Group5 Project

Yang Ji Yeon, Yu Ji Sang, Jang Yoon Hee

CONTENTS

Recommending FIFA19 Players
Based on Individual Preference

- Problem &
  Analysis direction
- Data Preprocessing
- Data Visualization
- Programming
- Conclusion
- Q&A

Problems

For ones who are **playing FIFA for the first time..**

How should I consider player's ability? In what criterion?

Is overall good player really a good player?

Analysis Direction

For ones who are playing FIFA for the first time

- **Provide broad outline** about abilities of each position
- **Recommending players** based on **individual preference**

Analysis Direction

For ones who are playing FIFA for the first time

- ✓ **Provide br** **DATA VISUALIZATION** s of each position
- ✓ **Recommer** **PROGRAMMING** **dividual preference**

Data Explanation

Detailed attributes for every player registered in the latest edition of FIFA 19 database

18207 obs / 88 variables

FROM KAGGLE

What we used...

NAME
NATIONALITY
CLUB
POSITION
CROSSING
FINISHING
⋮
GKReflexes

37 variables

Data Preprocessing

Position Dividing

POSITION(variable)

CAM CB CDM CF CM GK
LAM LB LCB LCM LDM
LF LM LS LW LWB RAM
RB RCB RCM RDM RF
RM RS RW RWB ST

Divided data by Position..

- **Offense(OF)**
- **Defender(DF)**
- **Midfielder(MF)**
- **GoalKeeper(GK)**

Data Preprocessing

Making index for Abilities

OF / DF / MF

Ability Variables

Acceleration / Sprint_Speed
Agility / Balance / Reactions / Ball_Control / Dribbling / Composure
Positioning / Finishing / Shot_Power / Long_Shots / Volleys / Penalties
Interceptions / Heading_Accuracy / Marking / Standing_Tackle / Sliding_Tackle
Vision / Crossing / Free_Kick_Accuracy / Short_Passing / Long_Passing / Curve
Jumping / Stamina / Strength / Aggression

Data Preprocessing

Making index for Abilities

OF / DF / MF

Ability Variables

Acceleration / Sprint_Speed
Agility / Balance / Reactions / Ball_Control / Dribbling / Composure
Positio / / /
Volleys
Hard to consider one by one
Interce / / /
Standing_Tackle / Sliding_Tackle
Vision / Crossing / Free_Kick_Accuracy / Short_Passing / Long_Passing / Curve
Jumping / Stamina / Strength / Aggression

Data Preprocessing

Making index for Abilities

OF / DF / MF

Ability Variables

- Acceleration / Sprint_Speed — Pace
- Agility / Balance / Reactions / Ball_Control / Dribbling / Composure — Dribbling
- Positioning / Finishing / Shot_Power / Long_Shots / Volleys / Penalties — Shooting
- Interceptions / Heading_Accuracy / Marking / Standing_Tackle / Sliding_Tackle — Defending
- Vision / Crossing / Free_Kick_Accuracy / Short_Passing / Long_Passing / Curve — Passing
- Jumping / Stamina / Strength / Aggression — Physicality

Data Preprocessing

Making index for Abilities

GK(Goal Keeper)

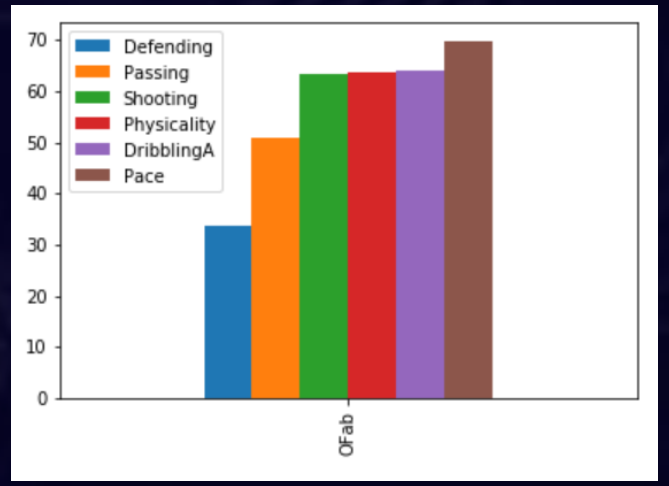
Ability Variables

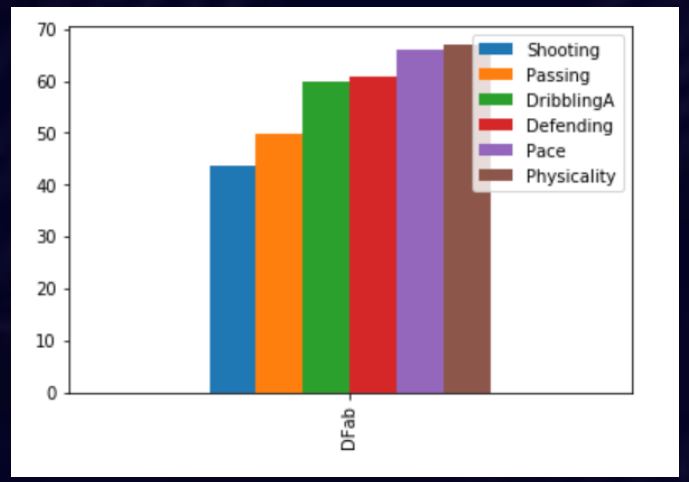
- GKDiving
- GKHandling
- GKKicking
- GKPositioning
- GKReflexes

