

EDS practical No 4

Atharv lokhande 239

Vaibhav Jadhav 225

INPUT

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import pandas as pd

df = pd.read_csv("/content/FIFA (1).csv")

# 1. Maximum Salary
max_salary = df['SAL'].max()
print("1. Maximum Auction price: ", max_salary)

# 2. Player who scored the most goals
max_goals = df['GS'].max()
max_goals_player = df.loc[df['GS'] == max_goals,
'PN'].iloc[0]
print("2. Player who scored the most goals: ",
max_goals_player)

# 3. Player whose salary is Minimum
min_salary_player = df.loc[df['SAL'] ==
df['SAL'].min(), 'PN'].iloc[0]
print("3. Player whose minimum Auction price: ",
min_salary_player)

# 4. Minimum Salary
min_salary = df['SAL'].min()
print("4. Minimum Auction price: ", min_salary)

# 5. Player whose salary is Maximum
max_salary_player = df.loc[df['SAL'] ==
df['SAL'].max(), 'PN'].iloc[0]
print("5. Player whose maximum Auction price: ",
max_salary_player)

# 6. Player who scored the least goals
min_goals = df['GS'].min()
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min_goals_player = df.loc[df['GS'] == min_goals,
'PN'].iloc[0]
print("6. Player who scored the less goals: ",
min_goals_player)

# 7. Average Salary
avg_salary = df['SAL'].mean()
print("7. Average Auction price: ", avg_salary)

# 8. League which has the most number of matches
max_matches_league = df.loc[df['MP'] == df['MP'].max(),
'LN'].iloc[0]
print("8. Maximum played match in a league: ",
max_matches_league)

# 9. League which has the least number of matches
min_matches_league = df.loc[df['MP'] == df['MP'].min(),
'LN'].iloc[0]
print("9. Minimum played match in a league: ",
min_matches_league)

# 10. Maximum goals in a league
max_goals_league = df.loc[df['GS'] == df['GS'].max(),
'LN'].iloc[0]
print("10. Maximum goals in a league: ",
max_goals_league)

#11. print statitics of all players
salary_stats = df['SAL'].describe()
print("11.Descriptive statistics for player
salaries:\n", salary_stats)

#12.print Mean of salaries of all players
mean_salary = df['SAL'].mean()
print("12.Mean salary of players: ", mean_salary)

#13.print median of goals of all players
median_goals = df['GS'].median()
print("13.Median goals score of players: ",
median_goals)

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#14.print maximum goals scored by each team
max_goals_by_team = df.groupby('TN')['GS'].max()
print("14.Maximum goals scored by each team:\n",
max_goals_by_team)

#15.print number of players with match records
available
matches_count = df['MP'].count()
print("15. Number of players with match records
available: ", matches_count)

#16.print correlation between player salaries and goals
salary_goals_correlation = df['SAL'].corr(df['GS'])
print("16.Correlation between player salaries and goals
scored: ", salary_goals_correlation)

#17.print covariance between player salaries and
matches played
salary_matches_covariance = df['SAL'].cov(df['MP'])
print("17.Covariance between player salaries and
matches played: ", salary_matches_covariance)

#18.print 90th Percentile of Player Salaries
salary_percentile = df['SAL'].quantile(0.9)
print("18.90th Percentile of Player Salaries:",
salary_percentile)
#19.performing data cleaning
# Drop any rows with missing values
df.dropna(inplace=True)

# Convert numerical columns to appropriate data types
df['SAL'] = df['SAL'].astype(float)
df['GS'] = df['GS'].astype(int)
df['MP'] = df['MP'].astype(int)

# Print the cleaned data
print("Cleaned Data:")
print(df.head())
# 19. How many players have scored more than 10 goals?

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num_players_high_goals = df[df['GS'] > 10].shape[0]
print("19. Number of players with more than 10 goals:
", num_players_high_goals)

#20.DATA WRAGLING AND TRANSMISSION
# Data Wrangling
# Filter players who have scored more than 10 goals
filtered_df = df[df['GS'] > 10]

