NBA Analysis

June 27, 2021

[124]:
```
import math
import pandas as pd
import pandas_datareader as web
import numpy as np
from sklearn.preprocessing import MinMaxScaler
from keras.models import Sequential
from keras.layers import Dense, LSTM
import matplotlib.pyplot as plt
%matplotlib inline
import scipy.stats as stats
import numpy as np
import seaborn as sns
import thinkplot
import statsmodels.api as sm
```

[125]:
```
#Reads stats#
Shaq = pd.read_csv('/Users/Brett/Desktop/ShaqStats.csv')
LeBron= pd.read_csv('/Users/Brett/Desktop/LeBronStats.csv')
Kobe= pd.read_csv('/Users/Brett/Desktop/KobeStats.csv')
Dirk= pd.read_csv('/Users/Brett/Desktop/DirkStats.csv')
MJ= pd.read_csv('/Users/Brett/Desktop/MJStats.csv')
Karl= pd.read_csv('/Users/Brett/Desktop/KarlMalone.csv')
```

[126]:
```
#Checks to see if data will be good to work with#
#Sees if there are na's which we will fix#
print(Shaq)
print(LeBron)
print(Kobe)
print(Dirk)
print(MJ)
print(Karl)
```

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     Season  Age Team   Lg Pos   G  GS    MP    FG   FGA  …    FT%  ORB  \
0   1992-93   20  ORL  NBA   C  81  81  37.9   9.0  16.1  …  0.592  4.2
1   1993-94   21  ORL  NBA   C  81  81  39.8  11.8  19.6  …  0.554  4.7
2   1994-95   22  ORL  NBA   C  79  79  37.0  11.8  20.2  …  0.533  4.2
3   1995-96   23  ORL  NBA   C  54  52  36.0  11.0  19.1  …  0.487  3.4
4   1996-97   24  LAL  NBA   C  51  51  38.1  10.8  19.4  …  0.484  3.8
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5   1997-98   25  LAL  NBA   C  60  57  36.3  11.2  19.1  …  0.527  3.5
6   1998-99   26  LAL  NBA   C  49  49  34.8  10.4  18.1  …  0.540  3.8
7   1999-00   27  LAL  NBA   C  79  79  40.0  12.1  21.1  …  0.524  4.3
8   2000-01   28  LAL  NBA   C  74  74  39.5  11.0  19.2  …  0.513  3.9
9   2001-02   29  LAL  NBA   C  67  66  36.1  10.6  18.3  …  0.555  3.5
10  2002-03   30  LAL  NBA   C  67  66  37.8  10.4  18.1  …  0.622  3.9
11  2003-04   31  LAL  NBA   C  67  67  36.8   8.3  14.1  …  0.490  3.7
12  2004-05   32  MIA  NBA   C  73  73  34.1   9.0  15.0  …  0.461  3.5
13  2005-06   33  MIA  NBA   C  59  58  30.6   8.1  13.6  …  0.469  2.9
14  2006-07   34  MIA  NBA   C  40  39  28.4   7.1  12.0  …  0.422  2.4
15  2007-08   35  TOT  NBA   C  61  61  28.7   5.4   9.1  …  0.503  2.7
16  2008-09   36  PHO  NBA   C  75  75  30.0   6.8  11.2  …  0.595  2.5
17  2009-10   37  CLE  NBA   C  53  53  23.4   4.9   8.7  …  0.496  1.8
18  2010-11   38  BOS  NBA   C  37  36  20.3   3.6   5.4  …  0.557  1.3

    DRB   TRB  AST  STL  BLK  TOV   PF   PTS
0   9.6  13.9  1.9  0.7  3.5  3.8  4.0  23.4
1   8.5  13.2  2.4  0.9  2.9  2.7  3.5  29.3
2   7.3  11.4  2.7  0.9  2.4  2.6  3.3  29.3
3   7.7  11.0  2.9  0.6  2.1  2.9  3.6  26.6
4   8.7  12.5  3.1  0.9  2.9  2.9  3.5  26.2
5   7.9  11.4  2.4  0.7  2.4  2.9  3.2  28.3
6   6.9  10.7  2.3  0.7  1.7  2.5  3.2  26.3
7   9.4  13.6  3.8  0.5  3.0  2.8  3.2  29.7
8   8.8  12.7  3.7  0.6  2.8  2.9  3.5  28.7
9   7.2  10.7  3.0  0.6  2.0  2.6  3.0  27.2
10  7.2  11.1  3.1  0.6  2.4  2.9  3.4  27.5
11  7.8  11.5  2.9  0.5  2.5  2.9  3.4  21.5
12  6.9  10.4  2.7  0.5  2.3  2.8  3.6  22.9
13  6.3   9.2  1.9  0.4  1.8  2.8  3.9  20.0
14  5.0   7.4  2.0  0.2  1.4  2.4  3.5  17.3
15  6.4   9.1  1.5  0.5  1.4  3.0  3.7  13.6
16  5.9   8.4  1.7  0.7  1.4  2.2  3.4  17.8
17  4.9   6.7  1.5  0.3  1.2  2.0  3.2  12.0
18  3.5   4.8  0.7  0.4  1.1  1.5  3.2   9.2

[19 rows x 30 columns]
     Season  Age Team   Lg Pos   G  GS    MP    FG   FGA  …    FT%  ORB  \
0   2003-04   19  CLE  NBA  SG  79  79  39.5   7.9  18.9  …  0.754  1.3
1   2004-05   20  CLE  NBA  SF  80  80  42.4   9.9  21.1  …  0.750  1.4
2   2005-06   21  CLE  NBA  SF  79  79  42.5  11.1  23.1  …  0.738  0.9
3   2006-07   22  CLE  NBA  SF  78  78  40.9   9.9  20.8  …  0.698  1.1
4   2007-08   23  CLE  NBA  SF  75  74  40.4  10.6  21.9  …  0.712  1.8
5   2008-09   24  CLE  NBA  SF  81  81  37.7   9.7  19.9  …  0.780  1.3
6   2009-10   25  CLE  NBA  SF  76  76  39.0  10.1  20.1  …  0.767  0.9
7   2010-11   26  MIA  NBA  SF  79  79  38.8   9.6  18.8  …  0.759  1.0
8   2011-12   27  MIA  NBA  SF  62  62  37.5  10.0  18.9  …  0.771  1.5
9   2012-13   28  MIA  NBA  PF  76  76  37.9  10.1  17.8  …  0.753  1.3
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10  2013-14   29  MIA  NBA  PF  77  77  37.7  10.0  17.6  …  0.750  1.1
11  2014-15   30  CLE  NBA  SF  69  69  36.1   9.0  18.5  …  0.710  0.7
12  2015-16   31  CLE  NBA  SF  76  76  35.6   9.7  18.6  …  0.731  1.5
13  2016-17   32  CLE  NBA  SF  74  74  37.8   9.9  18.2  …  0.674  1.3
14  2017-18   33  CLE  NBA  PF  82  82  36.9  10.5  19.3  …  0.731  1.2
15  2018-19   34  LAL  NBA  SF  55  55  35.2  10.1  19.9  …  0.665  1.0
16  2019-20   35  LAL  NBA  PG  67  67  34.6   9.6  19.4  …  0.693  1.0
17  2020-21   36  LAL  NBA  PG  45  45  33.4   9.4  18.3  …  0.698  0.6

    DRB  TRB   AST  STL  BLK  TOV   PF   PTS
0   4.2  5.5   5.9  1.6  0.7  3.5  1.9  20.9
1   6.0  7.4   7.2  2.2  0.7  3.3  1.8  27.2
2   6.1  7.0   6.6  1.6  0.8  3.3  2.3  31.4
3   5.7  6.7   6.0  1.6  0.7  3.2  2.2  27.3
4   6.1  7.9   7.2  1.8  1.1  3.4  2.2  30.0
5   6.3  7.6   7.2  1.7  1.1  3.0  1.7  28.4
6   6.4  7.3   8.6  1.6  1.0  3.4  1.6  29.7
7   6.5  7.5   7.0  1.6  0.6  3.6  2.1  26.7
8   6.4  7.9   6.2  1.9  0.8  3.4  1.5  27.1
9   6.8  8.0   7.3  1.7  0.9  3.0  1.4  26.8
10  5.9  6.9   6.3  1.6  0.3  3.5  1.6  27.1
11  5.3  6.0   7.4  1.6  0.7  3.9  2.0  25.3
12  6.0  7.4   6.8  1.4  0.6  3.3  1.9  25.3
13  7.3  8.6   8.7  1.2  0.6  4.1  1.8  26.4
14  7.5  8.6   9.1  1.4  0.9  4.2  1.7  27.5
15  7.4  8.5   8.3  1.3  0.6  3.6  1.7  27.4
16  6.9  7.8  10.2  1.2  0.5  3.9  1.8  25.3
17  7.0  7.7   7.8  1.1  0.6  3.7  1.6  25.0

[18 rows x 30 columns]
     Season  Age Team   Lg Pos   G  GS    MP    FG   FGA  …    FT%  ORB  \
0   1996-97   18  LAL  NBA  SF  71   6  15.5   2.5   5.9  …  0.819  0.7
1   1997-98   19  LAL  NBA  SF  79   1  26.0   4.9  11.6  …  0.794  1.0
2   1998-99   20  LAL  NBA  SG  50  50  37.9   7.2  15.6  …  0.839  1.1
3   1999-00   21  LAL  NBA  SG  66  62  38.2   8.4  17.9  …  0.821  1.6
4   2000-01   22  LAL  NBA  SG  68  68  40.9  10.3  22.2  …  0.853  1.5
5   2001-02   23  LAL  NBA  SG  80  80  38.3   9.4  20.0  …  0.829  1.4
6   2002-03   24  LAL  NBA  SG  82  82  41.5  10.6  23.5  …  0.843  1.3
7   2003-04   25  LAL  NBA  SG  65  64  37.6   7.9  18.1  …  0.852  1.6
8   2004-05   26  LAL  NBA  SG  66  66  40.7   8.7  20.1  …  0.816  1.4
9   2005-06   27  LAL  NBA  SG  80  80  41.0  12.2  27.2  …  0.850  0.9
10  2006-07   28  LAL  NBA  SG  77  77  40.8  10.6  22.8  …  0.868  1.0
11  2007-08   29  LAL  NBA  SG  82  82  38.9   9.5  20.6  …  0.840  1.1
12  2008-09   30  LAL  NBA  SG  82  82  36.1   9.8  20.9  …  0.856  1.1
13  2009-10   31  LAL  NBA  SG  73  73  38.8   9.8  21.5  …  0.811  1.1
14  2010-11   32  LAL  NBA  SG  82  82  33.9   9.0  20.0  …  0.828  1.0
15  2011-12   33  LAL  NBA  SG  58  58  38.5   9.9  23.0  …  0.845  1.1
16  2012-13   34  LAL  NBA  SG  78  78  38.6   9.5  20.4  …  0.839  0.8
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17	2013-14	35	LAL	NBA	SG	6	6	29.5	5.2	12.2	…	0.857	0.3
18	2014-15	36	LAL	NBA	SG	35	35	34.5	7.6	20.4	…	0.813	0.7
19	2015-16	37	LAL	NBA	SF	66	66	28.2	6.0	16.9	…	0.826	0.6

