



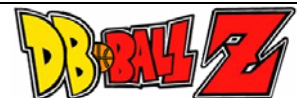
Database Systems 600.315 (Fall 2004)
Professor Yarowsky

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12/18/04



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I. Introduction

DB Ball Z is a database of NBA players, teams, and statistics. The application consists of a MySQL database that stores all the data and a user-friendly, PHP based front-end that allows users to make various player, team, and statistical queries.

An in-depth project proposal can be found here:

<http://www.mgourlay.com/basketball/FinalProjectOverview.pdf>



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II. Usage and Page Descriptions

A. *Main Page* – <http://www.mgourlay.com/basketball/>

From this page, the user can select which of the three main query pages they wish to visit. Each of the three query pages allows a unique combination of details to be entered to tailor an SQL query to the user's needs. Descriptions of the three query pages follows.



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B. *Player Statistics* – <http://www.mgourlay.com/basketball/individual.php>

This page is used to retrieve information regarding a specific player. The first step is to enter a player's first or last name into the form at the top. Any part of the player's first or last name is acceptable. Next, proceed to select which statistics you are interested in. Choose the years you are interested in. Since players do not always play the same amount in each game, we thought it would be interesting to compare statistics that have been normalized over a 48 minute period. By selecting Per Game or Per 48 Minutes, you can view your data in either form.

Some example queries would be:

i. Show me all players from 2000 to 2003 with the last name Jackson, as well as their 3 point percentages, points and rebounds per 48 minutes.

For this query, enter "Jackson" in the Player's Last Name field. Check the 3PT%, Points and Total Rebounds boxes. Check the boxes from 2000 to 2003, and the Per 48 Minutes bullet then submit your query.



Enter part or all of player name and/or player ID #

Player's First Name:	<input type="text"/>
Player's Last Name:	Jackson
Player's ID#:	<input type="text"/>

*Check **all** statistics to show in results*

Games played	<input type="checkbox"/>	Total rebounds	<input checked="" type="checkbox"/>	Assists	<input type="checkbox"/>
Minutes	<input type="checkbox"/>	Off. rebounds	<input type="checkbox"/>	Steals	<input type="checkbox"/>
Points	<input checked="" type="checkbox"/>	Def. rebounds	<input type="checkbox"/>	Blocks	<input type="checkbox"/>
FG made	<input type="checkbox"/>	FG attempts	<input type="checkbox"/>	FG %	<input type="checkbox"/>
FT made	<input type="checkbox"/>	FT attempts	<input type="checkbox"/>	FT %	<input type="checkbox"/>
3PT made	<input type="checkbox"/>	3PT attempts	<input type="checkbox"/>	3PT %	<input checked="" type="checkbox"/>
Personal fouls	<input type="checkbox"/>	Turnovers	<input type="checkbox"/>		

*Check **all** years to show in results*

All	<input type="checkbox"/>	1997	<input type="checkbox"/>	1989	<input type="checkbox"/>
Career	<input type="checkbox"/>	1996	<input type="checkbox"/>	1988	<input type="checkbox"/>
2003	<input checked="" type="checkbox"/>	1995	<input type="checkbox"/>	1987	<input type="checkbox"/>
2002	<input checked="" type="checkbox"/>	1994	<input type="checkbox"/>	1986	<input type="checkbox"/>
2001	<input checked="" type="checkbox"/>	1993	<input type="checkbox"/>	1985	<input type="checkbox"/>
2000	<input checked="" type="checkbox"/>	1992	<input type="checkbox"/>	1984	<input type="checkbox"/>
1999	<input type="checkbox"/>	1991	<input type="checkbox"/>	1983	<input type="checkbox"/>
1998	<input type="checkbox"/>	1990	<input type="checkbox"/>	1982	<input type="checkbox"/>

Select data set

Per Game

Per 48 Minutes



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Here is the corresponding output.

