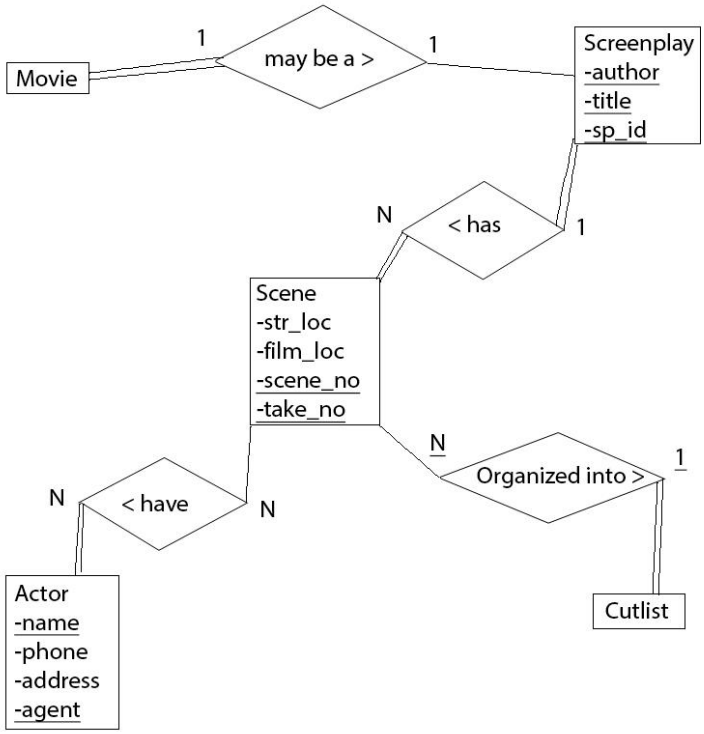
COMP3005 A2 – Part 1

Problem 1



Movie		
title	year	movie_id

Screenplay		
title	author	sp_id

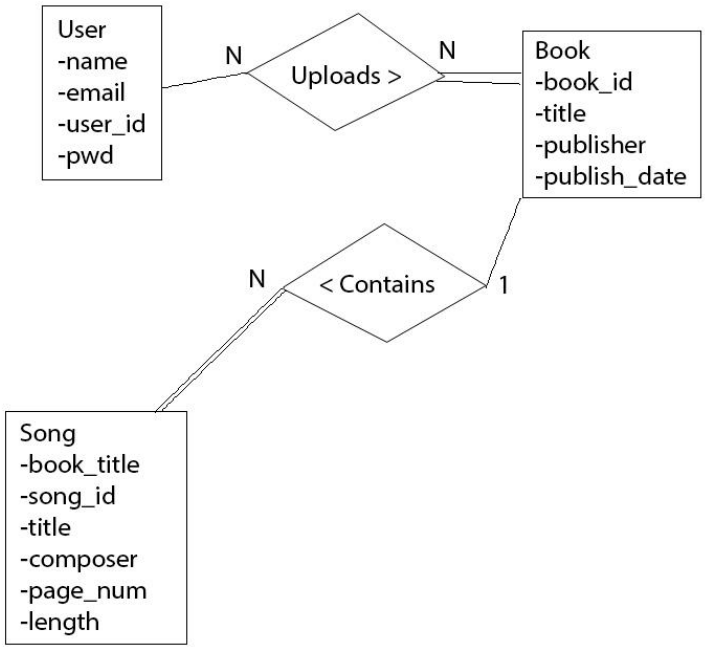
Scene				
story_loc	film_loc	scene_no	take_no	movie_id