	DRB	TRB	AST	STL	BLK	TOV	PF	PTS
0	1.2	1.9	1.3	0.7	0.3	1.6	1.4	7.6
1	2.1	3.1	2.5	0.9	0.5	2.0	2.3	15.4
2	4.2	5.3	3.8	1.4	1.0	3.1	3.1	19.9
3	4.7	6.3	4.9	1.6	0.9	2.8	3.3	22.5
4	4.3	5.9	5.0	1.7	0.6	3.2	3.3	28.5
5	4.1	5.5	5.5	1.5	0.4	2.8	2.9	25.2
6	5.6	6.9	5.9	2.2	0.8	3.5	2.7	30.0
7	3.9	5.5	5.1	1.7	0.4	2.6	2.7	24.0
8	4.5	5.9	6.0	1.3	0.8	4.1	2.6	27.6
9	4.4	5.3	4.5	1.8	0.4	3.1	2.9	35.4
10	4.7	5.7	5.4	1.4	0.5	3.3	2.7	31.6
11	5.2	6.3	5.4	1.8	0.5	3.1	2.8	28.3
12	4.1	5.2	4.9	1.5	0.5	2.6	2.3	26.8
13	4.3	5.4	5.0	1.5	0.3	3.2	2.6	27.0
14	4.1	5.1	4.7	1.2	0.1	3.0	2.1	25.3
15	4.3	5.4	4.6	1.2	0.3	3.5	1.8	27.9
16	4.7	5.6	6.0	1.4	0.3	3.7	2.2	27.3
17	4.0	4.3	6.3	1.2	0.2	5.7	1.5	13.8
18	4.9	5.7	5.6	1.3	0.2	3.7	1.9	22.3
19	3.1	3.7	2.8	0.9	0.2	2.0	1.7	17.6

[20 rows x 30 columns]

	Season	Age	Team	Lg	Pos	G	GS	MP	FG	FGA	…	FT%	ORB	DRB	\
0	1998-99	20	DAL	NBA	PF	47	24	20.4	2.9	7.1	…	0.773	0.9	2.6	
1	1999-00	21	DAL	NBA	PF	82	81	35.8	6.3	13.6	…	0.830	1.2	5.2	
2	2000-01	22	DAL	NBA	PF	82	82	38.1	7.2	15.2	…	0.838	1.5	7.7	
3	2001-02	23	DAL	NBA	C	76	76	38.0	7.9	16.6	…	0.853	1.6	8.4	
4	2002-03	24	DAL	NBA	PF	80	80	39.0	8.6	18.6	…	0.881	1.0	8.9	
5	2003-04	25	DAL	NBA	C	77	77	37.9	7.9	17.0	…	0.877	1.2	7.5	
6	2004-05	26	DAL	NBA	PF	78	78	38.7	8.5	18.5	…	0.869	1.2	8.5	
7	2005-06	27	DAL	NBA	PF	81	81	38.1	9.3	19.3	…	0.901	1.4	7.6	
8	2006-07	28	DAL	NBA	PF	78	78	36.2	8.6	17.2	…	0.904	1.6	7.3	
9	2007-08	29	DAL	NBA	PF	77	77	36.0	8.2	17.1	…	0.879	1.2	7.3	
10	2008-09	30	DAL	NBA	PF	81	81	37.7	9.6	20.0	…	0.890	1.1	7.3	
11	2009-10	31	DAL	NBA	PF	81	80	37.5	8.9	18.5	…	0.915	1.0	6.7	
12	2010-11	32	DAL	NBA	PF	73	73	34.3	8.4	16.2	…	0.892	0.7	6.3	
13	2011-12	33	DAL	NBA	PF	62	62	33.5	7.6	16.7	…	0.896	0.7	6.0	
14	2012-13	34	DAL	NBA	PF	53	47	31.3	6.5	13.7	…	0.860	0.7	6.2	
15	2013-14	35	DAL	NBA	PF	80	80	32.9	7.9	15.9	…	0.899	0.5	5.7	
16	2014-15	36	DAL	NBA	PF	77	77	29.6	6.3	13.8	…	0.882	0.6	5.4	
17	2015-16	37	DAL	NBA	PF	75	75	31.5	6.6	14.8	…	0.893	0.7	5.8	
18	2016-17	38	DAL	NBA	PF	54	54	26.4	5.5	12.6	…	0.875	0.4	6.1	
19	2017-18	39	DAL	NBA	C	77	77	24.7	4.5	9.8	…	0.898	0.3	5.4	

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20  2018-19   40  DAL  NBA  PF  51  20  15.6  2.6   7.4  …  0.780  0.1  3.0
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	TRB	AST	STL	BLK	TOV	PF	PTS
0	3.4	1.0	0.6	0.6	1.6	2.2	8.2
1	6.5	2.5	0.8	0.8	1.7	3.1	17.5
2	9.2	2.1	1.0	1.2	1.9	3.0	21.8
3	9.9	2.4	1.1	1.0	1.9	2.9	23.4
4	9.9	3.0	1.4	1.0	1.9	2.6	25.1
5	8.7	2.7	1.2	1.4	1.8	2.8	21.8
6	9.7	3.1	1.2	1.5	2.3	2.8	26.1
7	9.0	2.8	0.7	1.0	1.9	2.0	26.6
8	8.9	3.4	0.7	0.8	2.1	2.2	24.6
9	8.6	3.5	0.7	0.9	2.1	2.6	23.6
10	8.4	2.4	0.8	0.8	1.9	2.2	25.9
11	7.7	2.7	0.9	1.0	1.8	2.6	25.0
12	7.0	2.6	0.5	0.6	1.9	2.4	23.0
13	6.7	2.2	0.7	0.5	1.9	2.1	21.6
14	6.8	2.5	0.7	0.7	1.3	1.8	17.3
15	6.2	2.7	0.9	0.6	1.5	2.1	21.7
16	5.9	1.9	0.5	0.4	1.1	2.1	17.3
17	6.5	1.8	0.7	0.7	1.1	2.1	18.3
18	6.5	1.5	0.6	0.7	0.9	2.1	14.2
19	5.7	1.6	0.6	0.6	0.7	1.9	12.0
20	3.1	0.7	0.2	0.4	0.4	1.5	7.3

[21 rows x 30 columns]

	Season	Age	Team	Lg	Pos	G	GS	MP	FG	FGA	…	FT%	\
0	1984-85	21	CHI	NBA	SG	82.0	82.0	38.3	10.2	19.8	…	0.845	
1	1985-86	22	CHI	NBA	SG	18.0	7.0	25.1	8.3	18.2	…	0.840	
2	1986-87	23	CHI	NBA	SG	82.0	82.0	40.0	13.4	27.8	…	0.857	
3	1987-88	24	CHI	NBA	SG	82.0	82.0	40.4	13.0	24.4	…	0.841	
4	1988-89	25	CHI	NBA	SG	81.0	81.0	40.2	11.9	22.2	…	0.850	
5	1989-90	26	CHI	NBA	SG	82.0	82.0	39.0	12.6	24.0	…	0.848	
6	1990-91	27	CHI	NBA	SG	82.0	82.0	37.0	12.1	22.4	…	0.851	
7	1991-92	28	CHI	NBA	SG	80.0	80.0	38.8	11.8	22.7	…	0.832	
8	1992-93	29	CHI	NBA	SG	78.0	78.0	39.3	12.7	25.7	…	0.837	
9	1993-94	30	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	…	NaN	
10	1994-95	31	CHI	NBA	SG	17.0	17.0	39.3	9.8	23.8	…	0.801	
11	1995-96	32	CHI	NBA	SG	82.0	82.0	37.7	11.2	22.6	…	0.834	
12	1996-97	33	CHI	NBA	SG	82.0	82.0	37.9	11.2	23.1	…	0.833	
13	1997-98	34	CHI	NBA	SG	82.0	82.0	38.8	10.7	23.1	…	0.784	
14	1998-99	35	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	…	NaN	
15	1999-00	36	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	…	NaN	
16	2000-01	37	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	…	NaN	
17	2001-02	38	WAS	NBA	SF	60.0	53.0	34.9	9.2	22.1	…	0.790	
18	2002-03	39	WAS	NBA	SF	82.0	67.0	37.0	8.3	18.6	…	0.821	

	ORB	DRB	TRB	AST	STL	BLK	TOV	PF	PTS

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0   2.0  4.5  6.5  5.9  2.4  0.8  3.5  3.5  28.2
1   1.3  2.3  3.6  2.9  2.1  1.2  2.5  2.6  22.7
2   2.0  3.2  5.2  4.6  2.9  1.5  3.3  2.9  37.1
3   1.7  3.8  5.5  5.9  3.2  1.6  3.1  3.3  35.0
4   1.8  6.2  8.0  8.0  2.9  0.8  3.6  3.0  32.5
5   1.7  5.1  6.9  6.3  2.8  0.7  3.0  2.9  33.6
6   1.4  4.6  6.0  5.5  2.7  1.0  2.5  2.8  31.5
7   1.1  5.3  6.4  6.1  2.3  0.9  2.5  2.5  30.1
8   1.7  5.0  6.7  5.5  2.8  0.8  2.7  2.4  32.6
9   NaN  NaN  NaN  NaN  NaN  NaN  NaN  NaN   NaN
10  1.5  5.4  6.9  5.3  1.8  0.8  2.1  2.8  26.9
11  1.8  4.8  6.6  4.3  2.2  0.5  2.4  2.4  30.4
12  1.4  4.5  5.9  4.3  1.7  0.5  2.0  1.9  29.6
13  1.6  4.2  5.8  3.5  1.7  0.5  2.3  1.8  28.7
14  NaN  NaN  NaN  NaN  NaN  NaN  NaN  NaN   NaN
15  NaN  NaN  NaN  NaN  NaN  NaN  NaN  NaN   NaN
16  NaN  NaN  NaN  NaN  NaN  NaN  NaN  NaN   NaN
17  0.8  4.8  5.7  5.2  1.4  0.4  2.7  2.0  22.9
18  0.9  5.2  6.1  3.8  1.5  0.5  2.1  2.1  20.0