Player	Year	Team	PTS	REB	3PTP
Mark Jackson	2000	TOR	12.2	4.9	34.6
Mark Jackson	2000	NYK	10.5	7.3	31
Mark Jackson	2001	NYK	14.0	6.3	40.5
Mark Jackson	2002	UTA	12.6	5.9	28.4
Mark Jackson	2003	HOU	8.8	6.0	17.1
Jaren Jackson	2000	SAS	16.2	5.4	38.9
Jaren Jackson	2001	ORL	12.9	5.7	35
Jim Jackson	2000	ATL	21.2	7.0	42.1
Jim Jackson	2000	CLE	16.9	6.1	23.8
Jim Jackson	2001	MIA	15.5	7.7	46.9
Jim Jackson	2002	SAC	17.8	9.7	45.1
Jim Jackson	2003	HOU	15.9	7.5	40
Bobby Jackson	2000	SAC	16.5	7.1	37.5
Bobby Jackson	2001	SAC	24.7	6.9	36.1
Bobby Jackson	2002	SAC	25.7	6.3	37.9
Bobby Jackson	2003	SAC	27.9	7.1	37
Marc Jackson	2000	GSW	21.6	12.2	21.7
Marc Jackson	2001	GSW	23.8	12.1	0
Marc Jackson	2001	MIN	14.9	12.6	0
Marc Jackson	2002	MIN	19.6	10.3	100
Marc Jackson	2003	PHI	16.6	10.1	0
Stephen Jackson	2000	NJN	18.4	6.0	33.6
Stephen Jackson	2001	SAS	18.9	5.3	25
Stephen Jackson	2002	SAS	20.1	6.1	32
Stephen Jackson	2003	ATL	23.6	6.0	34
Jermaine Jackson	2001	TOR	9.8	4.5	50
Jermaine Jackson	2002	TOR	11.3	4.0	11.1
Jermaine Jackson	2002	ATL	9.7	5.6	0



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If you take a look at the output pages, you will notice that the Player Attribute and Team attribute are hyperlinked. By clicking on any player name, or team code, you can get more information about that player or team. For example, after the preceding query, assume you wanted to get more information on Bobby Jackson. Simply click his name and you will proceed to his information page.



Bobby Jackson

Name:	Bobby Jackson
ID:	3191
Height:	73
Weight:	185
Birth Date:	Mar 13, 1973
Birth Place:	Salisbury, North Carolina
College:	Minnesota
Position:	Shooting Guard

Players Statistics

Player	Year	Team	G	MIN	PTS	REB	OREB	DREB	AST	STL	BLK	FGM	FGA	FGP	FTM	FTA	FTP	3PTM	3PTA	3PTP	PF	TO
Bobby Jackson	1997	DEN	68	30	11.6	4.4	1.2	3.3	4.7	1.5	0.2	4.6	11.6	39.2	2.2	2.7	81.4	0.3	1.2	25.9	2.4	2.7
Bobby Jackson	1998	MIN	50	18.8	7.1	2.7	0.9	1.8	3.3	0.8	0.1	2.8	7	40.5	1.2	1.6	77.2	0.2	0.5	37	1.5	1.5
Bobby Jackson	1999	MIN	73	14.2	5.1	2.1	0.7	1.4	2.4	0.7	0.1	1.9	4.7	40.5	1	1.3	77.6	0.2	0.6	28.3	1.6	0.8
Bobby Jackson	2000	SAC	79	20.9	7.2	3.1	0.9	2.2	2	1.1	0.1	2.9	6.7	43.9	0.8	1.1	73.9	0.5	1.3	37.5	1.8	1.3
Bobby Jackson	2001	SAC	81	21.6	11.1	3.1	1	2.1	2	0.9	0.1	4.1	9.3	44.3	1.8	2.3	81	1	2.7	36.1	1.8	1.2
Bobby Jackson	2002	SAC	59	28.4	15.2	3.7	1	2.8	3.1	1.2	0.1	5.8	12.4	46.5	2.1	2.5	84.6	1.5	4	37.9	2.1	1.8
Bobby Jackson	2003	SAC	50	23.7	13.8	3.5	1.1	2.4	2.1	1	0.2	5.3	11.8	44.4	1.6	2.2	75.2	1.6	4.4	37	2.1	1.3
Bobby Jackson	CAR	CAR	482	22.3	10	3.2	1	2.3	2.7	1	0.1	3.9	9	43	1.6	2	79.9	0.7	2.1	35.3	1.9	1.5



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From here, it is possible to see all his vital statistics, as well as the different teams he has played for over the years. For information on the Sacramento Kings for example, simply click SAC in the Team attribute.



Kings

Team Name:	Sacramento Kings
Team Code:	SAC
Location:	Sacramento, CA
Stadium:	The Arco Arena
Division:	Pacific
Conference:	Western
Year of Origin:	1948

Players by Year

Player	Year
Gerald Wallace	2003
Rodney Buford	2003
Tony Massenburg	2003
Anthony Peeler	2003
Bobby Jackson	2003
Vlade Divac	2003

As you can see, this page includes team statistics AND a list of all player who have ever played for that team.