Actor			
name	phone	address	agent

Acting_in	
actor_name	scene_no

Cutlist	
scene_no	take_no

Problem 2



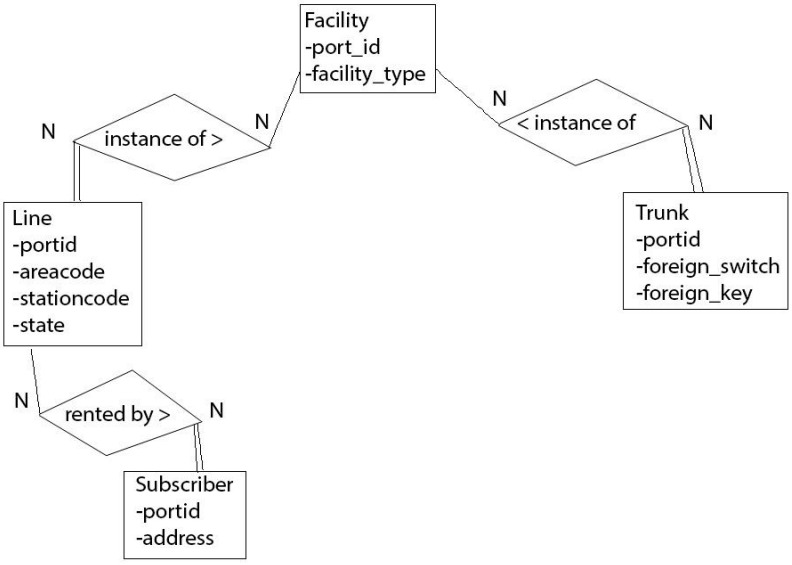
User			
name	email	password	user_id

Book			
id	title	publisher	publish_date

Song					
book_title	song_id	title	composer	page_num	length

Has_access	
user_id	book_id

Problem 3



Facility	
portid	facility_type

Line				
portid	areacode	officecode	stationcode	state

Trunk	
portid	foreign_switch

Treatments	
tcode	portid

Services	
scode	service

Service_subscribers	
line	service

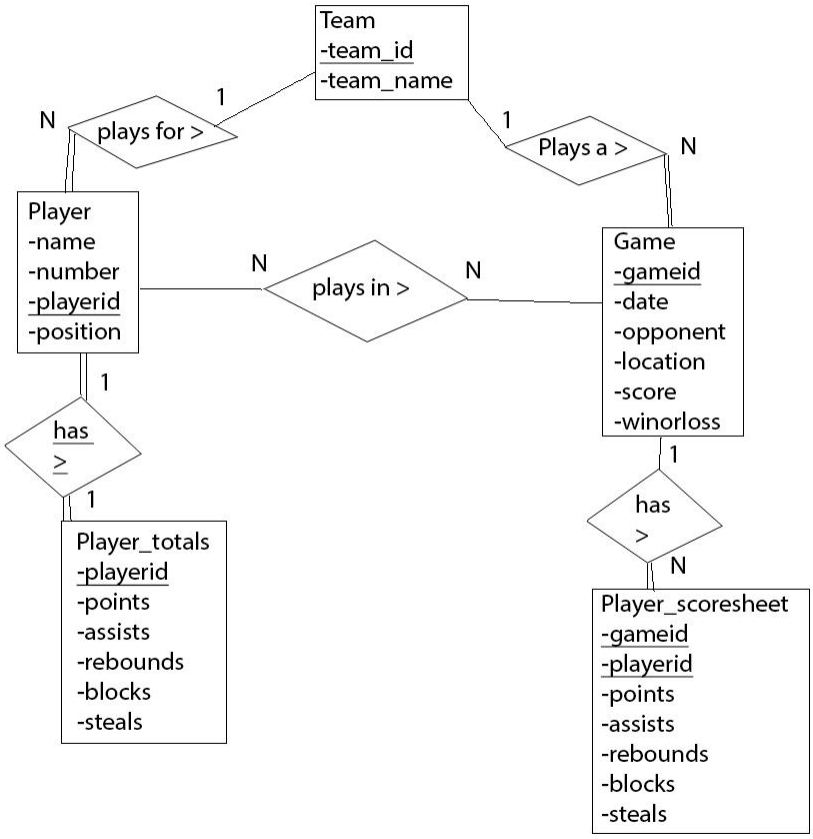
Subscribers		
portid	name	address

Trunk_channels		
portid	channel	state

Calls							
call_id	orig	term	och	tch	area	office	stn

Trunk_routes		
portid	area	office

Problem 4



Team	
team_id	team_name

Player			
name	number	player_id	position

Game					
gameid	date	opponent	location	score	winorloss

Player_totals					
playerid	points	assists	rebounds	blocks	steals

Player_scoresheet						
gameid	playerid	points	assists	rebounds	blocks	steals

Toronto Raptors Statbook

Background

This project is motivated by my own personal interests in the Toronto Raptors basketball team. There are many websites that track the stats of basketball players, but I will be mainly focusing on the website called “basketball-reference”. Basketball reference contains a massive amount of information on every player in the NBA. Basketball reference not only contains the averages of players’ points, assists, rebounds, etc. over seasons, but also stores information for each individual game that a player participated in as well as the statistics of the entire team for that game.

Application Requirements

The following describe what is required from the application.

R1.1) Provide a database table that catalogues the games that a team has played, providing the information such as the date, the team that was played against, whether it was a home or away game, the score of the game, and who won the game.

R1.2) Provide a database table that contains rows for each Raptors player contain that players position, how many points, assists, rebounds, blocks, and steals that player had in a specific game, as well as how many minutes they played in that game.