[19 rows x 30 columns]
     Season  Age Team   Lg Pos   G  GS    MP    FG   FGA  …    FT%  ORB  \
0   1985-86   22  UTA  NBA  PF  81  76  30.6   6.2  12.5  …  0.481  2.1
1   1986-87   23  UTA  NBA  PF  82  82  34.8   8.9  17.3  …  0.598  3.4
2   1987-88   24  UTA  NBA  PF  82  82  39.0  10.5  20.1  …  0.700  3.4
3   1988-89   25  UTA  NBA  PF  80  80  39.1  10.1  19.5  …  0.766  3.2
4   1989-90   26  UTA  NBA  PF  82  82  38.1  11.1  19.8  …  0.762  2.8
5   1990-91   27  UTA  NBA  PF  82  82  40.3  10.3  19.6  …  0.770  2.9
6   1991-92   28  UTA  NBA  PF  81  81  37.7   9.9  18.7  …  0.778  2.8
7   1992-93   29  UTA  NBA  PF  82  82  37.8   9.7  17.6  …  0.740  2.8
8   1993-94   30  UTA  NBA  PF  82  82  40.6   9.4  18.9  …  0.694  2.9
9   1994-95   31  UTA  NBA  PF  82  82  38.1  10.1  18.9  …  0.742  1.9
10  1995-96   32  UTA  NBA  PF  82  82  38.0   9.6  18.5  …  0.723  2.1
11  1996-97   33  UTA  NBA  PF  82  82  36.6  10.5  19.2  …  0.755  2.4
12  1997-98   34  UTA  NBA  PF  81  81  37.4   9.6  18.2  …  0.761  2.3
13  1998-99   35  UTA  NBA  PF  49  49  37.4   8.0  16.3  …  0.788  2.2
14  1999-00   36  UTA  NBA  PF  82  82  35.9   9.2  18.0  …  0.797  2.1
15  2000-01   37  UTA  NBA  PF  81  81  35.7   8.3  16.6  …  0.793  1.4
16  2001-02   38  UTA  NBA  PF  80  80  38.0   7.9  17.5  …  0.797  1.8
17  2002-03   39  UTA  NBA  PF  81  81  36.2   7.3  15.9  …  0.763  1.4
18  2003-04   40  LAL  NBA  PF  42  42  32.7   4.6   9.5  …  0.747  1.5

    DRB   TRB  AST  STL  BLK  TOV   PF   PTS
0   6.7   8.9  2.9  1.3  0.5  3.4  3.6  14.9
1   7.0  10.4  1.9  1.3  0.7  2.9  3.9  21.7
2   8.6  12.0  2.4  1.4  0.6  4.0  3.6  27.7
3   7.4  10.7  2.7  1.8  0.9  3.6  3.6  29.1
4   8.3  11.1  2.8  1.5  0.6  3.7  3.2  31.0
```

```
5   8.9  11.8  3.3  1.1  1.0  3.0  3.3  29.0
6   8.4  11.2  3.0  1.3  0.6  3.1  2.8  28.0
7   8.4  11.2  3.8  1.5  1.0  2.9  3.2  27.0
8   8.6  11.5  4.0  1.5  1.5  2.9  3.3  25.2
9   8.7  10.6  3.5  1.6  1.0  2.9  3.3  26.7
10  7.7   9.8  4.2  1.7  0.7  2.4  3.0  25.7
11  7.5   9.9  4.5  1.4  0.6  2.8  2.6  27.4
12  8.0  10.3  3.9  1.2  0.9  3.0  2.9  27.0
13  7.3   9.4  4.1  1.3  0.6  3.3  2.7  23.8
14  7.4   9.5  3.7  1.0  0.9  2.8  2.8  25.5
15  6.9   8.3  4.5  1.1  0.8  3.0  2.7  23.2
16  6.8   8.6  4.3  1.9  0.7  3.3  2.9  22.4
17  6.4   7.8  4.7  1.7  0.4  2.6  2.5  20.6
18  7.3   8.7  3.9  1.2  0.5  2.5  2.8  13.2

[19 rows x 30 columns]
```

[127]:
```
#Drops all NA's#
MJ=MJ.dropna()
Dirk=Dirk.dropna()
Kobe=Kobe.dropna()
Karl=Karl.dropna()
LeBron=LeBron.dropna()
Shaq=Shaq.dropna()
```

[128]:
```
#Ensures all NA's have been dropped#
print(Shaq)
print(LeBron)
print(Kobe)
print(Dirk)
print(MJ)
print(Karl)
```

```
     Season  Age Team   Lg Pos   G  GS    MP    FG   FGA  …    FT%  ORB  \
0   1992-93   20  ORL  NBA   C  81  81  37.9   9.0  16.1  …  0.592  4.2
1   1993-94   21  ORL  NBA   C  81  81  39.8  11.8  19.6  …  0.554  4.7
2   1994-95   22  ORL  NBA   C  79  79  37.0  11.8  20.2  …  0.533  4.2
3   1995-96   23  ORL  NBA   C  54  52  36.0  11.0  19.1  …  0.487  3.4
4   1996-97   24  LAL  NBA   C  51  51  38.1  10.8  19.4  …  0.484  3.8
6   1998-99   26  LAL  NBA   C  49  49  34.8  10.4  18.1  …  0.540  3.8
7   1999-00   27  LAL  NBA   C  79  79  40.0  12.1  21.1  …  0.524  4.3
8   2000-01   28  LAL  NBA   C  74  74  39.5  11.0  19.2  …  0.513  3.9
9   2001-02   29  LAL  NBA   C  67  66  36.1  10.6  18.3  …  0.555  3.5
16  2008-09   36  PHO  NBA   C  75  75  30.0   6.8  11.2  …  0.595  2.5
17  2009-10   37  CLE  NBA   C  53  53  23.4   4.9   8.7  …  0.496  1.8

    DRB   TRB  AST  STL  BLK  TOV   PF   PTS
0   9.6  13.9  1.9  0.7  3.5  3.8  4.0  23.4
```

```
1   8.5  13.2  2.4  0.9  2.9  2.7  3.5  29.3
2   7.3  11.4  2.7  0.9  2.4  2.6  3.3  29.3
3   7.7  11.0  2.9  0.6  2.1  2.9  3.6  26.6
4   8.7  12.5  3.1  0.9  2.9  2.9  3.5  26.2
6   6.9  10.7  2.3  0.7  1.7  2.5  3.2  26.3
7   9.4  13.6  3.8  0.5  3.0  2.8  3.2  29.7
8   8.8  12.7  3.7  0.6  2.8  2.9  3.5  28.7
9   7.2  10.7  3.0  0.6  2.0  2.6  3.0  27.2
16  5.9   8.4  1.7  0.7  1.4  2.2  3.4  17.8
17  4.9   6.7  1.5  0.3  1.2  2.0  3.2  12.0

[11 rows x 30 columns]
     Season  Age Team   Lg Pos   G  GS    MP    FG   FGA  …    FT%  ORB  \
0   2003-04   19  CLE  NBA  SG  79  79  39.5   7.9  18.9  …  0.754  1.3
1   2004-05   20  CLE  NBA  SF  80  80  42.4   9.9  21.1  …  0.750  1.4
2   2005-06   21  CLE  NBA  SF  79  79  42.5  11.1  23.1  …  0.738  0.9
3   2006-07   22  CLE  NBA  SF  78  78  40.9   9.9  20.8  …  0.698  1.1
4   2007-08   23  CLE  NBA  SF  75  74  40.4  10.6  21.9  …  0.712  1.8
5   2008-09   24  CLE  NBA  SF  81  81  37.7   9.7  19.9  …  0.780  1.3
6   2009-10   25  CLE  NBA  SF  76  76  39.0  10.1  20.1  …  0.767  0.9
7   2010-11   26  MIA  NBA  SF  79  79  38.8   9.6  18.8  …  0.759  1.0
8   2011-12   27  MIA  NBA  SF  62  62  37.5  10.0  18.9  …  0.771  1.5
9   2012-13   28  MIA  NBA  PF  76  76  37.9  10.1  17.8  …  0.753  1.3
10  2013-14   29  MIA  NBA  PF  77  77  37.7  10.0  17.6  …  0.750  1.1
11  2014-15   30  CLE  NBA  SF  69  69  36.1   9.0  18.5  …  0.710  0.7
12  2015-16   31  CLE  NBA  SF  76  76  35.6   9.7  18.6  …  0.731  1.5
13  2016-17   32  CLE  NBA  SF  74  74  37.8   9.9  18.2  …  0.674  1.3
14  2017-18   33  CLE  NBA  PF  82  82  36.9  10.5  19.3  …  0.731  1.2
15  2018-19   34  LAL  NBA  SF  55  55  35.2  10.1  19.9  …  0.665  1.0
16  2019-20   35  LAL  NBA  PG  67  67  34.6   9.6  19.4  …  0.693  1.0
17  2020-21   36  LAL  NBA  PG  45  45  33.4   9.4  18.3  …  0.698  0.6