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ii. Show me Kevin Garnett's per game averages progression over his entire career.

For this query, enter "Kevin" (or "kevin") into the Player's First Name field. "Garnett" into the Player's Last Name field. Check all boxes in the statistics area, and all years in the years area. Make sure per game is also selected. (Note: This particular query can also be achieved by clicking Kevin Garnett's name whenever it appears in an output table.)

<i>Enter part or all of player name and/or player ID #</i>	
Player's First Name:	<input type="text" value="Kevin"/>
Player's Last Name:	<input type="text" value="Garnett"/>
Player's ID#:	<input type="text"/>

<i>Check all statistics to show in results</i>					
Games played	<input checked="" type="checkbox"/>	Total rebounds	<input checked="" type="checkbox"/>	Assists	<input checked="" type="checkbox"/>
Minutes	<input checked="" type="checkbox"/>	Off rebounds	<input checked="" type="checkbox"/>	Steals	<input checked="" type="checkbox"/>
Points	<input checked="" type="checkbox"/>	Def. rebounds	<input checked="" type="checkbox"/>	Blocks	<input checked="" type="checkbox"/>
FG made	<input checked="" type="checkbox"/>	FG attempts	<input checked="" type="checkbox"/>	FG %	<input checked="" type="checkbox"/>
FT made	<input checked="" type="checkbox"/>	FT attempts	<input checked="" type="checkbox"/>	FT %	<input checked="" type="checkbox"/>
3PT made	<input checked="" type="checkbox"/>	3PT attempts	<input checked="" type="checkbox"/>	3PT %	<input checked="" type="checkbox"/>
Personal fouls	<input checked="" type="checkbox"/>	Turnovers	<input checked="" type="checkbox"/>		

<i>Check all years to show in results</i>			
All	<input checked="" type="checkbox"/>	1997	<input type="checkbox"/>
Career	<input type="checkbox"/>	1996	<input type="checkbox"/>
2003	<input type="checkbox"/>	1995	<input type="checkbox"/>
2002	<input type="checkbox"/>	1994	<input type="checkbox"/>
2001	<input type="checkbox"/>	1993	<input type="checkbox"/>
2000	<input type="checkbox"/>	1992	<input type="checkbox"/>
1999	<input type="checkbox"/>	1991	<input type="checkbox"/>
1998	<input type="checkbox"/>	1990	<input type="checkbox"/>
		1989	<input type="checkbox"/>
		1988	<input type="checkbox"/>
		1987	<input type="checkbox"/>
		1986	<input type="checkbox"/>
		1985	<input type="checkbox"/>
		1984	<input type="checkbox"/>
		1983	<input type="checkbox"/>
		1982	<input type="checkbox"/>

<i>Select data set</i>	
Per Game	<input checked="" type="radio"/>
Per 48 Minutes	<input type="radio"/>



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And the corresponding output.



Player	Year	Team	G	MIN	PTS	REB	OREB	DREB	AST	STL	BLK	FGM	FGA	FGP	FTM	FTA	FTP	3PTM	3PTA	3PTP	PF	TO
Kevin Garnett	1995	MIN	80	28.7	10.4	6.3	2.2	4.1	1.8	1.1	1.6	4.5	9.2	49.1	1.3	1.9	70.5	0.1	0.4	28.6	2.4	1.4
Kevin Garnett	1996	MIN	77	38.9	17	8	2.5	5.6	3.1	1.4	2.1	7.1	14.3	49.9	2.7	3.5	75.4	0.1	0.3	28.6	2.6	2.3
Kevin Garnett	1997	MIN	82	39.3	18.5	9.6	2.7	6.9	4.2	1.7	1.8	7.7	15.8	49.1	3	4.1	73.8	0	0.2	18.8	2.7	2.3
Kevin Garnett	1998	MIN	47	37.9	20.8	10.4	3.5	6.9	4.3	1.7	1.8	8.8	19.2	46	3.1	4.4	70.4	0.1	0.3	28.6	3.2	2.9
Kevin Garnett	1999	MIN	81	40	22.9	11.8	2.8	9.1	5	1.5	1.6	9.4	18.8	49.7	3.8	5	76.5	0.4	1	37	2.5	3.3
Kevin Garnett	2000	MIN	81	39.5	22	11.4	2.7	8.7	5	1.4	1.8	8.7	18.2	47.7	4.4	5.8	76.5	0.2	0.8	28.8	2.5	2.8
Kevin Garnett	2001	MIN	81	39.2	21.2	12.1	3	9.1	5.2	1.2	1.6	8.1	17.3	47	4.4	5.5	80.1	0.5	1.4	31.9	2.3	2.8
Kevin Garnett	2002	MIN	82	40.5	23	13.4	3	10.5	6	1.4	1.6	9.1	18.1	50.2	4.6	6.1	75.1	0.2	0.9	28.2	2.4	2.8
Kevin Garnett	2003	MIN	82	39.4	24.2	13.9	3	10.9	5	1.5	2.2	9.8	19.7	49.9	4.5	5.7	79.1	0.1	0.5	25.6	2.5	2.6
Kevin Garnett	CAR	CAR	715	38.2	20.1	11	2.8	8.2	4.5	1.4	1.8	8.1	16.7	48.8	3.6	4.8	76.1	0.2	0.7	30.1	2.5	2.6

