

Programming task description

Goal

Write a program that'll take one command-line argument, and print out a list of values.

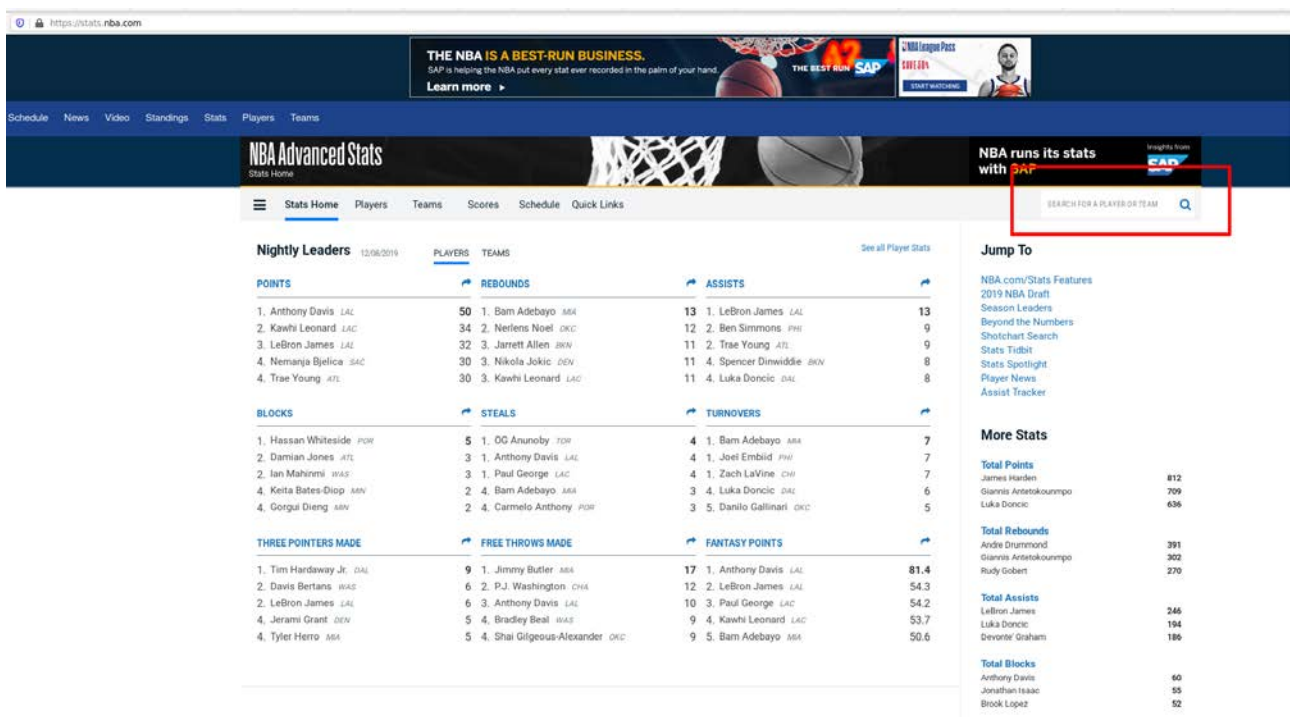
The argument should be the name of a NBA player (example "Luka Doncic")

The program should then print the 3-pointers average the player managed for each season data is available for, during the regular season, per 40 minutes.

Specifications

The program should perform a web scraping task: extract the information from a website. In this case, <https://stats.nba.com>

First the program needs to fetch the per-player page. It takes the name of the player from the command-line. Then you can perform a search on the stats.nba.com homepage:



The screenshot shows the NBA Advanced Stats website. A red box highlights the search bar in the top right corner, which contains the text "SEARCH FOR A PLAYER OR TEAM". The page displays various statistics and leaderboards for the 2019 NBA Draft.

NBA Advanced Stats
Stats Home

Nightly Leaders 12/06/2019

POINTS	REBOUNDS	ASSISTS
1. Anthony Davis LAL	50 1. Bam Adebayo MIA	13 1. LeBron James LAL
2. Kawhi Leonard LAC	34 2. Nerlens Noel OKC	12 2. Ben Simmons PHI
3. LeBron James LAL	32 3. Jarrett Allen BKN	11 2. Trae Young ATL
4. Nemanja Bjelica SAC	30 3. Nikola Jokic DEN	11 4. Spencer Dinwiddie BKN
4. Trae Young ATL	30 3. Kawhi Leonard LAC	11 4. Luka Doncic DAL

BLOCKS	STEALS	TURNOVERS
1. Hassan Whiteside POR	5 1. OG Anunoby TOR	4 1. Bam Adebayo MIA
2. Damian Jones ATL	3 1. Anthony Davis LAL	4 1. Joel Embiid PHI
2. Ian Mahinmi WAS	3 1. Paul George LAC	4 1. Zach LaVine CHI
4. Keita Bates-Diop MIN	2 4. Bam Adebayo MIA	3 4. Luka Doncic DAL
4. Gorgui Dieng MIN	2 4. Carmelo Anthony POR	3 5. Danilo Gallinari OKC

THREE POINTERS MADE	FREE THROWS MADE	FANTASY POINTS
1. Tim Hardaway Jr. DAL	9 1. Jimmy Butler MIA	17 1. Anthony Davis LAL
2. Davis Bertans WAS	6 2. P.J. Washington CHI	12 2. LeBron James LAL
3. LeBron James LAL	6 3. Anthony Davis LAL	10 3. Paul George LAC
4. Jerami Grant DEN	5 4. Bradley Beal WAS	9 4. Kawhi Leonard LAC
4. Tyler Herro MIA	5 4. Shai Gilgeous-Alexander OKC	9 5. Bam Adebayo MIA