    DRB  TRB   AST  STL  BLK  TOV   PF   PTS
0   4.2  5.5   5.9  1.6  0.7  3.5  1.9  20.9
1   6.0  7.4   7.2  2.2  0.7  3.3  1.8  27.2
2   6.1  7.0   6.6  1.6  0.8  3.3  2.3  31.4
3   5.7  6.7   6.0  1.6  0.7  3.2  2.2  27.3
4   6.1  7.9   7.2  1.8  1.1  3.4  2.2  30.0
5   6.3  7.6   7.2  1.7  1.1  3.0  1.7  28.4
6   6.4  7.3   8.6  1.6  1.0  3.4  1.6  29.7
7   6.5  7.5   7.0  1.6  0.6  3.6  2.1  26.7
8   6.4  7.9   6.2  1.9  0.8  3.4  1.5  27.1
9   6.8  8.0   7.3  1.7  0.9  3.0  1.4  26.8
10  5.9  6.9   6.3  1.6  0.3  3.5  1.6  27.1
11  5.3  6.0   7.4  1.6  0.7  3.9  2.0  25.3
12  6.0  7.4   6.8  1.4  0.6  3.3  1.9  25.3
13  7.3  8.6   8.7  1.2  0.6  4.1  1.8  26.4
14  7.5  8.6   9.1  1.4  0.9  4.2  1.7  27.5
```

```
15  7.4  8.5   8.3  1.3  0.6  3.6  1.7  27.4
16  6.9  7.8  10.2  1.2  0.5  3.9  1.8  25.3
17  7.0  7.7   7.8  1.1  0.6  3.7  1.6  25.0

[18 rows x 30 columns]
     Season  Age Team   Lg Pos   G  GS    MP    FG   FGA  …    FT%  ORB  \
0   1996-97   18  LAL  NBA  SF  71   6  15.5   2.5   5.9  …  0.819  0.7
1   1997-98   19  LAL  NBA  SF  79   1  26.0   4.9  11.6  …  0.794  1.0
2   1998-99   20  LAL  NBA  SG  50  50  37.9   7.2  15.6  …  0.839  1.1
3   1999-00   21  LAL  NBA  SG  66  62  38.2   8.4  17.9  …  0.821  1.6
4   2000-01   22  LAL  NBA  SG  68  68  40.9  10.3  22.2  …  0.853  1.5
5   2001-02   23  LAL  NBA  SG  80  80  38.3   9.4  20.0  …  0.829  1.4
6   2002-03   24  LAL  NBA  SG  82  82  41.5  10.6  23.5  …  0.843  1.3
7   2003-04   25  LAL  NBA  SG  65  64  37.6   7.9  18.1  …  0.852  1.6
8   2004-05   26  LAL  NBA  SG  66  66  40.7   8.7  20.1  …  0.816  1.4
9   2005-06   27  LAL  NBA  SG  80  80  41.0  12.2  27.2  …  0.850  0.9
10  2006-07   28  LAL  NBA  SG  77  77  40.8  10.6  22.8  …  0.868  1.0
11  2007-08   29  LAL  NBA  SG  82  82  38.9   9.5  20.6  …  0.840  1.1
12  2008-09   30  LAL  NBA  SG  82  82  36.1   9.8  20.9  …  0.856  1.1
13  2009-10   31  LAL  NBA  SG  73  73  38.8   9.8  21.5  …  0.811  1.1
14  2010-11   32  LAL  NBA  SG  82  82  33.9   9.0  20.0  …  0.828  1.0
15  2011-12   33  LAL  NBA  SG  58  58  38.5   9.9  23.0  …  0.845  1.1
16  2012-13   34  LAL  NBA  SG  78  78  38.6   9.5  20.4  …  0.839  0.8
17  2013-14   35  LAL  NBA  SG   6   6  29.5   5.2  12.2  …  0.857  0.3
18  2014-15   36  LAL  NBA  SG  35  35  34.5   7.6  20.4  …  0.813  0.7
19  2015-16   37  LAL  NBA  SF  66  66  28.2   6.0  16.9  …  0.826  0.6

    DRB  TRB  AST  STL  BLK  TOV   PF   PTS
0   1.2  1.9  1.3  0.7  0.3  1.6  1.4   7.6
1   2.1  3.1  2.5  0.9  0.5  2.0  2.3  15.4
2   4.2  5.3  3.8  1.4  1.0  3.1  3.1  19.9
3   4.7  6.3  4.9  1.6  0.9  2.8  3.3  22.5
4   4.3  5.9  5.0  1.7  0.6  3.2  3.3  28.5
5   4.1  5.5  5.5  1.5  0.4  2.8  2.9  25.2
6   5.6  6.9  5.9  2.2  0.8  3.5  2.7  30.0
7   3.9  5.5  5.1  1.7  0.4  2.6  2.7  24.0
8   4.5  5.9  6.0  1.3  0.8  4.1  2.6  27.6
9   4.4  5.3  4.5  1.8  0.4  3.1  2.9  35.4
10  4.7  5.7  5.4  1.4  0.5  3.3  2.7  31.6
11  5.2  6.3  5.4  1.8  0.5  3.1  2.8  28.3
12  4.1  5.2  4.9  1.5  0.5  2.6  2.3  26.8
13  4.3  5.4  5.0  1.5  0.3  3.2  2.6  27.0
14  4.1  5.1  4.7  1.2  0.1  3.0  2.1  25.3
15  4.3  5.4  4.6  1.2  0.3  3.5  1.8  27.9
16  4.7  5.6  6.0  1.4  0.3  3.7  2.2  27.3
17  4.0  4.3  6.3  1.2  0.2  5.7  1.5  13.8
18  4.9  5.7  5.6  1.3  0.2  3.7  1.9  22.3
19  3.1  3.7  2.8  0.9  0.2  2.0  1.7  17.6
```

[20 rows x 30 columns]

	Season	Age	Team	Lg	Pos	G	GS	MP	FG	FGA	…	FT%	ORB	DRB	\
0	1998-99	20	DAL	NBA	PF	47	24	20.4	2.9	7.1	…	0.773	0.9	2.6	
1	1999-00	21	DAL	NBA	PF	82	81	35.8	6.3	13.6	…	0.830	1.2	5.2	
2	2000-01	22	DAL	NBA	PF	82	82	38.1	7.2	15.2	…	0.838	1.5	7.7	
3	2001-02	23	DAL	NBA	C	76	76	38.0	7.9	16.6	…	0.853	1.6	8.4	
4	2002-03	24	DAL	NBA	PF	80	80	39.0	8.6	18.6	…	0.881	1.0	8.9	
5	2003-04	25	DAL	NBA	C	77	77	37.9	7.9	17.0	…	0.877	1.2	7.5	
6	2004-05	26	DAL	NBA	PF	78	78	38.7	8.5	18.5	…	0.869	1.2	8.5	
7	2005-06	27	DAL	NBA	PF	81	81	38.1	9.3	19.3	…	0.901	1.4	7.6	
8	2006-07	28	DAL	NBA	PF	78	78	36.2	8.6	17.2	…	0.904	1.6	7.3	
9	2007-08	29	DAL	NBA	PF	77	77	36.0	8.2	17.1	…	0.879	1.2	7.3	
10	2008-09	30	DAL	NBA	PF	81	81	37.7	9.6	20.0	…	0.890	1.1	7.3	
11	2009-10	31	DAL	NBA	PF	81	80	37.5	8.9	18.5	…	0.915	1.0	6.7	
12	2010-11	32	DAL	NBA	PF	73	73	34.3	8.4	16.2	…	0.892	0.7	6.3	
13	2011-12	33	DAL	NBA	PF	62	62	33.5	7.6	16.7	…	0.896	0.7	6.0	
14	2012-13	34	DAL	NBA	PF	53	47	31.3	6.5	13.7	…	0.860	0.7	6.2	
15	2013-14	35	DAL	NBA	PF	80	80	32.9	7.9	15.9	…	0.899	0.5	5.7	
16	2014-15	36	DAL	NBA	PF	77	77	29.6	6.3	13.8	…	0.882	0.6	5.4	
17	2015-16	37	DAL	NBA	PF	75	75	31.5	6.6	14.8	…	0.893	0.7	5.8	
18	2016-17	38	DAL	NBA	PF	54	54	26.4	5.5	12.6	…	0.875	0.4	6.1	
19	2017-18	39	DAL	NBA	C	77	77	24.7	4.5	9.8	…	0.898	0.3	5.4	
20	2018-19	40	DAL	NBA	PF	51	20	15.6	2.6	7.4	…	0.780	0.1	3.0	

	TRB	AST	STL	BLK	TOV	PF	PTS
0	3.4	1.0	0.6	0.6	1.6	2.2	8.2
1	6.5	2.5	0.8	0.8	1.7	3.1	17.5
2	9.2	2.1	1.0	1.2	1.9	3.0	21.8
3	9.9	2.4	1.1	1.0	1.9	2.9	23.4
4	9.9	3.0	1.4	1.0	1.9	2.6	25.1
5	8.7	2.7	1.2	1.4	1.8	2.8	21.8
6	9.7	3.1	1.2	1.5	2.3	2.8	26.1
7	9.0	2.8	0.7	1.0	1.9	2.0	26.6
8	8.9	3.4	0.7	0.8	2.1	2.2	24.6
9	8.6	3.5	0.7	0.9	2.1	2.6	23.6
10	8.4	2.4	0.8	0.8	1.9	2.2	25.9
11	7.7	2.7	0.9	1.0	1.8	2.6	25.0
12	7.0	2.6	0.5	0.6	1.9	2.4	23.0
13	6.7	2.2	0.7	0.5	1.9	2.1	21.6
14	6.8	2.5	0.7	0.7	1.3	1.8	17.3
15	6.2	2.7	0.9	0.6	1.5	2.1	21.7
16	5.9	1.9	0.5	0.4	1.1	2.1	17.3
17	6.5	1.8	0.7	0.7	1.1	2.1	18.3
18	6.5	1.5	0.6	0.7	0.9	2.1	14.2
19	5.7	1.6	0.6	0.6	0.7	1.9	12.0
20	3.1	0.7	0.2	0.4	0.4	1.5	7.3