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C. Player Comparison – <http://www.mgourlay.com/basketball/playercompare.php>

Use this page to retrieve comparative information between 2,3 or 4 different players. On this page you must enter the full name of the players. The rest is similar to the Player Statistics page.

Some example queries would be:

- i. Show me the comparative offensive and defensive rebounds per game between Kevin Garnett and Tim Duncan in 2001 and 2002.

<i>Enter all of players first AND last name</i>	
Player 1 First Name:	<input type="text" value="Kevin"/>
Player 1 Last Name:	<input type="text" value="Garnett"/>
Player 2 First Name:	<input type="text" value="Tim"/>
Player 2 Last Name:	<input type="text" value="Duncan"/>
Player 3 First Name:	<input type="text"/>
Player 3 Last Name:	<input type="text"/>
Player 4 First Name:	<input type="text"/>
Player 4 Last Name:	<input type="text"/>

<i>Check all statistics to show in results</i>					
Games played	<input type="checkbox"/>	Total rebounds	<input type="checkbox"/>	Assists	<input type="checkbox"/>
Minutes	<input type="checkbox"/>	Off. rebounds	<input checked="" type="checkbox"/>	Steals	<input type="checkbox"/>
Points	<input type="checkbox"/>	Def. rebounds	<input checked="" type="checkbox"/>	Blocks	<input type="checkbox"/>
FG made	<input type="checkbox"/>	FG attempts	<input type="checkbox"/>	FG %	<input type="checkbox"/>
FT made	<input type="checkbox"/>	FT attempts	<input type="checkbox"/>	FT %	<input type="checkbox"/>
3PT made	<input type="checkbox"/>	3PT attempts	<input type="checkbox"/>	3PT %	<input type="checkbox"/>
Personal fouls	<input type="checkbox"/>	Turnovers	<input type="checkbox"/>		

<i>Check all years to show in results</i>					
All	<input type="checkbox"/>	1997	<input type="checkbox"/>	1989	<input type="checkbox"/>
Career	<input type="checkbox"/>	1996	<input type="checkbox"/>	1988	<input type="checkbox"/>
2003	<input checked="" type="checkbox"/>	1995	<input type="checkbox"/>	1987	<input type="checkbox"/>
2002	<input type="checkbox"/>	1994	<input type="checkbox"/>	1986	<input type="checkbox"/>
2001	<input checked="" type="checkbox"/>	1993	<input type="checkbox"/>	1985	<input type="checkbox"/>
2000	<input type="checkbox"/>	1992	<input type="checkbox"/>	1984	<input type="checkbox"/>
1999	<input type="checkbox"/>	1991	<input type="checkbox"/>	1983	<input type="checkbox"/>
1998	<input type="checkbox"/>	1990	<input type="checkbox"/>	1982	<input type="checkbox"/>

Select data set

Per Game

Per 48 Minutes



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For this query, enter Kevin for the Player 1 First Name and Garnett for the Player 1 Last Name. Enter Tim for the player 2 First Name and Duncan for the Player 2 Last Name. Check the Off. Rebounds and Def. Rebounds boxes as well as 2001 and 2002. Make sure that Per Game data is selected.

The data you've selected will be arranged top and bottom so you can easily see the corresponding statistics next to each other.



