

Preprocessing

- Pengambilan data tahun 2017 dan melakukan drop duplicate pada nama player.
- Explorasi nilai null terbanyak pada kolom blanl dan blank2 sebanyak 486 data dimana 486 data merupakan total data, sehingga kedua kolom tersebut didrop.
- Ada 36 nilai kosong pada variabel 3P%, tetapi hal itu masuk akal dikarenakan ada player yang tidak memasukkan 3P pada tahun 2017, sehingga nilai null ini dapat diabaikan.

Who is the youngest and oldest player in the NBA in 2017 for each team (Tm)?

Player	Age	Tm	Player	Age	Tm
DeAndre' Bembry	22.0	ATL	Thabo Sefolosha	32.0	ATL
Taurean Walker-Prince	22.0	ATL	Gary Neal	32.0	ATL
Jaylen Brown	20.0	BOS	Gerald Green	31.0	BOS
Isaiah Whitehead	21.0	BRK	Luis Scola	36.0	BRK
Bobby Portis	21.0	CHI	Dwyane Wade	35.0	CHI
Christian Wood	21.0	CHO	Brian Roberts	31.0	CHO
Kay Felder	21.0	CLE	Chris Andersen	38.0	CLE
Ben Bentil	21.0	DAL	Dirk Nowitzki	38.0	DAL
Jamal Murray	19.0	DEN	Mike Miller	36.0	DEN
Henry Ellenson	20.0	DET	Beno Udrih	34.0	DET
Stanley Johnson	20.0	DET	David West	36.0	GSW
Kevon Looney	20.0	GSW	Nene Hilario	34.0	HOU
Chinanu Onuaku	20.0	HOU	Al Jefferson	32.0	IND
Myles Turner	20.0	IND	Aaron Brooks	32.0	IND
Diamond Stone	19.0	LAC	Paul Pierce	39.0	LAC
Ivica Zubac	19.0	LAL	Metta World	37.0	LAL
Brandon Ingram	19.0	LAL	Vince Carter	40.0	MEM
Deyonta Davis	20.0	MEM	Udonis Haslem	36.0	MIA
Wade Baldwin	20.0	MEM	Jason Terry	39.0	MIL
Justise Winslow	20.0	MIA	John Lucas	34.0	MIN
Thon Maker	19.0	MIL	Jarrett Jack	33.0	NOP
Tyus Jones	20.0	MIN	Carmelo Anthony	32.0	NYK
Cheick Diallo	20.0	NOP	Sasha Vujacic	32.0	NYK
Kristaps Porzingis	21.0	NYK	Nick Collison	36.0	OKC
Domantas Sabonis	20.0	OKC	C.J. Watson	32.0	ORL
Stephen Zimmerman	20.0	ORL	Tiago Splitter	32.0	PHI
Timothe Luwawu-Cabarrot	21.0	PHI	Leandro Barbosa	34.0	PHO
Jahlil Okafor	21.0	PHI	Tyson Chandler	34.0	PHO
Derrick Jones	19.0	PHO	Evan Turner	28.0	POR
Dragan Bender	19.0	PHO	Arron Afflalo	31.0	SAC
Marquese Chriss	19.0	PHO	Anthony Tolliver	31.0	SAC
Noah Vonleh	21.0	POR	Manu Ginobili	39.0	SAS
Georgios Papagiannis	19.0	SAC	Kyle Lowry	30.0	TOR
Dejounte Murray	20.0	SAS	DeMarre Carroll	30.0	TOR
Jakob Poeltl	21.0	TOR	Mike Dunleavy	36.0	TOT
Bruno Caboclo	21.0	TOR	Matt Barnes	36.0	TOT
Chris McCullough	21.0	TOT	Joe Johnson	35.0	UTA
Dante Exum	21.0	UTA	Marcin Gortat	32.0	WAS
Trey Lyles	21.0	UTA			
Kelly Oubre	21.0	WAS			

Persebaran umur termuda berkisar di 19-21 sedangkan untuk tertua berkisar di 30-40.

Which player has the most minutes played (MP) in each position (Pos)?

	Player	MP	Pos
24658	Andrew Wiggins	3048.0	SF
24625	Karl-Anthony Towns	3030.0	C
24306	James Harden	2947.0	PG
24127	Harrison Barnes	2803.0	PF
24443	C.J. McCollum	2796.0	SG
24405	Joffrey Lauvergne	980.0	PF-C

Andrew Wiggins menjadi player dengan Minutes Played tertinggi untuk posisi SF, dan juga menjadi MP tertinggi untuk keseluruhan posisi.