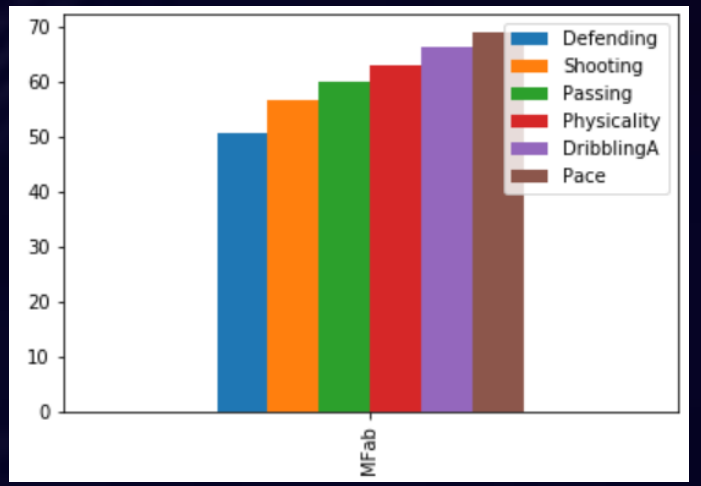
Data Visualization

Overall Average Plot

OF / DF / MF





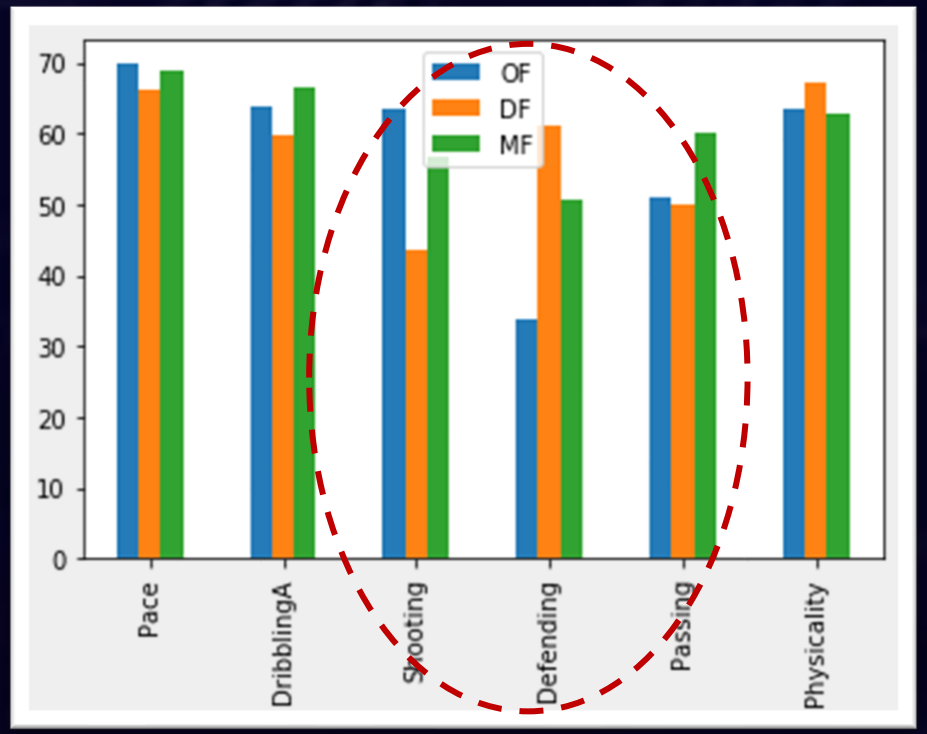


- ✓ Pace, and Physicality is most general ability demanded for all positions
- ✓ Hard to find specific difference by Overall Average Plot