Player	Year	Team	OREB	DREB
Tim Duncan	2003	SAS	3.3	9.2
Kevin Garnett	2003	MIN	3	10.9
Tim Duncan	2001	SAS	3.3	9.4
Kevin Garnett	2001	MIN	3	9.1

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ii. Who had more points per 48 in 2003, Kobe Bryant, Tim Duncan, Dirk Nowitzki, or Ray Allen?

For this query, enter each player's name into the corresponding Player Name field. Check off the points box, as well as 2003 and Per 48 Minutes.

<i>Enter all of players first AND last name</i>	
Player 1 First Name:	<input type="text" value="Kobe"/>
Player 1 Last Name:	<input type="text" value="Bryant"/>
Player 2 First Name:	<input type="text" value="Dirk"/>
Player 2 Last Name:	<input type="text" value="Nowitzki"/>
Player 3 First Name:	<input type="text" value="Ray"/>
Player 3 Last Name:	<input type="text" value="Allen"/>
Player 4 First Name:	<input type="text" value="Tim"/>
Player 4 Last Name:	<input type="text" value="Duncan"/>

<i>Check all statistics to show in results</i>					
Games played	<input type="checkbox"/>	Total rebounds	<input type="checkbox"/>	Assists	<input type="checkbox"/>
Minutes	<input type="checkbox"/>	Off. rebounds	<input type="checkbox"/>	Steals	<input type="checkbox"/>
Points	<input checked="" type="checkbox"/>	Def. rebounds	<input type="checkbox"/>	Blocks	<input type="checkbox"/>
FG made	<input type="checkbox"/>	FG attempts	<input type="checkbox"/>	FG %	<input type="checkbox"/>
FT made	<input type="checkbox"/>	FT attempts	<input type="checkbox"/>	FT %	<input type="checkbox"/>
3PT made	<input type="checkbox"/>	3PT attempts	<input type="checkbox"/>	3PT %	<input type="checkbox"/>
Personal fouls	<input type="checkbox"/>	Turnovers	<input type="checkbox"/>		

<i>Check all years to show in results</i>					
All	<input type="checkbox"/>	1997	<input type="checkbox"/>	1989	<input type="checkbox"/>
Career	<input type="checkbox"/>	1996	<input type="checkbox"/>	1988	<input type="checkbox"/>
2003	<input checked="" type="checkbox"/>	1995	<input type="checkbox"/>	1987	<input type="checkbox"/>
2002	<input type="checkbox"/>	1994	<input type="checkbox"/>	1986	<input type="checkbox"/>
2001	<input type="checkbox"/>	1993	<input type="checkbox"/>	1985	<input type="checkbox"/>
2000	<input type="checkbox"/>	1992	<input type="checkbox"/>	1984	<input type="checkbox"/>
1999	<input type="checkbox"/>	1991	<input type="checkbox"/>	1983	<input type="checkbox"/>
1998	<input type="checkbox"/>	1990	<input type="checkbox"/>	1982	<input type="checkbox"/>
<i>Select data set</i>					
Per Game	<input type="radio"/>				
Per 48 Minutes	<input checked="" type="radio"/>				



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Here is the corresponding output.



Player	Year	Team	PTS
Dirk Nowitzki	2003	DAL	27.6
Tim Duncan	2003	SAS	29.2
Kobe Bryant	2003	LAL	30.6
Ray Allen	2003	SEA	28.8

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D. Statistics Search – <http://www.mgourlay.com/basketball/statsearch.php>

This is perhaps the single most powerful page of the DB Ball Z application. You can use this page when you are interested in putting constraints on certain statistics or sorting players according to a certain statistic in a given year.

Some example queries would be:

i. Have any players averaged over 40 minutes of playing time per game in a year, but less than 10 points per game?

For this query, check the All box in the years area. Check Minutes/Game and set the operator to >. Set the value to 40. (You may select sort, this will sort the data by who has the most minutes per game.) Next, check Points/Game and set the operator to <. Set the value to 10, and submit your query.