R1.3) My application should allow users to ask for a player and have a table returned with the rows containing the stats from every game that player played this season.

R1.4) My application should allow users to ask for a player and have a row containing their average stats in points, assists, rebounds, blocks, and steals returned.

R1.5) My application should allow users to ask for a game and have a table returned with the stats of each player that played in that game.

R1.6) The target size of the database would be 82 games, which would be how many games are played by a team in a regular NBA season, as well as up to 28 extra games for playoffs, depending on how many playoff games a team plays.

R1.7) The user should be able to ask for a player and have a row returned containing their average regular season stats subtracted from their average playoff stats in order to compare if a player over or underperformed in the playoffs, for example: -2.3 points, -0.4 assists, +1.7 rebounds, +0.8 blocks, +0.0 steals per game in the playoffs compared to the regular season.

R1.8) The user should be able to access this data through a web application built with a Django backend and a frontend built in some flavour of JavaScript such as jQuery or angularJS.

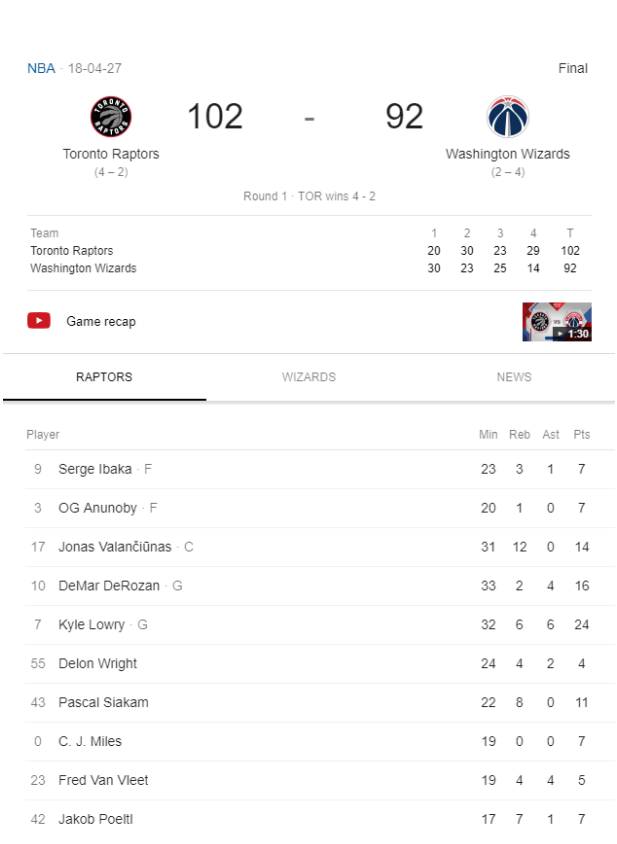
Due Diligence (Copyright Issues)

A quick Google search has revealed that while the actual NBA games are copyrighted, the statistics are facts which any person watching a game may obtain and facts are not copyrightable. Sports Reference LLC, the parent company of basketball-reference does contain a copyright “all rights reserved” at the bottom of their website.

CPY1.1) it is my belief that based on the notion that facts are not copyrightable and it is plausible that I could have simply watched each individual game and recorded the stats myself that it is not illegal for me to document these stats and store them in my database.

Sample Documents

Typical score sheet provided by nba.com



NBA · 18-04-27 Final

Toronto Raptors (4 – 2) 102 - 92 Washington Wizards (2 – 4)

