOSSES', LWSTREAK='&vStreak'
WHERE TEAM='&vTeamName';

PROMPT ---Thank You, Your Update is Below ---

SELECT * FROM Team WHERE TEAM = '&vTeamName';

/* Turn off spool */
spool off;

```