```
[21 rows x 30 columns]
     Season  Age Team   Lg Pos     G    GS    MP    FG   FGA  …    FT%  ORB  \
0   1984-85   21  CHI  NBA  SG  82.0  82.0  38.3  10.2  19.8  …  0.845  2.0
1   1985-86   22  CHI  NBA  SG  18.0   7.0  25.1   8.3  18.2  …  0.840  1.3
2   1986-87   23  CHI  NBA  SG  82.0  82.0  40.0  13.4  27.8  …  0.857  2.0
3   1987-88   24  CHI  NBA  SG  82.0  82.0  40.4  13.0  24.4  …  0.841  1.7
4   1988-89   25  CHI  NBA  SG  81.0  81.0  40.2  11.9  22.2  …  0.850  1.8
5   1989-90   26  CHI  NBA  SG  82.0  82.0  39.0  12.6  24.0  …  0.848  1.7
6   1990-91   27  CHI  NBA  SG  82.0  82.0  37.0  12.1  22.4  …  0.851  1.4
7   1991-92   28  CHI  NBA  SG  80.0  80.0  38.8  11.8  22.7  …  0.832  1.1
8   1992-93   29  CHI  NBA  SG  78.0  78.0  39.3  12.7  25.7  …  0.837  1.7
10  1994-95   31  CHI  NBA  SG  17.0  17.0  39.3   9.8  23.8  …  0.801  1.5
11  1995-96   32  CHI  NBA  SG  82.0  82.0  37.7  11.2  22.6  …  0.834  1.8
12  1996-97   33  CHI  NBA  SG  82.0  82.0  37.9  11.2  23.1  …  0.833  1.4
13  1997-98   34  CHI  NBA  SG  82.0  82.0  38.8  10.7  23.1  …  0.784  1.6
17  2001-02   38  WAS  NBA  SF  60.0  53.0  34.9   9.2  22.1  …  0.790  0.8
18  2002-03   39  WAS  NBA  SF  82.0  67.0  37.0   8.3  18.6  …  0.821  0.9

    DRB  TRB  AST  STL  BLK  TOV   PF   PTS
0   4.5  6.5  5.9  2.4  0.8  3.5  3.5  28.2
1   2.3  3.6  2.9  2.1  1.2  2.5  2.6  22.7
2   3.2  5.2  4.6  2.9  1.5  3.3  2.9  37.1
3   3.8  5.5  5.9  3.2  1.6  3.1  3.3  35.0
4   6.2  8.0  8.0  2.9  0.8  3.6  3.0  32.5
5   5.1  6.9  6.3  2.8  0.7  3.0  2.9  33.6
6   4.6  6.0  5.5  2.7  1.0  2.5  2.8  31.5
7   5.3  6.4  6.1  2.3  0.9  2.5  2.5  30.1
8   5.0  6.7  5.5  2.8  0.8  2.7  2.4  32.6
10  5.4  6.9  5.3  1.8  0.8  2.1  2.8  26.9
11  4.8  6.6  4.3  2.2  0.5  2.4  2.4  30.4
12  4.5  5.9  4.3  1.7  0.5  2.0  1.9  29.6
13  4.2  5.8  3.5  1.7  0.5  2.3  1.8  28.7
17  4.8  5.7  5.2  1.4  0.4  2.7  2.0  22.9
18  5.2  6.1  3.8  1.5  0.5  2.1  2.1  20.0

[15 rows x 30 columns]
     Season  Age Team   Lg Pos   G  GS    MP    FG   FGA  …    FT%  ORB  \
0   1985-86   22  UTA  NBA  PF  81  76  30.6   6.2  12.5  …  0.481  2.1
1   1986-87   23  UTA  NBA  PF  82  82  34.8   8.9  17.3  …  0.598  3.4
2   1987-88   24  UTA  NBA  PF  82  82  39.0  10.5  20.1  …  0.700  3.4
3   1988-89   25  UTA  NBA  PF  80  80  39.1  10.1  19.5  …  0.766  3.2
4   1989-90   26  UTA  NBA  PF  82  82  38.1  11.1  19.8  …  0.762  2.8
5   1990-91   27  UTA  NBA  PF  82  82  40.3  10.3  19.6  …  0.770  2.9
6   1991-92   28  UTA  NBA  PF  81  81  37.7   9.9  18.7  …  0.778  2.8
7   1992-93   29  UTA  NBA  PF  82  82  37.8   9.7  17.6  …  0.740  2.8
8   1993-94   30  UTA  NBA  PF  82  82  40.6   9.4  18.9  …  0.694  2.9
9   1994-95   31  UTA  NBA  PF  82  82  38.1  10.1  18.9  …  0.742  1.9
10  1995-96   32  UTA  NBA  PF  82  82  38.0   9.6  18.5  …  0.723  2.1
```

11	1996-97	33	UTA	NBA	PF	82	82	36.6	10.5	19.2	…	0.755	2.4
12	1997-98	34	UTA	NBA	PF	81	81	37.4	9.6	18.2	…	0.761	2.3
13	1998-99	35	UTA	NBA	PF	49	49	37.4	8.0	16.3	…	0.788	2.2
14	1999-00	36	UTA	NBA	PF	82	82	35.9	9.2	18.0	…	0.797	2.1
15	2000-01	37	UTA	NBA	PF	81	81	35.7	8.3	16.6	…	0.793	1.4
16	2001-02	38	UTA	NBA	PF	80	80	38.0	7.9	17.5	…	0.797	1.8
17	2002-03	39	UTA	NBA	PF	81	81	36.2	7.3	15.9	…	0.763	1.4
18	2003-04	40	LAL	NBA	PF	42	42	32.7	4.6	9.5	…	0.747	1.5

	DRB	TRB	AST	STL	BLK	TOV	PF	PTS
0	6.7	8.9	2.9	1.3	0.5	3.4	3.6	14.9
1	7.0	10.4	1.9	1.3	0.7	2.9	3.9	21.7
2	8.6	12.0	2.4	1.4	0.6	4.0	3.6	27.7
3	7.4	10.7	2.7	1.8	0.9	3.6	3.6	29.1
4	8.3	11.1	2.8	1.5	0.6	3.7	3.2	31.0
5	8.9	11.8	3.3	1.1	1.0	3.0	3.3	29.0
6	8.4	11.2	3.0	1.3	0.6	3.1	2.8	28.0
7	8.4	11.2	3.8	1.5	1.0	2.9	3.2	27.0
8	8.6	11.5	4.0	1.5	1.5	2.9	3.3	25.2
9	8.7	10.6	3.5	1.6	1.0	2.9	3.3	26.7
10	7.7	9.8	4.2	1.7	0.7	2.4	3.0	25.7
11	7.5	9.9	4.5	1.4	0.6	2.8	2.6	27.4
12	8.0	10.3	3.9	1.2	0.9	3.0	2.9	27.0
13	7.3	9.4	4.1	1.3	0.6	3.3	2.7	23.8
14	7.4	9.5	3.7	1.0	0.9	2.8	2.8	25.5
15	6.9	8.3	4.5	1.1	0.8	3.0	2.7	23.2
16	6.8	8.6	4.3	1.9	0.7	3.3	2.9	22.4
17	6.4	7.8	4.7	1.7	0.4	2.6	2.5	20.6
18	7.3	8.7	3.9	1.2	0.5	2.5	2.8	13.2

[19 rows x 30 columns]

[129]:
```
#Does a statistical analysis of player statistics#
#Looks at all stats at once to breakdown further#
print("Shaq O'Neal Descriptive Stats")
Shaq.describe()
```

```
Shaq O'Neal Descriptive Stats
```

[129]:

	Age	G	GS	MP	FG	FGA	\
count	11.000000	11.000000	11.000000	11.000000	11.000000	11.000000	
mean	26.636364	67.545455	67.272727	35.690909	10.018182	17.363636	
std	5.661673	13.170905	13.394707	4.968592	2.264870	3.919253	
min	20.000000	49.000000	49.000000	23.400000	4.900000	8.700000	
25%	22.500000	53.500000	52.500000	35.400000	9.700000	17.100000	
50%	26.000000	74.000000	74.000000	37.000000	10.800000	19.100000	
75%	28.500000	79.000000	79.000000	38.800000	11.400000	19.500000	

```
max    37.000000  81.000000  81.000000  40.000000  12.100000  21.100000

              FG%    3P        3PA        3P%  …        FT%        ORB  \
count   11.000000  11.0  11.000000  11.000000  …  11.000000  11.000000
mean     0.577273   0.0   0.018182   0.045455  …   0.533909   3.645455
std      0.015311   0.0   0.040452   0.150756  …   0.038284   0.840671
min      0.557000   0.0   0.000000   0.000000  …   0.484000   1.800000
25%      0.569000   0.0   0.000000   0.000000  …   0.504500   3.450000
50%      0.574000   0.0   0.000000   0.000000  …   0.533000   3.800000
75%      0.581000   0.0   0.000000   0.000000  …   0.554500   4.200000
max      0.609000   0.0   0.100000   0.500000  …   0.595000   4.700000

              DRB        TRB        AST        STL        BLK        TOV  \
count   11.000000  11.000000  11.000000  11.000000  11.000000  11.000000
mean     7.718182  11.345455   2.636364   0.672727   2.354545   2.718182
std      1.465482   2.223225   0.760622   0.184883   0.733980   0.462208
min      4.900000   6.700000   1.500000   0.300000   1.200000   2.000000
25%      7.050000  10.700000   2.100000   0.600000   1.850000   2.550000
50%      7.700000  11.400000   2.700000   0.700000   2.400000   2.700000
75%      8.750000  12.950000   3.050000   0.800000   2.900000   2.900000
max      9.600000  13.900000   3.800000   0.900000   3.500000   3.800000

              PF        PTS
count  11.000000  11.000000
mean    3.400000  25.136364
std     0.268328   5.536113
min     3.000000  12.000000
25%     3.200000  24.800000
50%     3.400000  26.600000
75%     3.500000  29.000000
max     4.000000  29.700000

[8 rows x 26 columns]
```

[130]:
```
print("LeBron James Descriptive Stats")
LeBron.describe()
```

```
LeBron James Descriptive Stats
```

[130]:
```
              Age          G         GS         MP         FG        FGA  \
count   18.000000  18.000000  18.000000  18.000000  18.000000  18.000000
mean    27.500000  72.777778  72.722222  37.994444   9.838889  19.505556
std      5.338539   9.867091   9.856652   2.535506   0.672256   1.462259
min     19.000000  45.000000  45.000000  33.400000   7.900000  17.600000
25%     23.250000  70.250000  70.250000  36.300000   9.625000  18.525000
50%     27.500000  76.000000  76.000000  37.750000   9.900000  19.100000
75%     31.750000  79.000000  79.000000  39.375000  10.100000  20.050000
```