Jump To

- NBA.com/Stats Features
- 2019 NBA Draft
- Season Leaders
- Beyond the Numbers
- Shotchart Search
- Stats Tidbit
- Stats Spotlight
- Player News
- Assist Tracker

More Stats

Total Points	
James Harden	812
Giannis Antetokounmpo	709
Luka Doncic	636

Total Rebounds	
Andre Drummond	391
Giannis Antetokounmpo	302
Rudy Gobert	270

Total Assists	
LeBron James	245
Luka Doncic	194
Devonte' Graham	186

Total Blocks	
Anthony Davis	60
Jonathan Isaac	55
Brook Lopez	52

You then get the page for that player:

https://stats.nba.com/player/1629029/

Schedule News Video Standings Stats Players Teams

NBA Advanced Stats
Stats Home / Player / Luka Doncic

NBA runs its stats with SAP

Stats Home Players Teams Scores Schedule Quick Links

SEARCH FOR A PLAYER OR TEAM

#77 Luka Doncic
P-G | DALLAS MAVERICKS

HT 6-7 WT 230 lbs POSITION Slovenia/Slovenia
AGE 20 YRS BORN 02/28/1999 DRAFT 2018 Rnd 1 Pick 3 EXP 1 yrs

PTS 30.0 REB 9.8 AST 9.2 PIE 21.7

Profile

SEASON TYPE Regular Season PER MODE Per Game

Traditional Splits

BY YEAR	TEAM	GP	MIN	PTS	FGM	FGA	FG%	3PM	3PA	3P%	FTM	FTA	FT%	OREB	DREB	REB	AST	TOV	STL	BLK	PF	FP	DD2	TD3	+/-
2019-20	DAL	23	33.4	30.0	9.7	20.3	47.6	3.0	9.5	32.0	7.6	9.3	81.4	1.3	8.5	9.8	9.2	4.8	1.3	0.1	2.4	55.2	15	7	6.0
2018-19	DAL	72	32.2	21.2	7.8	16.5	42.7	2.3	7.1	32.7	4.8	6.7	71.3	1.2	6.6	7.8	6.0	3.4	1.1	0.3	1.9	40.3	24	8	-1.6

Advanced Splits

BY YEAR	TEAM	GP	MIN	OFFRTG	DEFRTG	NETRTG	AST%	AST/TO	AST RATIO	OREB%	DREB%	REB%	TO RATIO	EFG%	TS%	USG%	PACE	PIE
2019-20	DAL	23	33.4	117.3	109.5	7.8	48.4	2.01	24.3	3.9	23.1	13.8	12.1	55.2	61.5	35.6	101.17	21.7
2018-19	DAL	72	32	107.6	110.6	-3.1	31.7	1.74	20.7	3.6	19.8	11.7	11.9	49.7	54.5	29.6	100.99	14.9

And then we're interested in the 3-pointers average traditional split:

Profile

SEASON TYPE Regular Season PER MODE Per 40 Minutes

Traditional Splits

BY YEAR	TEAM	GP	MIN	PTS	FGM	FGA	FG%	3PM	3PA	3P%	FTM	FTA	FT%	OREB	DREB	REB	AST	TOV	STL	BLK	PF	FP	DD2	TD3	+/-
2019-20	DAL	23	769	35.8	11.5	24.2	47.6	3.6	11.4	32.0	9.1	11.2	81.4	1.6	10.1	11.8	11.0	5.5	1.6	0.2	2.9	66.1	15	7	7.2
2018-19	DAL	72	2318	26.3	8.7	20.5	42.7	2.9	8.9	32.7	6.0	8.4	71.3	1.5	8.2	9.7	7.4	4.3	1.3	0.4	2.4	50.1	24	8	-2.0

Advanced Splits

BY YEAR	TEAM	GP	MIN	OFFRTG	DEFRTG	NETRTG	AST%	AST/TO	AST RATIO	OREB%	DREB%	REB%	TO RATIO	EFG%	TS%	USG%	PACE	PIE
2019-20	DAL	23	33	117.3	109.5	7.8	48.4	2.01	24.3	3.9	23.1	13.8	12.1	55.2	61.5	35.6	101.17	21.7
2018-19	DAL	72	32	107.6	110.6	-3.1	31.7	1.74	20.7	3.6	19.8	11.7	11.9	49.7	54.5	29.6	100.99	14.9

Misc Splits

BY YEAR	TEAM	GP	MIN	PTS OFF TO	2ND PTS	FBPS	PITP	OPP PTS OFF TO	OPP 2ND PTS	OPP FBPS	OPP PITP	BLK	BLKA	PF	PFD
2019-20	DAL	23	769	3.7	3.2	3.0	14.6	12.7	11.7	12.6	39.3	0.2	0.7	2.9	8.6

Which means that for the parameter “Luka Doncic” and the current data, the program would display:

2019-20 11.4

2018-19 8.9

For other players it could display many more seasons.

Implementation

Since we are hiring for a Java developer, we would suggest you use Java for the task. We also very much encourage you to use the latest incarnation (13 at time of writing) and a modern approach to Java that (streams, lambdas, async features, ... - these are just examples, not things you must use). You can pick any library or tool you prefer, the only condition being that you should write source code, not using a GUI tool.

And since we also put a lot of emphasis on testing any automated tests (JUnit or any other testing framework) any tests that you can include are very welcome. The web scarping task in this assignment is not really well suited to automated testing (involves third party sites) so this is not mandatory but again very welcome.

The program should be a command line application build with maven or gradle and posted to github with a short readme.