# Sort players by their salaries in descending order
sorted_df = df.sort_values(by='SAL', ascending=False)

# Data Transmission

# Calculate the total goals scored by each league
league_goals_sum = df.groupby('LN')['GS'].sum()

# Output the results
print("20.Filtered players with more than 10 goals:\n",
filtered_df)
print("21.Players sorted by salary:\n", sorted_df)
print("22.Average salary by team:\n", team_salary_avg)
print("23.Total goals scored by league:\n",
league_goals_sum)

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## Output-

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1. Maximum Auction price: 500000000
2. Player who scored the most goals: Mbappe
3. Player whose minimum Auction price: MULLER
4. Minimum Auction price: 30000000
5. Player whose maximum Auction price: Mbappe
6. Player who scored the less goals: Haland
7. Average Auction price: 108571428.57142857
8. Maximum played match in a league: ISL
9. Minimum played match in a league: EURO
10. Maximum goals in a league: UEFA
11.Descriptive statistics for player salaries:
count      7.000000e+00
mean       1.085714e+08
std        1.728611e+08
min        3.000000e+07
25%        4.000000e+07
50%        4.000000e+07
75%        5.500000e+07

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max 5.000000e+08

Name: SAL, dtype: float64

12.Mean salary of players: 108571428.57142857

13.Median goals score of players: 76.0

14.Maximum goals scored by each team:

TN

ACM 220

Al Nassar 55

Bayren FC 45

Kerla Blaster 99

MC 40

PSG 76

RM 330

Name: GS, dtype: int64

15. Number of players with match records available: 7

16.Correlation between player salaries and goals scored:

0.8305066963160879

17.Covariance between player salaries and matches played: -

459761904.7619048

18.90th Percentile of Player Salaries: 236000000.00000015

Cleaned Data:

	NO	TN	SAL	PN	MP	LN	GS
0	1	Bayren FC	30000000.0	MULLER	15	PEL	45
1	2	Al Nassar	40000000.0	RONALDO	33	UEFA	55
2	3	PSG	50000000.0	MEHSIII	2	EURO	76
3	4	Kerla Blaster	60000000.0	CHETRI	60	ISL	99
4	5	ACM	40000000.0	Zaltan	30	UEFA	220

19. Number of players with more than 10 goals: 7

20.Filtered players with more than 10 goals:

	NO	TN	SAL	PN	MP	LN	GS
0	1	Bayren FC	30000000.0	MULLER	15	PEL	45
1	2	Al Nassar	40000000.0	RONALDO	33	UEFA	55
2	3	PSG	50000000.0	MEHSIII	2	EURO	76
3	4	Kerla Blaster	60000000.0	CHETRI	60	ISL	99
4	5	ACM	40000000.0	Zaltan	30	UEFA	220
5	6	RM	50000000.0	Mbappe	20	UEFA	330
6	7	MC	40000000.0	Haland	30	FIDA	40

21.Players sorted by salary:

	NO	TN	SAL	PN	MP	LN	GS
5	6	RM	50000000.0	Mbappe	20	UEFA	330
3	4	Kerla Blaster	60000000.0	CHETRI	60	ISL	99
2	3	PSG	50000000.0	MEHSIII	2	EURO	76
1	2	Al Nassar	40000000.0	RONALDO	33	UEFA	55
4	5	ACM	40000000.0	Zaltan	30	UEFA	220
6	7	MC	40000000.0	Haland	30	FIDA	40
0	1	Bayren FC	30000000.0	MULLER	15	PEL	45

22.Average salary by team:

TN

ACM 40000000.0

Al Nassar 40000000.0

Bayren FC 30000000.0

Kerla Blaster 60000000.0

MC 40000000.0

PSG 50000000.0

RM 50000000.0

Name: SAL, dtype: float64

23.Total goals scored by league:

LN

EURO	76
FIDA	40
ISL	99
PEL	45
UEFA	605

Name: GS, dtype: int64