```
max    36.000000  82.000000  82.000000  42.500000  11.100000  23.100000

              FG%         3P         3PA         3P%  …         FT%        ORB  \
count   18.000000  18.000000  18.000000   18.000000  …   18.000000  18.000000
mean     0.506000   1.538889   4.438889    0.344944  …    0.729667   1.161111
std      0.036856   0.401671   1.110452    0.027550  …    0.034181   0.299291
min      0.417000   0.800000   2.400000    0.290000  …    0.665000   0.600000
25%      0.485000   1.325000   3.750000    0.330750  …    0.701000   1.000000
50%      0.506500   1.550000   4.650000    0.346000  …    0.734500   1.150000
75%      0.528250   1.700000   4.975000    0.362750  …    0.753750   1.300000
max      0.567000   2.300000   6.300000    0.406000  …    0.780000   1.800000

              DRB        TRB        AST        STL        BLK        TOV  \
count   18.000000  18.000000  18.000000  18.000000  18.000000  18.000000
mean     6.322222   7.461111   7.433333   1.561111   0.733333   3.516667
std      0.804075   0.828279   1.162148   0.268194   0.208637   0.339983
min      4.200000   5.500000   5.900000   1.100000   0.300000   3.000000
25%      6.000000   7.075000   6.650000   1.400000   0.600000   3.300000
50%      6.350000   7.550000   7.200000   1.600000   0.700000   3.450000
75%      6.875000   7.900000   8.175000   1.675000   0.875000   3.675000
max      7.500000   8.600000  10.200000   2.200000   1.100000   4.200000

              PF         PTS
count   18.000000  18.000000
mean     1.822222  26.933333
std      0.255655   2.281125
min      1.400000  20.900000
25%      1.625000  25.575000
50%      1.800000  27.100000
75%      1.975000  27.475000
max      2.300000  31.400000

[8 rows x 26 columns]
```

[131]:
```
print("Kobe Bryant Descriptive Stats")
Kobe.describe()
```

```
Kobe Bryant Descriptive Stats
```

[131]:
```
             Age          G          GS          MP          FG         FGA  \
count   20.00000   20.00000   20.000000   20.000000   20.000000   20.000000
mean    27.50000   67.30000   59.900000   35.770000    8.450000   19.040000
std      5.91608   18.88497   26.867903    6.484402    2.329558    4.802894
min     18.00000    6.00000    1.000000   15.500000    2.500000    5.900000
25%     22.75000   65.75000   56.000000   34.350000    7.500000   17.650000
50%     27.50000   72.00000   67.000000   38.250000    9.200000   20.250000
75%     32.25000   80.00000   80.000000   39.350000    9.825000   21.675000
```

```
max    37.00000  82.00000  82.000000  41.500000  12.200000  27.200000

              FG%         3P         3PA         3P%  …         FT%         ORB  \
count   20.000000  20.000000  20.000000  20.000000  …   20.000000  20.000000
mean     0.441400   1.300000   4.060000   0.317700  …    0.834950   1.065000
std      0.030605   0.560075   1.587252   0.045534  …    0.018908   0.342245
min      0.358000   0.400000   1.700000   0.188000  …    0.794000   0.300000
25%      0.429500   0.850000   2.775000   0.300500  …    0.820500   0.875000
50%      0.451000   1.400000   4.100000   0.325500  …    0.839000   1.100000
75%      0.463250   1.725000   5.200000   0.344750  …    0.850500   1.325000
max      0.469000   2.300000   7.100000   0.383000  …    0.868000   1.600000

              DRB         TRB         AST         STL         BLK         TOV  \
count   20.000000  20.000000  20.000000  20.000000  20.000000  20.000000
mean     4.120000   5.200000   4.760000   1.410000   0.460000   3.130000
std      1.000316   1.160762   1.277909   0.350789   0.250053   0.864566
min      1.200000   1.900000   1.300000   0.700000   0.100000   1.600000
25%      4.075000   5.175000   4.575000   1.200000   0.300000   2.750000
50%      4.300000   5.450000   5.000000   1.400000   0.400000   3.100000
75%      4.700000   5.750000   5.525000   1.625000   0.525000   3.500000
max      5.600000   6.900000   6.300000   2.200000   1.000000   5.700000

              PF         PTS
count   20.00000  20.000000
mean     2.44000  24.200000
std      0.56884   6.611632
min      1.40000   7.600000
25%      2.05000  21.700000
50%      2.60000  26.050000
75%      2.82500  28.000000
max      3.30000  35.400000

[8 rows x 26 columns]
```

[132]:
```
print("Dirk Nowitzki Descriptive Stats")
Dirk.describe()
```

```
Dirk Nowitzki Descriptive Stats
```

[132]:
```
              Age          G         GS         MP         FG         FGA  \
count   21.000000  21.000000  21.000000  21.000000  21.000000  21.000000
mean    30.000000  72.476190  69.523810  33.009524   7.133333  15.219048
std      6.204837  11.435117  18.249984   6.448093   1.935803   3.598836
min     20.000000  47.000000  20.000000  15.600000   2.600000   7.100000
25%     25.000000  73.000000  73.000000  31.300000   6.300000  13.700000
50%     30.000000  77.000000  77.000000  35.800000   7.900000  16.200000
75%     35.000000  80.000000  80.000000  37.900000   8.500000  17.200000
```

```
max    40.000000  82.000000  82.000000  39.000000   9.600000  20.000000

              FG%         3P        3PA         3P%  …         FT%         ORB  \
count   21.000000  21.000000  21.00000  21.000000  …   21.000000  21.000000
mean     0.463000   1.290476   3.40000   0.374714  …    0.870714   0.933333
std      0.033393   0.424152   1.05119   0.046825  …    0.037940   0.427005
min      0.359000   0.300000   1.40000   0.206000  …    0.773000   0.100000
25%      0.457000   1.000000   2.90000   0.368000  …    0.860000   0.700000
50%      0.463000   1.300000   3.60000   0.380000  …    0.881000   1.000000
75%      0.479000   1.600000   4.10000   0.399000  …    0.896000   1.200000
max      0.517000   1.900000   4.90000   0.421000  …    0.915000   1.600000

              DRB        TRB        AST        STL        BLK        TOV  \
count   21.000000  21.000000  21.000000  21.000000  21.000000  21.000000
mean     6.423810   7.347619   2.338095   0.785714   0.819048   1.604762
std      1.613972   1.930186   0.724897   0.278003   0.297690   0.502470
min      2.600000   3.100000   0.700000   0.200000   0.400000   0.400000
25%      5.700000   6.500000   1.900000   0.600000   0.600000   1.300000
50%      6.300000   7.000000   2.500000   0.700000   0.800000   1.800000
75%      7.500000   8.900000   2.700000   0.900000   1.000000   1.900000
max      8.900000   9.900000   3.500000   1.400000   1.500000   2.300000

              PF        PTS
count   21.000000  21.000000
mean     2.338095  20.109524
std      0.424825   5.722054
min      1.500000   7.300000
25%      2.100000  17.300000
50%      2.200000  21.800000
75%      2.600000  24.600000
max      3.100000  26.600000

[8 rows x 26 columns]
```

[133]:
```
print("Michael Jordan Descriptive Stats")
MJ.describe()
```

```
Michael Jordan Descriptive Stats
```

[133]:
```
              Age          G         GS         MP         FG         FGA  \
count   15.000000  15.000000  15.000000  15.000000  15.000000  15.000000
mean    28.800000  71.466667  69.266667  37.580000  11.093333  22.700000
std      5.595917  22.617524  24.647418   3.739977   1.643371   2.497141
min     21.000000  17.000000   7.000000  25.100000   8.300000  18.200000
25%     24.500000  79.000000  72.500000  37.350000  10.000000  22.150000
50%     28.000000  82.000000  82.000000  38.800000  11.200000  22.700000
75%     32.500000  82.000000  82.000000  39.300000  12.350000  23.900000
```

```
max    39.000000  82.000000  82.000000  40.400000  13.400000  27.800000

              FG%         3P        3PA        3P%  …         FT%        ORB  \
count   15.000000  15.000000   15.00000  15.000000  …   15.000000  15.000000
mean     0.488267   0.540000    1.62000   0.283933  …    0.830933   1.513333
std      0.042286   0.479285    1.03868   0.106920  …    0.022429   0.366190
min      0.411000   0.100000    0.60000   0.132000  …    0.784000   0.800000
25%      0.461000   0.200000    0.85000   0.185500  …    0.826500   1.350000
50%      0.495000   0.300000    1.20000   0.276000  …    0.837000   1.600000
75%      0.522500   0.950000    2.40000   0.363000  …    0.846500   1.750000
max      0.539000   1.400000    3.60000   0.500000  …    0.857000   2.000000

              DRB        TRB        AST        STL        BLK        TOV  \
count   15.000000   15.00000  15.000000  15.000000  15.000000  15.000000
mean     4.593333    6.12000   5.140000   2.293333   0.833333   2.686667
std      0.949035    0.98067   1.284412   0.577515   0.363842   0.509715
min      2.300000    3.60000   2.900000   1.400000   0.400000   2.000000
25%      4.350000    5.75000   4.300000   1.750000   0.500000   2.350000
50%      4.800000    6.10000   5.300000   2.300000   0.800000   2.500000
75%      5.150000    6.65000   5.900000   2.800000   0.950000   3.050000
max      6.200000    8.00000   8.000000   3.200000   1.600000   3.600000

               PF         PTS
count   15.000000  15.000000
mean     2.593333  29.453333
std      0.503511   4.763832
min      1.800000  20.000000
25%      2.250000  27.550000
50%      2.600000  30.100000
75%      2.900000  32.550000
max      3.500000  37.100000

[8 rows x 26 columns]
```

[134]:
```
print("Karl Malone Descriptive Stats")
Karl.describe()
```