Which team has the highest average total rebound percentage (TRB%), assist percentage (AST%), steal percentage (STL%), and block percentage (BLK%)?

Team: WAS AVG Total Rebound: 13.45	Team: DEN AVG Assist: 15.860000000000001
Team: MIN AVG Total Steal: 2.3714285714285714	Team: GSW AVG Block: 2.74

Who is the best player in your opinion based on his record stats? note: you can refer to variables point (PTS), assists, rebounds, or anything else. A combination of several variables would be nice.

Jika kita memilih beberapa atribut tanpa mementingkan posisi dari player tersebut maka Russell Westbrook menjadi pemain terbaik.

	Pos	Tm	PTS	AST	TRB	PTS	BLK	Overall
Player								
Russell Westbrook	PG	OKC	1.0	0.927152	0.774194	1.0	0.14486	0.769241

Tetapi jika kita memberikan beberapa kasus mengenai tugas utama dari sebuah posisi pada team NBA maka hasilnya menjadi seperti ini:

1. Posisi PG variabel yang diambil adalah AST dan PTS.

	Pos	Tm	AST	PTS	Overall PG
Player					
Russell Westbrook	PG	OKC	0.927072	1.0	0.963536

2. Posisi C variabel yang diambil adalah TRB dan BLK.

	Pos	Tm	TRB	BLK	Overall C
Player					
Rudy Gobert	C	UTA	0.927289	1.0	0.963645

3. Posisi SF variabel yang diambil adalah AST dan PTS.

	Pos	Tm	AST	PTS	Overall SF
Player					
LeBron James	SF	CLE	1.0	1.0	1.0

4. Posisi SG variabel yang diambil adalah 3P dan PTS.

	Pos	Tm	3P	PTS	Overall SG
Player					
Klay Thompson	SG	GSW	1.0	0.862376	0.931188

5. Posisi PF variabel yang diambil adalah TRB, BLK dan PTS.

	Pos	Tm	TRB	PTS	BLK	Overall PF
Player						
Serge Ibaka	PF	TOT	0.807229	0.772727	0.953846	0.844601

Which team has the best average stat record of their players? Note: you can refer to points, assists, rebounds, or anything else. A combination of several variables would be nice.

Team dengan best average overall diduduki oleh GSW dengan nilai 0,21 menggunakan variabel PTS, AST, TRB, PTS, BLK.

AVG Overall: 0.21002002964180935

	Pos	Tm	PTS	AST	TRB	PTS	BLK	Overall
Player								
Ian Clark	SG	GSW	0.206020	0.099338	0.109319	0.206020	0.037383	0.131616
Stephen Curry	PG	GSW	0.781470	0.577263	0.316308	0.781470	0.079439	0.507190
Kevin Durant	SF	GSW	0.607897	0.331126	0.459677	0.607897	0.462617	0.493843
Draymond Green	PF	GSW	0.303362	0.588300	0.536738	0.303362	0.495327	0.445418
Andre Iguodala	SF	GSW	0.224394	0.289183	0.272401	0.224394	0.182243	0.238523
Damian Jones	C	GSW	0.007428	0.000000	0.020609	0.007428	0.018692	0.010831
Shaun Livingston	PG	GSW	0.152072	0.153422	0.135305	0.152072	0.093458	0.137266
Kevon Looney	C	GSW	0.052776	0.032009	0.111111	0.052776	0.079439	0.065622
James Michael	PF	GSW	0.057467	0.018764	0.080645	0.057467	0.135514	0.069971
Patrick McCaw	SG	GSW	0.110242	0.084989	0.090502	0.110242	0.070093	0.093214
JaVale McGee	C	GSW	0.184519	0.018764	0.218638	0.184519	0.313084	0.183905
Zaza Pachulia	C	GSW	0.166536	0.145695	0.367384	0.166536	0.154206	0.200071
Klay Thompson	SG	GSW	0.681001	0.176600	0.255376	0.681001	0.186916	0.396179
Anderson Varejao	C	GSW	0.007037	0.011038	0.024194	0.007037	0.014019	0.012665
David West	C	GSW	0.123534	0.166667	0.181900	0.123534	0.224299	0.163987