Data Visualization

Overall Average Plot

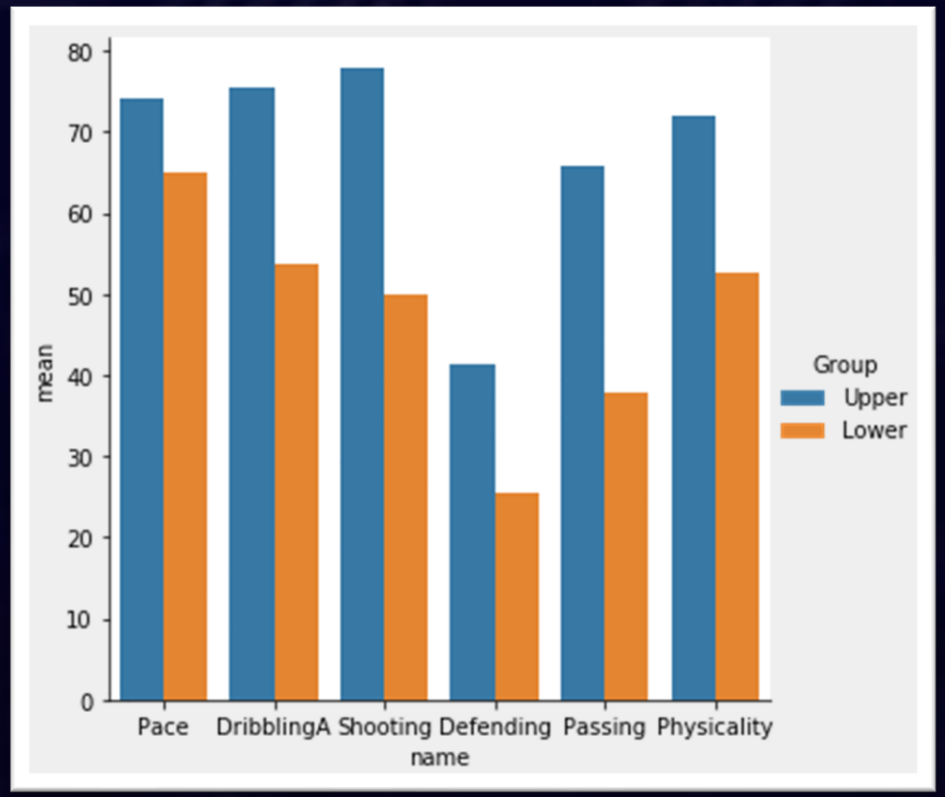
OF / DF / MF



- ✔ Shooting / Defending / Passing ability has significant difference between positions
- ✔ Shooting➔ OF, MF important
- ✔ Defending➔ DF, MF important
- ✔ Passing➔ MF important

Data Visualization

Upper / Lower 10% Comparison



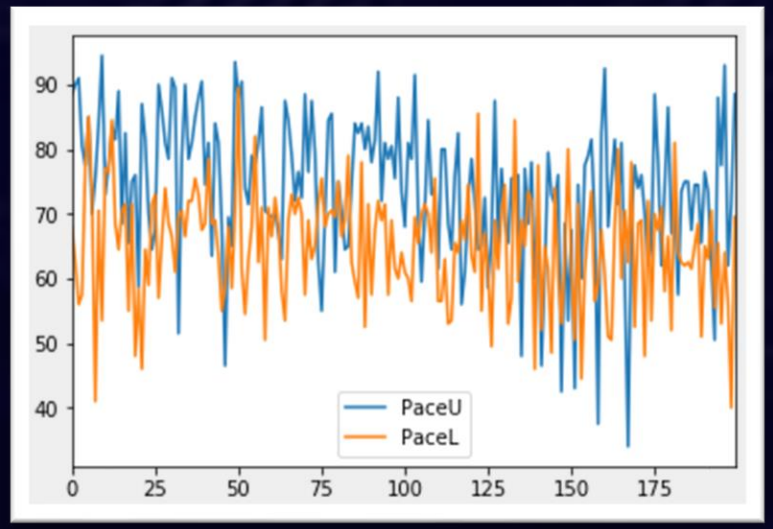
OF(Offense)

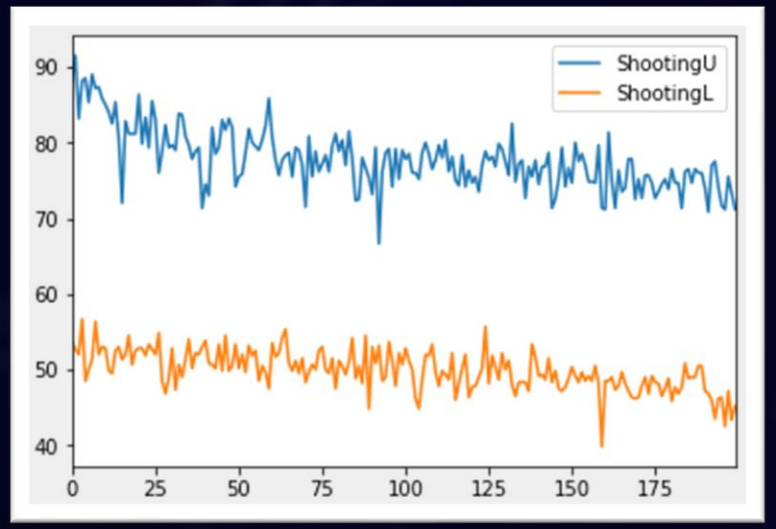
- Pace has little difference
- Difference of Shooting is most significant
- Defending ability is comparatively lower

Data Visualization

Upper / Lower 10% Comparison

OF(Offense)