```
Karl Malone Descriptive Stats
```

[134]:
```
              Age          G         GS         MP         FG        FGA  \
count   19.000000  19.000000  19.000000  19.000000  19.000000  19.000000
mean    31.000000  77.684211  77.421053  37.052632   9.010526  17.505263
std      5.627314  11.421484  11.398420   2.427474   1.633638   2.627943
min     22.000000  42.000000  42.000000  30.600000   4.600000   9.500000
25%     26.500000  81.000000  80.500000  36.050000   8.150000  16.950000
50%     31.000000  82.000000  82.000000  37.700000   9.600000  18.200000
75%     35.500000  82.000000  82.000000  38.100000  10.100000  19.050000
```

```
max    40.000000  82.000000  82.000000  40.600000  11.100000  20.100000

              FG%         3P         3PA         3P%  …         FT%         ORB  \
count   19.000000  19.000000  19.000000  19.000000  …   19.000000  19.000000
mean     0.512895   0.042105   0.205263   0.201158  …    0.734474   2.389474
std      0.028639   0.069248   0.164903   0.153371  …    0.077112   0.639353
min      0.454000   0.000000   0.000000   0.000000  …    0.481000   1.400000
25%      0.496500   0.000000   0.100000   0.000000  …    0.731500   2.000000
50%      0.519000   0.000000   0.200000   0.250000  …    0.761000   2.300000
75%      0.528500   0.100000   0.250000   0.323000  …    0.774000   2.850000
max      0.562000   0.200000   0.500000   0.400000  …    0.797000   3.400000

             DRB        TRB        AST        STL        BLK        TOV  \
count   19.00000  19.000000  19.000000  19.000000  19.000000  19.000000
mean     7.70000  10.089474   3.584211   1.410526   0.763158   3.057895
std      0.76956   1.242263   0.783343   0.249209   0.256495   0.410035
min      6.40000   7.800000   1.900000   1.000000   0.400000   2.400000
25%      7.15000   9.150000   2.950000   1.250000   0.600000   2.850000
50%      7.50000  10.300000   3.800000   1.400000   0.700000   3.000000
75%      8.40000  11.150000   4.150000   1.550000   0.900000   3.300000
max      8.90000  12.000000   4.700000   1.900000   1.500000   4.000000

              PF        PTS
count  19.000000  19.000000
mean    3.089474  24.689474
std     0.395664   4.616624
min     2.500000  13.200000
25%     2.800000  22.800000
50%     3.000000  25.700000
75%     3.300000  27.550000
max     3.900000  31.000000

[8 rows x 26 columns]
```

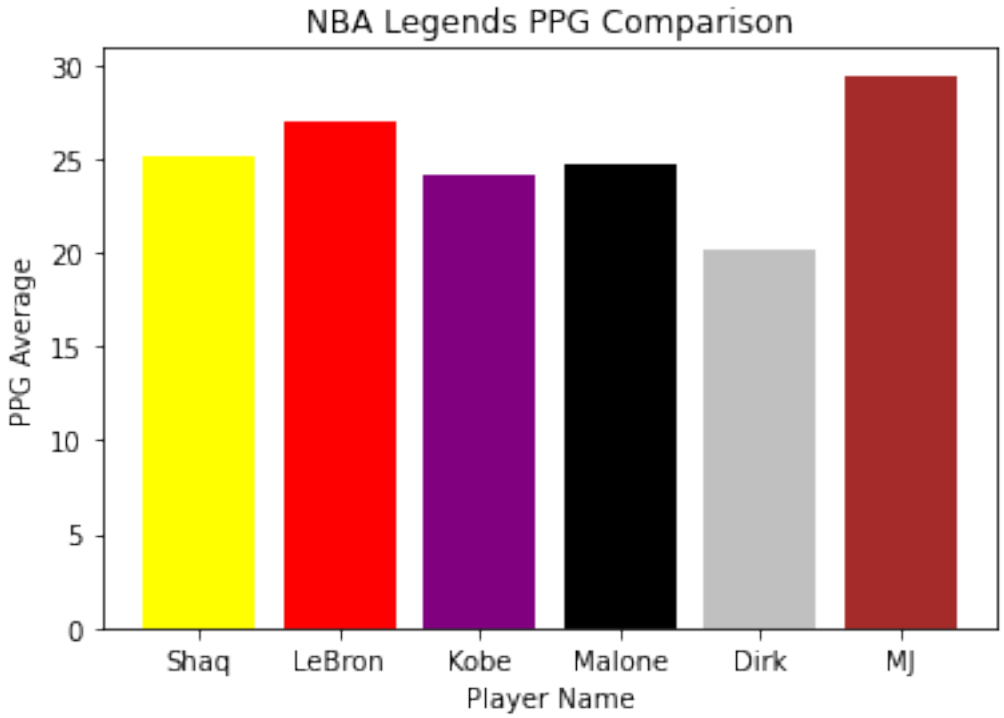
[135]:
```
#Taking a deeper look at Offensive Stats, looking at PTS, ORB, FG, FT%#
#Points Per Game Comparison Average#
print('Shaq ONeal Career Average Points:',Shaq['PTS'].mean())
print('LeBron James Career Average Points:',LeBron['PTS'].mean())
print('Kobe Bryant Career Average Points:',Kobe['PTS'].mean())
print('Dirk Nowitzki Career Average Points:',Dirk['PTS'].mean())
print('Michael Jordan Career Average Points:',MJ['PTS'].mean())
print('Karl Malone Career Average Points:',Karl['PTS'].mean())
```

```
Shaq ONeal Career Average Points: 25.13636363636363
LeBron James Career Average Points: 26.933333333333334
Kobe Bryant Career Average Points: 24.200000000000006
Dirk Nowitzki Career Average Points: 20.109523809523814
```

```
Michael Jordan Career Average Points: 29.45333333333333
Karl Malone Career Average Points: 24.689473684210526
```

[136]:
```
#Players PPG Comparison Chart#
ShaqPPG= Shaq['PTS'].mean()
LeBronPPG=LeBron['PTS'].mean()
KobePPG=Kobe['PTS'].mean()
DirkPPG=Dirk['PTS'].mean()
MJPPG=MJ['PTS'].mean()
KarlPPG=Karl['PTS'].mean()
plt.bar('Shaq',ShaqPPG, color= 'yellow', label='Shaq')
plt.bar('LeBron',LeBronPPG, color= 'red', label='LeBron')
plt.bar('Kobe',KobePPG, color= 'purple', label='Kobe')
plt.bar('Malone',KarlPPG, color= 'black', label='Malone')
plt.bar('Dirk',DirkPPG, color= 'silver', label='Dirk')
plt.bar('MJ',MJPPG, color= 'brown', label='MJ')
plt.xlabel('Player Name')
plt.ylabel('PPG Average')
plt.title('NBA Legends PPG Comparison')
```

[136]:
```
Text(0.5, 1.0, 'NBA Legends PPG Comparison')
```

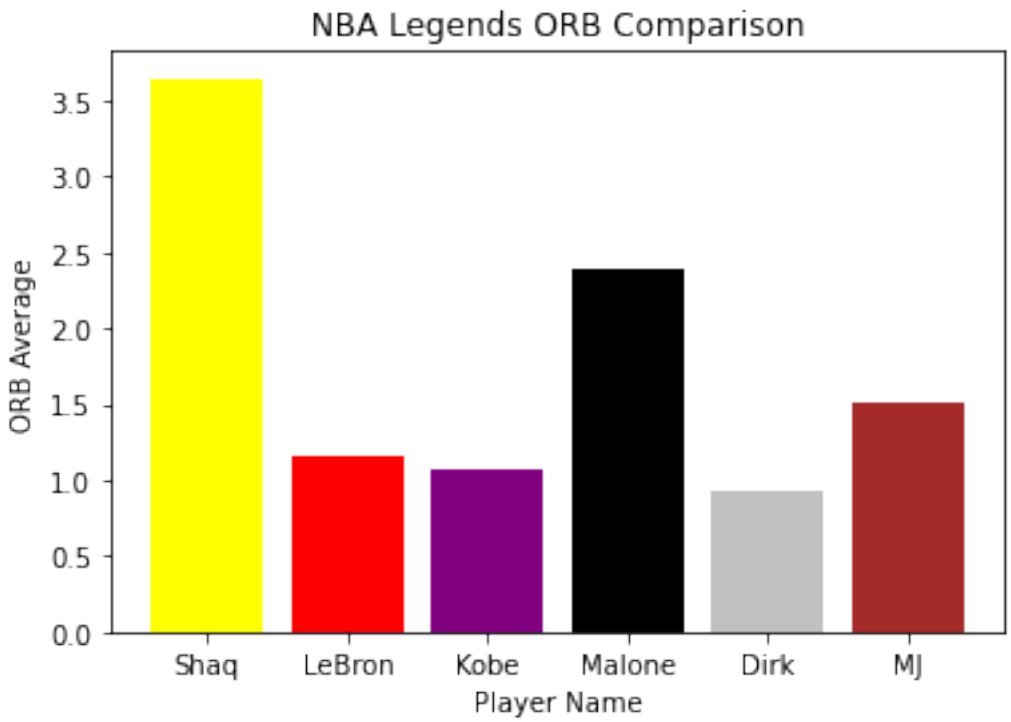


[137]:
```
#Offensive Rebounds Per Game Comparison Average#
print('Shaq ONeal Career Average Offensive Rebounds:',Shaq['ORB'].mean())
print('LeBron James Career Average Offensive Rebounds:',LeBron['ORB'].mean())
print('Kobe Bryant Career Average Offensive Rebounds:',Kobe['ORB'].mean())
print('Dirk Nowitzki Career Average Offensive Rebounds:',Dirk['ORB'].mean())
print('Michael Jordan Career Average Offensive Rebounds:',MJ['ORB'].mean())
print('Karl Malone Career Average Offensive Rebounds:',Karl['ORB'].mean())
```