Check all years to show in results					
All	<input checked="" type="checkbox"/>	1997	<input type="checkbox"/>	1989	<input type="checkbox"/>
Career	<input type="checkbox"/>	1996	<input type="checkbox"/>	1988	<input type="checkbox"/>
2003	<input type="checkbox"/>	1995	<input type="checkbox"/>	1987	<input type="checkbox"/>
2002	<input type="checkbox"/>	1994	<input type="checkbox"/>	1986	<input type="checkbox"/>
2001	<input type="checkbox"/>	1993	<input type="checkbox"/>	1985	<input type="checkbox"/>
2000	<input type="checkbox"/>	1992	<input type="checkbox"/>	1984	<input type="checkbox"/>
1999	<input type="checkbox"/>	1991	<input type="checkbox"/>	1983	<input type="checkbox"/>
1998	<input type="checkbox"/>	1990	<input type="checkbox"/>	1982	<input type="checkbox"/>

Use	Category	Operator	Value	Sort
<input type="checkbox"/>	Games Played	>	0	<input checked="" type="radio"/>
<input checked="" type="checkbox"/>	Minutes/Game	>	40	<input type="radio"/>
<input checked="" type="checkbox"/>	Points/Game	<	10	<input type="radio"/>
<input type="checkbox"/>	Rebounds/Game	>	0	<input type="radio"/>
<input type="checkbox"/>	Off. Reb/Game	>	0	<input type="radio"/>
<input type="checkbox"/>	Def. Reb/Game	>	0	<input type="radio"/>
<input type="checkbox"/>	Assists/Game	>	0	<input type="radio"/>
<input type="checkbox"/>	Steals/Game	>	0	<input type="radio"/>
<input type="checkbox"/>	Blocks/Game	>	0	<input type="radio"/>

Use	Category	Operator	Value	Sort
<input type="checkbox"/>	FG Made/Game	>	0	<input type="radio"/>
<input type="checkbox"/>	FG Att./Game	>	0	<input type="radio"/>
<input type="checkbox"/>	FG %	>	0	<input type="radio"/>
<input type="checkbox"/>	FT Made/Game	>	0	<input type="radio"/>
<input type="checkbox"/>	FT Att./ Game	>	0	<input type="radio"/>
<input type="checkbox"/>	FT %	>	0	<input type="radio"/>
<input type="checkbox"/>	3's Made/Game	>	0	<input type="radio"/>
<input type="checkbox"/>	3's Att./Game	>	0	<input type="radio"/>
<input type="checkbox"/>	3PT %	>	0	<input type="radio"/>
<input type="checkbox"/>	Fouls/Game	>	0	<input type="radio"/>
<input type="checkbox"/>	Turnovers/Game	>	0	<input type="radio"/>

Submit Your Query Start Over



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As you can see, Dennis Rodman in 1991 is the only player to accomplish this feat. Interesting NBA trivia!



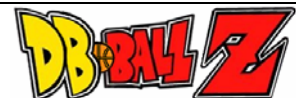
Player Name	Year	Team	MIN	PTS
Dennis Rodman	1991	DET	40.3	9.8

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ii. What player with < 20 minutes per game in any year from 1995 to 1998 had the most steals/game?

For this query, check the years 1995, 1996, 1997 and 1998. Check Minutes/Game and set the operator to < and the value to 20. Check Steals/Game and set the operator to > and the value to 0. Click the sort button next to Steals/Game and submit your query.

Check <i>all</i> years to show in results					
All	<input type="checkbox"/>	1997	<input checked="" type="checkbox"/>	1989	<input type="checkbox"/>
Career	<input type="checkbox"/>	1996	<input checked="" type="checkbox"/>	1988	<input type="checkbox"/>
2003	<input type="checkbox"/>	1995	<input checked="" type="checkbox"/>	1987	<input type="checkbox"/>
2002	<input type="checkbox"/>	1994	<input type="checkbox"/>	1986	<input type="checkbox"/>
2001	<input type="checkbox"/>	1993	<input type="checkbox"/>	1985	<input type="checkbox"/>
2000	<input type="checkbox"/>	1992	<input type="checkbox"/>	1984	<input type="checkbox"/>
1999	<input type="checkbox"/>	1991	<input type="checkbox"/>	1983	<input type="checkbox"/>
1998	<input checked="" type="checkbox"/>	1990	<input type="checkbox"/>	1982	<input type="checkbox"/>