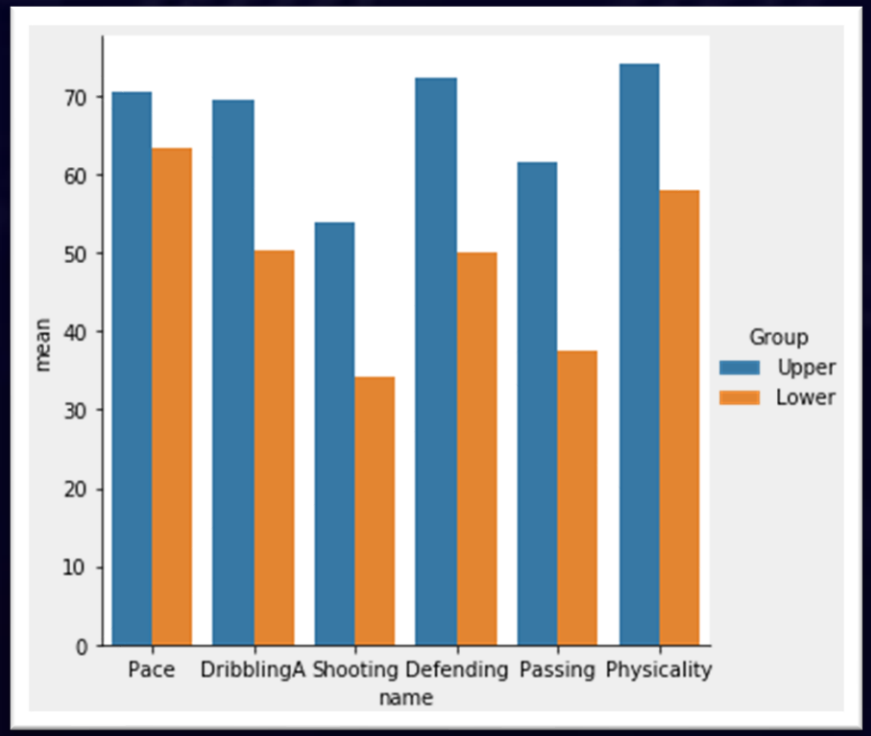


- ✓ Pace ability line overlap (Upper / Lower line)
- ✓ Significant difference in shooting ability(Upper / Lower line)

Data Visualization

Upper / Lower 10% Comparison

DF(Defender)

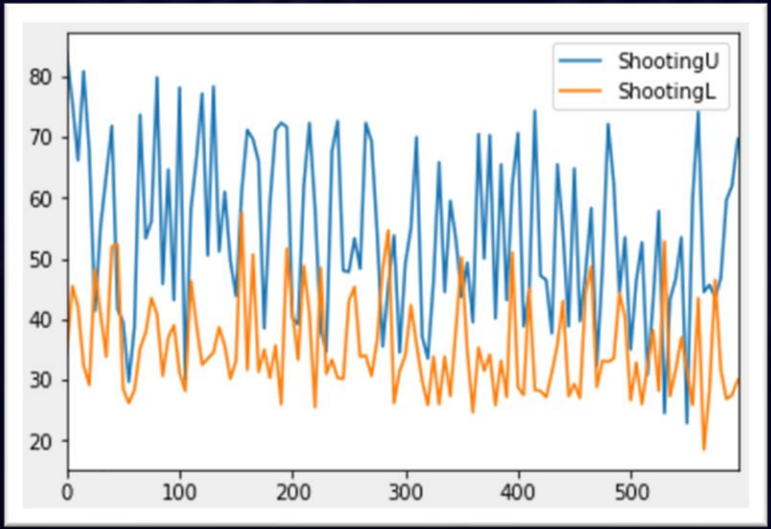


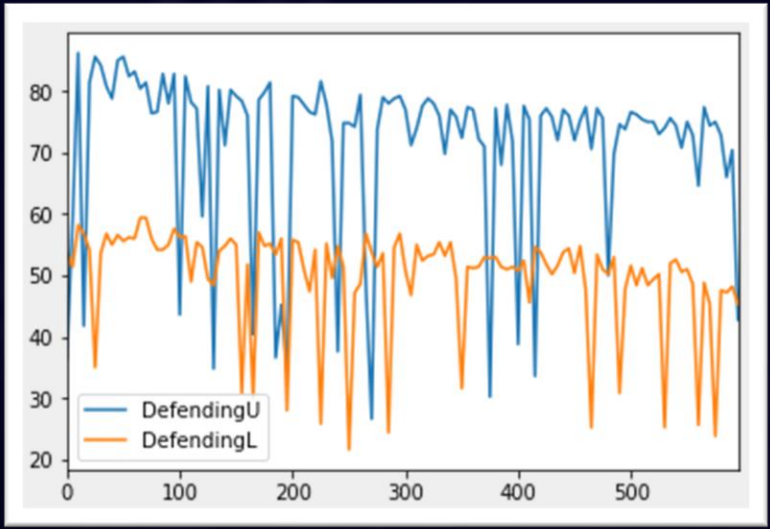
- ✓ Pace ability has low difference
- ✓ Shooting ability is relatively lower than other abilities

Data Visualization

Upper / Lower 10% Comparison

DF(Defender)