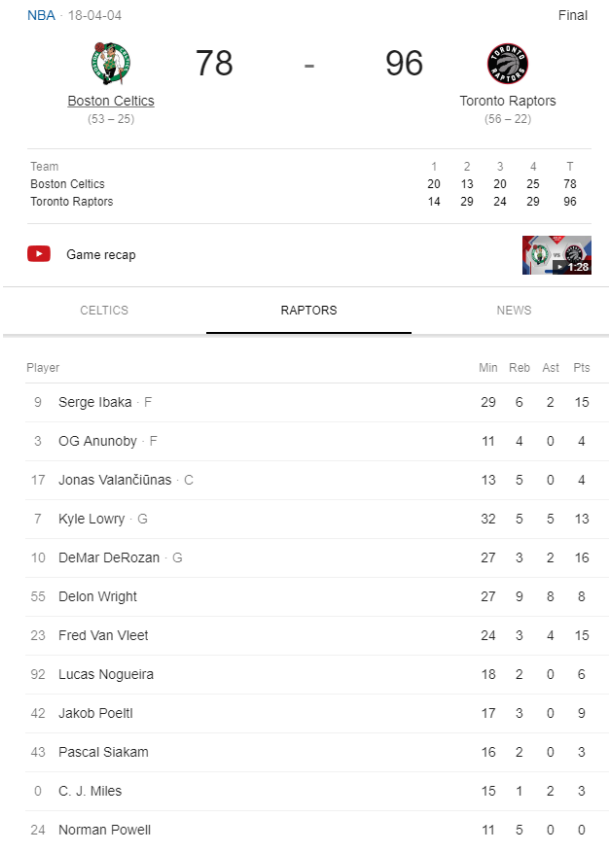
Round 1 · TOR wins 4 - 2

Team	1	2	3	4	T
Toronto Raptors	20	30	23	29	102
Washington Wizards	30	23	25	14	92

Game recap

RAPTORS WIZARDS NEWS

Player	Min	Reb	Ast	Pts
9 Serge Ibaka · F	23	3	1	7
3 OG Anunoby · F	20	1	0	7
17 Jonas Valančiūnas · C	31	12	0	14
10 DeMar DeRozan · G	33	2	4	16
7 Kyle Lowry · G	32	6	6	24
55 Delon Wright	24	4	2	4
43 Pascal Siakam	22	8	0	11
0 C. J. Miles	19	0	0	7
23 Fred Van Vleet	19	4	4	5
42 Jakob Poeltl	17	7	1	7



NBA · 18-04-04 Final

Boston Celtics (53 – 25) 78 - 96 Toronto Raptors (56 – 22)

Team	1	2	3	4	T
Boston Celtics	20	13	20	25	78
Toronto Raptors	14	29	24	29	96

Game recap

CELTICS RAPTORS NEWS

Player	Min	Reb	Ast	Pts
9 Serge Ibaka · F	29	6	2	15
3 OG Anunoby · F	11	4	0	4
17 Jonas Valančiūnas · C	13	5	0	4
7 Kyle Lowry · G	32	5	5	13
10 DeMar DeRozan · G	27	3	2	16
55 Delon Wright	27	9	8	8
23 Fred Van Vleet	24	3	4	15
92 Lucas Nogueira	18	2	0	6
42 Jakob Poeltl	17	3	0	9
43 Pascal Siakam	16	2	0	3
0 C. J. Miles	15	1	2	3
24 Norman Powell	11	5	0	0

Typical individual player sheet provided by basketball-reference.com

2018 Playoffs

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Rk	G	Date	Age	Tm		Opp		GS	MP	FG	FGA	FG%	3P	3PA	3P%	FT	FTA	FT%	ORB	DRB	TRB	AST	STL	BLK	TOV	PF	PTS	GmSc	+/-
1	1	2018-04-14	32-020	TOR		WAS	W (+8)	1	37:52	4	9	.444	1	4	.250	2	2	1.000	0	3	3	9	2	0	5	5	11	8.5	+8
2	2	2018-04-17	32-023	TOR		WAS	W (+11)	1	35:56	3	10	.300	1	8	.125	6	7	.857	0	7	7	12	1	0	3	3	13	14.1	+27
3	3	2018-04-20	32-026	TOR	@	WAS	L (-19)	1	34:49	6	14	.429	5	8	.625	2	2	1.000	1	3	4	8	3	0	5	5	19	14.8	-4
4	4	2018-04-22	32-028	TOR	@	WAS	L (-8)	1	38:48	7	15	.467	4	6	.667	1	1	1.000	0	7	7	5	2	0	2	5	19	14.9	-10
5	5	2018-04-25	32-031	TOR		WAS	W (+10)	1	37:37	7	13	.538	3	6	.500	0	2	.000	0	2	2	10	3	0	1	2	17	18.7	+11
6	6	2018-04-27	32-033	TOR	@	WAS	W (+10)	1	31:37	9	15	.600	3	7	.429	3	4	.750	1	5	6	6	1	0	2	2	24	21.3	0
7	7	2018-05-01	32-037	TOR		CLE	L (-1)	1	39:40	6	12	.500	3	6	.500	3	3	1.000	0	3	3	10	1	0	4	2	18	16.1	0
8	8	2018-05-03	32-039	TOR		CLE	L (-18)	1	33:47	7	10	.700	3	6	.500	4	5	.800	0	4	4	8	0	0	4	5	21	17.2	-18
9	9	2018-05-05	32-041	TOR	@	CLE	L (-2)	1	41:11	9	13	.692	4	8	.500	5	6	.833	0	3	3	7	2	0	5	2	27	23.1	-6
10	10	2018-05-07	32-043	TOR	@	CLE	L (-35)	1	29:30	2	7	.286	1	4	.250	0	0		0	4	4	10	0	0	0	2	5	8.3	-23