Use	Category	Operator	Value	Sort
<input type="checkbox"/>	Games Played	>	0	<input type="radio"/>
<input checked="" type="checkbox"/>	Minutes/Game	<	20	<input type="radio"/>
<input type="checkbox"/>	Points/Game	<		<input type="radio"/>
<input type="checkbox"/>	Rebounds/Game	>	0	<input type="radio"/>
<input type="checkbox"/>	Off. Reb/Game	>	0	<input type="radio"/>
<input type="checkbox"/>	Def. Reb/Game	>	0	<input type="radio"/>
<input type="checkbox"/>	Assists/Game	>	0	<input type="radio"/>
<input checked="" type="checkbox"/>	Steals/Game	>	1	<input checked="" type="radio"/>
<input type="checkbox"/>	Blocks/Game	>	0	<input type="radio"/>

Use	Category	Operator	Value	Sort
<input type="checkbox"/>	FG Made/Game	>	0	<input type="radio"/>
<input type="checkbox"/>	FG Att./Game	>	0	<input type="radio"/>
<input type="checkbox"/>	FG %	>	0	<input type="radio"/>
<input type="checkbox"/>	FT Made/Game	>	0	<input type="radio"/>
<input type="checkbox"/>	FT Att./ Game	>	0	<input type="radio"/>
<input type="checkbox"/>	FT %	>	0	<input type="radio"/>
<input type="checkbox"/>	3's Made/Game	>	0	<input type="radio"/>
<input type="checkbox"/>	3's Att./Game	>	0	<input type="radio"/>
<input type="checkbox"/>	3PT %	>	0	<input type="radio"/>
<input type="checkbox"/>	Fouls/Game	>	0	<input type="radio"/>
<input type="checkbox"/>	Turnovers/Game	>	0	<input type="radio"/>

Submit Your Query Start Over



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Dan Glaser



Here you can see any player who averaged less than 20 minutes per game in any year 1995-1998, sorted by their avg steals/game.



Player Name	Year	Team	MIN	STL
Joe Wolf	1995	CHA	18	2
Tom Chambers	1997	PHI	10	2
Jimmy King	1996	DEN	11	1.5
Ruben Nembhard	1996	POR	9.5	1.5
Joe Stephens	1996	HOU	4.5	1.5
Todd Day	1997	MLA	13.8	1.4
Jerome Kersey	1997	SEA	19.4	1.4
Eric Murdock	1997	MLA	17	1.3
Greg Anthony	1998	POR	16.1	1.3
Aaron McKie	1998	PHI	19.2	1.3
Eric Snow	1997	PHI	18	1.3
Elliot Perry	1996	MIL	19.5	1.2
Jon Barry	1998	SAC	17.1	1.2
Erick Strickland	1998	DAL	17.2	1.2
Muggsy Bogues	1998	GSW	19.8	1.2
Stacey Augmon	1998	POR	18.2	1.2
Rodrick Rhodes	1997	HOU	18.5	1.1
Richard Dumas	1995	PHI	19	1.1
Randy Brown	1996	CHI	14.7	1.1
Dee Brown	1997	BOS	19.8	1.1
Stephen Howard	1996	SAS	9.9	1.1
Darrick Martin	1995	VAN	16.8	1.1
Andrew DeClercq	1997	BOS	18.8	1.1



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iii. In the last 20 years, who had the highest point per game average over 1 year, and what was his FG% and how many games did he play in that year?

For this query, select the All box in the year area. Check Games Played, and set the operator to > and the value to 0. Select Points/Game and set the operator to > and the value to 0. Click the sort button. Check the FG% category and set the operator to > and the value to 0. Submit your query.

Check all years to show in results					
All	<input checked="" type="checkbox"/>	1997	<input type="checkbox"/>	1989	<input type="checkbox"/>
Career	<input type="checkbox"/>	1996	<input type="checkbox"/>	1988	<input type="checkbox"/>
2003	<input type="checkbox"/>	1995	<input type="checkbox"/>	1987	<input type="checkbox"/>
2002	<input type="checkbox"/>	1994	<input type="checkbox"/>	1986	<input type="checkbox"/>
2001	<input type="checkbox"/>	1993	<input type="checkbox"/>	1985	<input type="checkbox"/>
2000	<input type="checkbox"/>	1992	<input type="checkbox"/>	1984	<input type="checkbox"/>
1999	<input type="checkbox"/>	1991	<input type="checkbox"/>	1983	<input type="checkbox"/>
1998	<input type="checkbox"/>	1990	<input type="checkbox"/>	1982	<input type="checkbox"/>