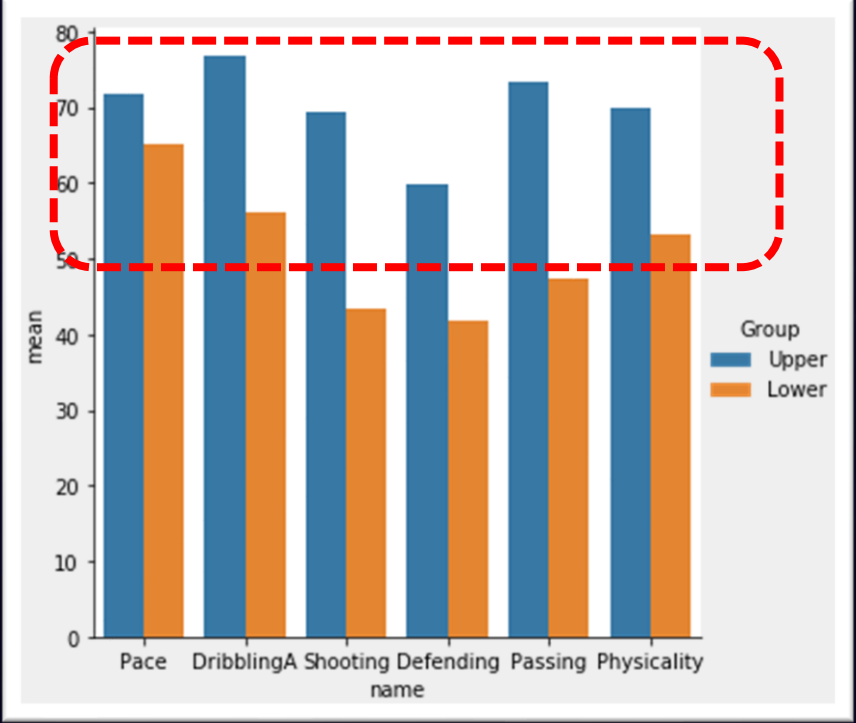
✓Shooting ability has low difference(Upper / Lower)

✓Defending ability has big difference(Upper / Lower)

Data Visualization

Upper / Lower 10% Comparison

MF(Midfielder)

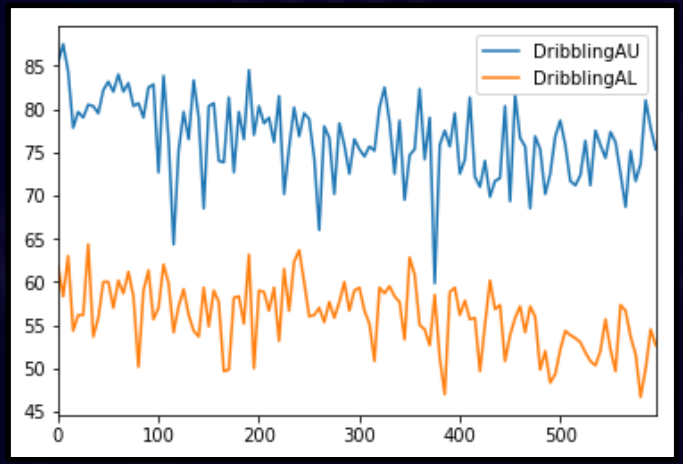


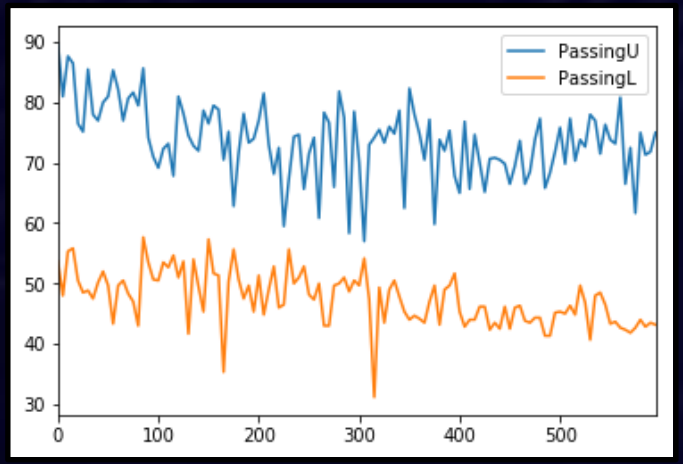
- ✔ Excluding Defending ability,
  Other abilities' difference and importance is relatively same
- ✔ Dribbling, Shooting, Passing is significantly important

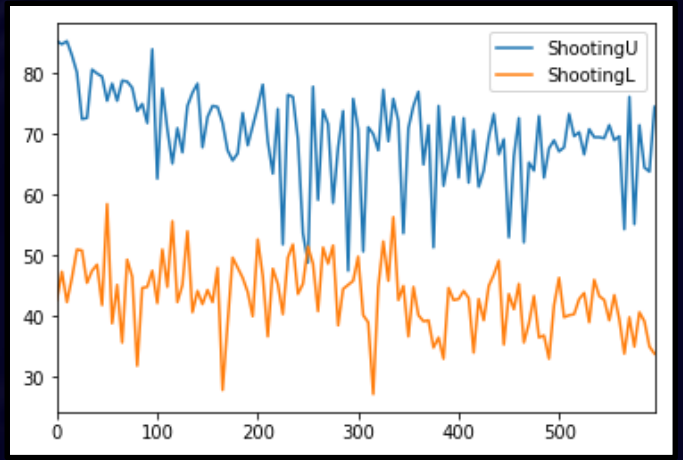
Data Visualization

Upper / Lower 10% Comparison

MF(Midfielder)





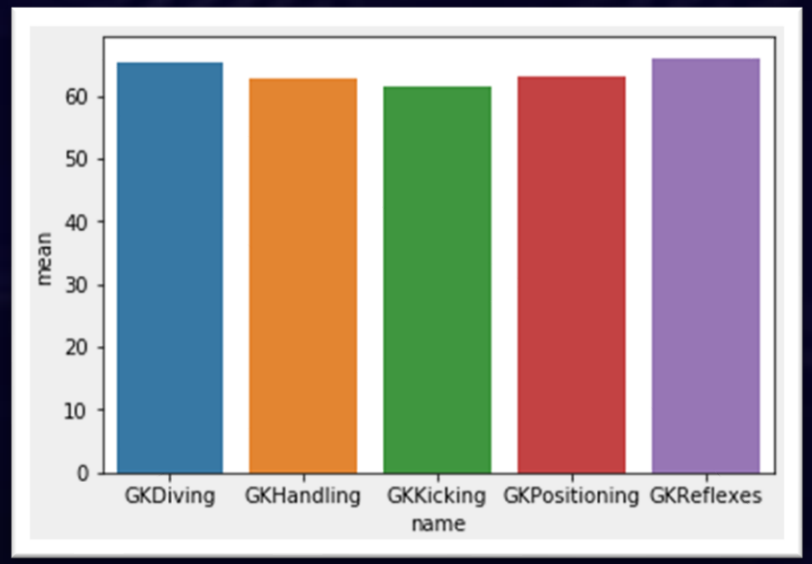


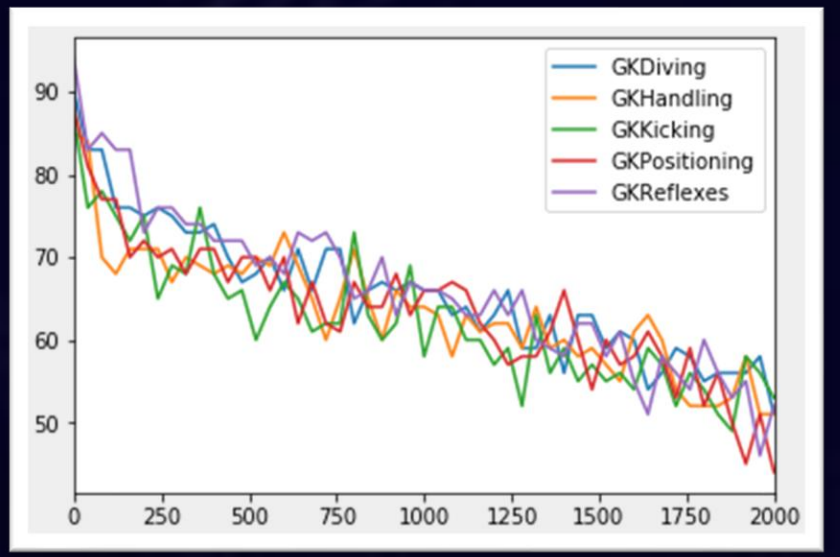
✔DribblingA, Passing, Shooting abilities are significant factor for dividing Upper / Lower group

Data Visualization

Overall Average Plot

GK(Goal Keeper)



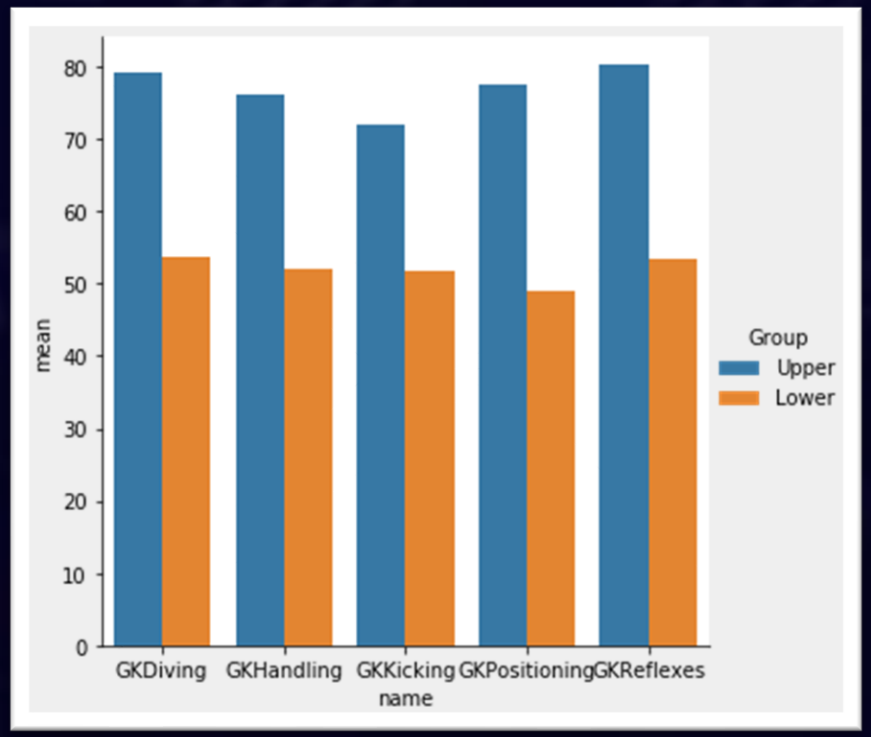


- ✓ All abilities are almost equally important
- ✓ No significant difference in both bar / line plot