Use	Category	Operator	Value	Sort
<input checked="" type="checkbox"/>	Games Played	>	0	○
<input type="checkbox"/>	Minutes/Game	<		○
<input checked="" type="checkbox"/>	Points/Game	>	0	⊙
<input type="checkbox"/>	Rebounds/Game	>	0	○
<input type="checkbox"/>	Off. Reb/Game	>	0	○
<input type="checkbox"/>	Def. Reb/Game	>	0	○
<input type="checkbox"/>	Assists/Game	>	0	○
<input type="checkbox"/>	Steals/Game	>	1	○
<input type="checkbox"/>	Blocks/Game	>	0	○

Use	Category	Operator	Value	Sort
<input type="checkbox"/>	FG Made/Game	>	0	○
<input type="checkbox"/>	FG Att./Game	>	0	○
<input checked="" type="checkbox"/>	FG %	>	0	○
<input type="checkbox"/>	FT Made/Game	>	0	○
<input type="checkbox"/>	FT Att./ Game	>	0	○
<input type="checkbox"/>	FT %	>	0	○
<input type="checkbox"/>	3's Made/Game	>	0	○
<input type="checkbox"/>	3's Att./Game	>	0	○
<input type="checkbox"/>	3PT %	>	0	○
<input type="checkbox"/>	Fouls/Game	>	0	○
<input type="checkbox"/>	Turnovers/Game	>	0	○

Submit Your Query Start Over



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Dan Glaser



This large resulting relation shows Michael Jordan's 1986 season at the top with 37.1 ppg, 48.2 FGP and 82 games played.



Player Name	Year	Team	G	PTS	FGP
Michael Jordan	1986	CHI	82	37.1	48.2
Michael Jordan	1987	CHI	82	35	53.5
Michael Jordan	1989	CHI	82	33.6	52.7
Michael Jordan	1992	CHI	78	32.6	49.5
Michael Jordan	1988	CHI	81	32.5	53.8
Tracy McGrady	2002	ORL	75	32.1	45.7
Michael Jordan	1990	CHI	82	31.5	53.9
Allen Iverson	2001	PHI	60	31.4	39.8
Allen Iverson	2000	PHI	71	31.1	42
Karl Malone	1989	UTA	82	31	56.2
Dominique Wilkins	1987	ATL	78	30.7	46.5
Michael Jordan	1995	CHI	82	30.4	49.5
Dominique Wilkins	1985	ATL	78	30.3	46.8
Michael Jordan	1991	CHI	80	30.1	51.9
Kobe Bryant	2002	LAL	82	30	45.1
Dominique Wilkins	1992	ATL	71	29.9	46.8
David Robinson	1993	SAS	80	29.8	50.7

III. Limitations

- A. *Player Domain* – The Yahoo! Sports database only includes player statistics for players that retired after 2000. Any database that includes all-time NBA stats would not be free and would be beyond the scope of this project. As such, all players that retired after 2000 have full career statistics in the database.
- B. *Nested Queries* – PHP does not have built in support for nested queries. Fortunately, some PHP workarounds were used to allow nesting of queries by parsing intermediate results. This prevents *very* complex SQL queries from being done, but still allows excellent functionality.

IV. Accomplishments and Conclusions

- A. *PERL Proficiency* – We used PERL to extract data from sports.yahoo.com. There are over 3500 players and over 7000 player years worth of data on the site and obtaining this information for use in our database would have been impossible without the use of PERL to populate our database. Most sports databases charges hundreds or thousands of dollars a month to access. Using a free source and making it more powerful with database functionality was accomplished with out project.
- B. *PHP Proficiency* – The user interface pages were most comprised of PHP and some HTML. PHP was used to access the MySQL database, extract data, make queries, and print results. We became proficient in data presentation using PHP to allow the user a friendly, yet powerful interface to make queries.
- C. *Ease of Use* – No SQL knowledge is necessary to make queries with this database. Simple and easy to use forms allow the user to choose exactly what data he/she wants to see and how they wish to have the data sorted or filtered.
- D. *Query Power* – 3 main types of queries can be made, individual player statistics lookup, player comparisons, and statistics search. Each query type allows the use to choose multiple options of what they want to see when making their query, so they get exactly what they want. The breadth and depth of options available allow many great types of queries and are a definite strength of this project.
- E. *Real World Utility* – We have found that this database has significant real world usability. When people are looking for specific stats, they can use this database to get the information, quickly, easily, and reliably. We have found that the variety of queries allowed by our database is one of the biggest strengths.