Data Visualization

Upper / Lower 10% Comparison

GK(Goal Keeper)

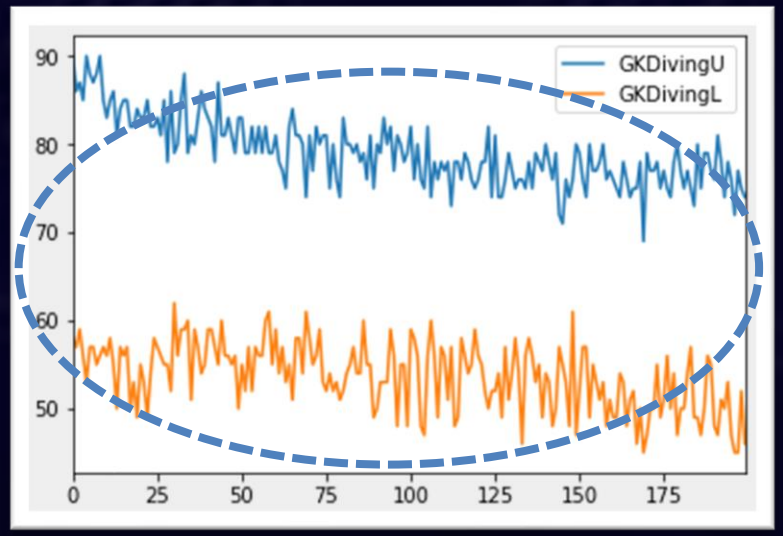


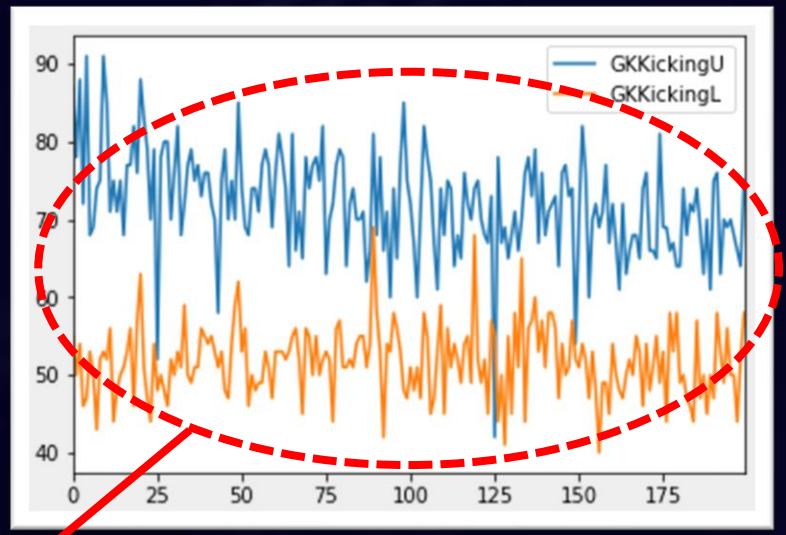
✔Average Difference between Upper / Lower group has No special Characteristic

Data Visualization

Upper / Lower 10% Comparison

GK(Goal Keeper)





- ✓ Kicking ability has high deviance in both Upper / Lower group.
- ✓ Other Ability line plot had low deviance.

Programming

Recommending Players

Starting the Program

```
FIFA19 선수 추천 프로그램

선수를 추천받고 싶다면 1을,
종료하려면 2를 입력하세요. 1

골키퍼(GK) 제외 크게 세 포지션으로 나뉘어 있습니다. (각 포지션에 해당하는 것들)
공격수(OF) : CF, LF, LS, RF, RS, ST
수비수(DF) : CB, LB, LCB, LW, LWB, RB, RCB, RW, RWB
미드필더(MF) : CAM, CDM, CM, LAM, LCM, LDM, LM, RAM, RCM, RDM, RM

원하는 포지션을 입력해주세요. (OF, DF, MF, GK 중 택 1):
```

Information about Positions

Input Position name you are interested in

Programming

Recommending Players

```
원하는 포지션을 입력해주세요. (OF, DF, MF, GK 중 택 1): OF
```

→ Input Position

```
6가지의 능력치가 있습니다.
Pace : Acceleration(가속력), Sprint speed(최고 속력)
Dribbling : Agility(민첩성), Balance(균형 감각), Reactions(반응 속도), Ball control(볼 조종력), Dribbling(드리블 실력), Composure(침착성)
Shooting : Positioning(위치 선정), Finishing(골 결정력), Shot power(슛 파워), Long shots(장거리 슛), Volleys(발리 슛), Penalties(페널티킥 정확도)
Defending : Interceptions(가로채기), Heading accuracy(헤딩 정확도), Marking(대인 방어), Standing tackle(서서 하는 태클), Sliding tackle(슬라이딩 태클)
Passing : Vision(선수의 시야), Crossing(크로스 정확도), Free kick accuracy(프리킥 정확도), Short passing(단거리 패스), Long passing(장거리 패스), Curve(커브 수치)
Physicality : Jumping(점프력), Stamina(체력), Strength(힘), Aggression(공격성)

포지션별 능력치 평균 차이
Pace : OF>MF>DF
DribblingA : MF>OF>DF
Shooting : OF>>MF>>DF
Defending : DF>>MF>>>OF
Passing : MF>>OF>DF
Physicality : DF>OF>MF
```

1. Explanation about Abilities(ex_OF)
2. Information about Average difference of Position

```
OF 가이드 라인
OF 선수들 평균 능력치 수치 : Pace > DribblingA > Physicality > Shooting > Passing > Defending

OF 상하위권 선수들은 Shooting, Passing, DribblingA 순으로 큰 차이를 보였습니다.
<<능력치 별 중요도 입력하기>>
※중요도가 같은 경우 OF 선수 평균 능력치 순대로 정렬되어 보여집니다.

Pace 중요도를 입력하세요. (1~5) :
```

Recommended Guideline of OF Ability

Programming

Recommending Players

OF 상하위권 선수들은 Shooting, Passing, DribblingA 순으로 큰 차이를 보였습니다.
※중요도가 같을 경우 OF 선수 평균 능력치 순대로 정렬되어 보여집니다.

Entering personal Preference Score

```
Pace 중요도를 입력하세요. (1~5) : 2
Dribbling 중요도를 입력하세요. (1~5) : 4
Shooting 중요도를 입력하세요. (1~5) : 5
Defending 중요도를 입력하세요. (1~5) : 2
Passing 중요도를 입력하세요. (1~5) : 3
Physicality 중요도를 입력하세요. (1~5) : 3
```

Making new overall Score applying Preference Score

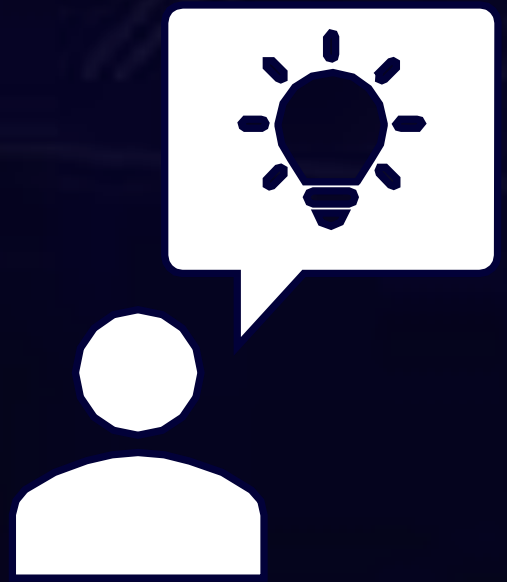
```
def sort_OF(pos):
    #Pace DribblingA Shooting Defending Passing Physicality
    #Pace > DribblingA > Physicality > Shooting > Passing > Defending
    overall_OF=[]
    for i in range(len(OF)):
        plus=int(OF.loc[i,pos[0][0]])*pos[0][1]+int(OF.loc[i,pos[1][0]])*pos[1][1]+int
        overall_OF.append(plus)
    OF['Overall']=overall_OF
    pos_OF=OF.sort_values(by=['Overall'], axis=0, ascending=False)
    pos_OF.index=l_OF
    OF_final=pos_OF.loc[0:10, ['ID','Name','Nationality','Club','Overall']]
    return OF_final
```

추천 선수 목록입니다.

	ID	Name	Nationality	Club	Overall
1	20801	Cristiano Ronaldo	Portugal	Juventus	1550
2	173731	G. Bale	Wales	Real Madrid	1537
3	176580	L. Su?rez	Uruguay	FC Barcelona	1531
4	158023	L. Messi	Argentina	FC Barcelona	1519
5	183277	E. Hazard	Belgium	Chelsea	1487
6	188545	R. Lewandowski	Poland	FC Bayern M?nchen	1484
7	202126	H. Kane	England	Tottenham Hotspur	1483
8	179813	E. Cavani	Uruguay	Paris Saint-Germain	1473
9	153079	S. Ag?ero	Argentina	Manchester City	1467
10	211110	P. Dybala	Argentina	Juventus	1464

Recommending Players

Conclusion



What we did…

- You can make the team of your preference
- Can’t put an input of 5 for all the positions

MANCHESTER UNITED
EA SPORTS
FIFA 19
FIFA
OFFICIAL LICENSED PRODUCT