```
Shaq ONeal Career Average Offensive Rebounds: 3.6454545454545455
LeBron James Career Average Offensive Rebounds: 1.161111111111111
Kobe Bryant Career Average Offensive Rebounds: 1.0650000000000002
Dirk Nowitzki Career Average Offensive Rebounds: 0.9333333333333332
Michael Jordan Career Average Offensive Rebounds: 1.5133333333333332
Karl Malone Career Average Offensive Rebounds: 2.389473684210526
```

[138]:
```
#Players ORB Comparison Chart#
ShaqORB= Shaq['ORB'].mean()
LeBronORB=LeBron['ORB'].mean()
KobeORB=Kobe['ORB'].mean()
DirkORB=Dirk['ORB'].mean()
MJORB=MJ['ORB'].mean()
KarlORB=Karl['ORB'].mean()
plt.bar('Shaq',ShaqORB, color= 'yellow', label='Shaq')
plt.bar('LeBron',LeBronORB, color= 'red', label='LeBron')
plt.bar('Kobe',KobeORB, color= 'purple', label='Kobe')
plt.bar('Malone',KarlORB, color= 'black', label='Malone')
plt.bar('Dirk',DirkORB, color= 'silver', label='Dirk')
plt.bar('MJ',MJORB, color= 'brown', label='MJ')
plt.xlabel('Player Name')
plt.ylabel('ORB Average')
plt.title('NBA Legends ORB Comparison')
```

[138]:
```
Text(0.5, 1.0, 'NBA Legends ORB Comparison')
```



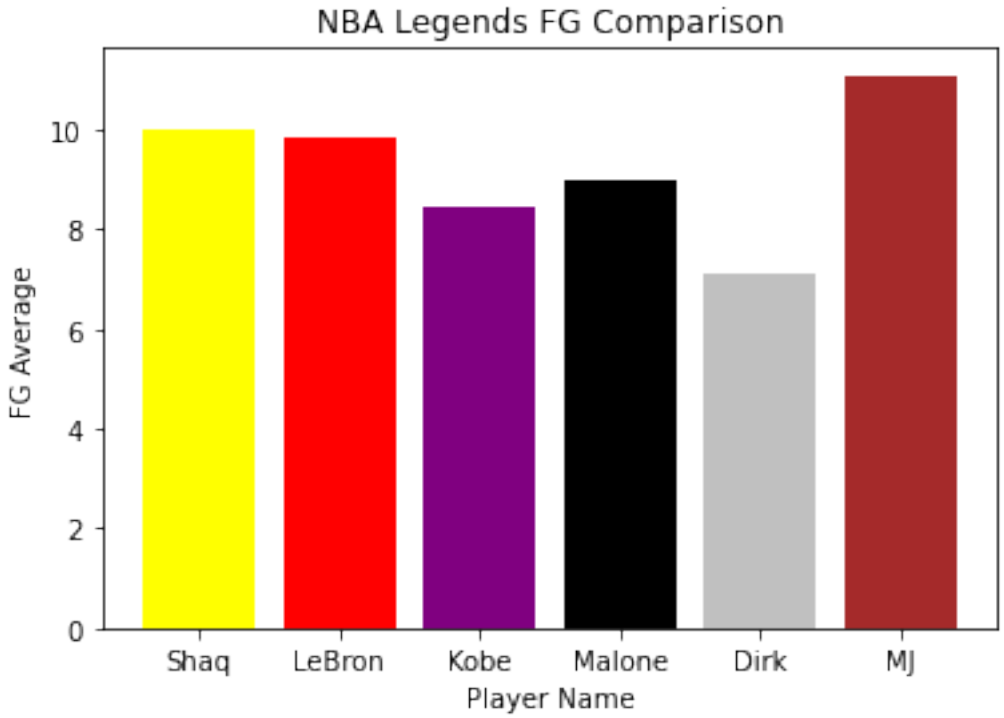
[139]:
```
#Field Goals Made Per Game Comparison Average#
print('Shaq ONeal Career Average Field Goals Made:',Shaq['FG'].mean())
print('LeBron James Career Average Field Goals Made:',LeBron['FG'].mean())
print('Kobe Bryant Career Average Field Goals Made:',Kobe['FG'].mean())
print('Dirk Nowitzki Career Average Field Goals Made:',Dirk['FG'].mean())
print('Michael Jordan Career Average Field Goals Made:',MJ['FG'].mean())
print('Karl Malone Career Average Field Goals Made:',Karl['FG'].mean())
```

```
Shaq ONeal Career Average Field Goals Made: 10.018181818181818
LeBron James Career Average Field Goals Made: 9.838888888888887
Kobe Bryant Career Average Field Goals Made: 8.45
Dirk Nowitzki Career Average Field Goals Made: 7.133333333333333
Michael Jordan Career Average Field Goals Made: 11.093333333333332
Karl Malone Career Average Field Goals Made: 9.010526315789475
```

[140]:
```
#Players FG Comparison Chart#
ShaqFG= Shaq['FG'].mean()
LeBronFG=LeBron['FG'].mean()
KobeFG=Kobe['FG'].mean()
DirkFG=Dirk['FG'].mean()
MJFG=MJ['FG'].mean()
KarlFG=Karl['FG'].mean()
plt.bar('Shaq',ShaqFG, color= 'yellow', label='Shaq')
plt.bar('LeBron',LeBronFG, color= 'red', label='LeBron')
```

```
plt.bar('Kobe',KobeFG, color= 'purple', label='Kobe')
plt.bar('Malone',KarlFG, color= 'black', label='Malone')
plt.bar('Dirk',DirkFG, color= 'silver', label='Dirk')
plt.bar('MJ',MJFG, color= 'brown', label='MJ')
plt.xlabel('Player Name')
plt.ylabel('FG Average')
plt.title('NBA Legends FG Comparison')
```

[140]: `Text(0.5, 1.0, 'NBA Legends FG Comparison')`

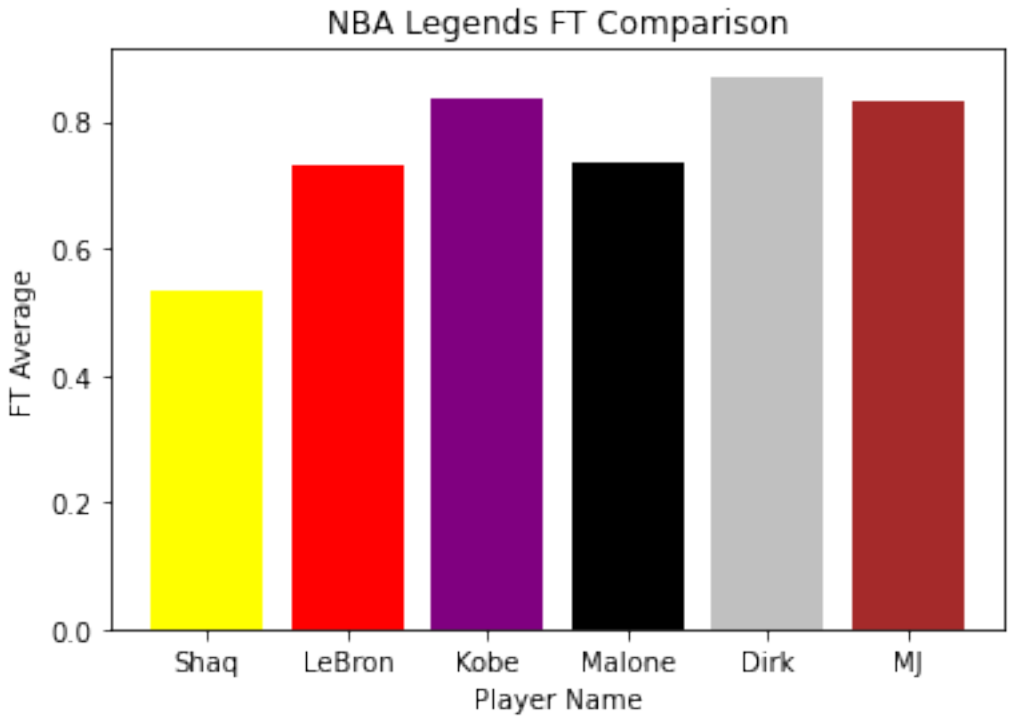


[141]:
```
#Free Throw Percentage Made Per Game Comparison Average#
print('Shaq ONeal Career Average Free Throw Percentage Made:',Shaq['FT%'].
 ↪mean())
print('LeBron James Career Average Free Throw Percentage Made:',LeBron['FT%'].
 ↪mean())
print('Kobe Bryant Career Average Free Throw Percentage Made:',Kobe['FT%'].
 ↪mean())
print('Dirk Nowitzki Career Average Free Throw Percentage Made:',Dirk['FT%'].
 ↪mean())
print('Michael Jordan Career Average Free Throw Percentage Made:',MJ['FT%'].
 ↪mean())
print('Karl Malone Career Average Free Throw Percentage Made:',Karl['FT%'].
 ↪mean())
```

```
Shaq ONeal Career Average Free Throw Percentage Made: 0.5339090909090909
LeBron James Career Average Free Throw Percentage Made: 0.7296666666666666
Kobe Bryant Career Average Free Throw Percentage Made: 0.8349499999999999
Dirk Nowitzki Career Average Free Throw Percentage Made: 0.8707142857142858
Michael Jordan Career Average Free Throw Percentage Made: 0.8309333333333334
Karl Malone Career Average Free Throw Percentage Made: 0.7344736842105263
```

[189]:
```
#Players PPG Comparison Chart#
ShaqFT= Shaq['FT%'].mean()
LeBronFT=LeBron['FT%'].mean()
KobeFT=Kobe['FT%'].mean()
DirkFT=Dirk['FT%'].mean()
MJFT=MJ['FT%'].mean()
KarlFT=Karl['FT%'].mean()
plt.bar('Shaq',ShaqFT, color= 'yellow', label='Shaq')
plt.bar('LeBron',LeBronFT, color= 'red', label='LeBron')
plt.bar('Kobe',KobeFT, color= 'purple', label='Kobe')
plt.bar('Malone',KarlFT, color= 'black', label='Malone')
plt.bar('Dirk',DirkFT, color= 'silver', label='Dirk')
plt.bar('MJ',MJFT, color= 'brown', label='MJ')
plt.xlabel('Player Name')
plt.ylabel('FT Average')
plt.title('NBA Legends FT Comparison')
```

[189]:
```
Text(0.5, 1.0, 'NBA Legends FT Comparison')
```



[143]:
```
#Creates Regression Data for Age vs PPG#
#Below will show this for each basketball legend#
X1 = Shaq.Age
X1 = sm.add_constant(X1)

Y1 = Shaq.PTS
mod3 = sm.OLS(Y1,X1)
res3 = mod3.fit()
print('Shaq ONeal Regression')

print(res3.summary())
```

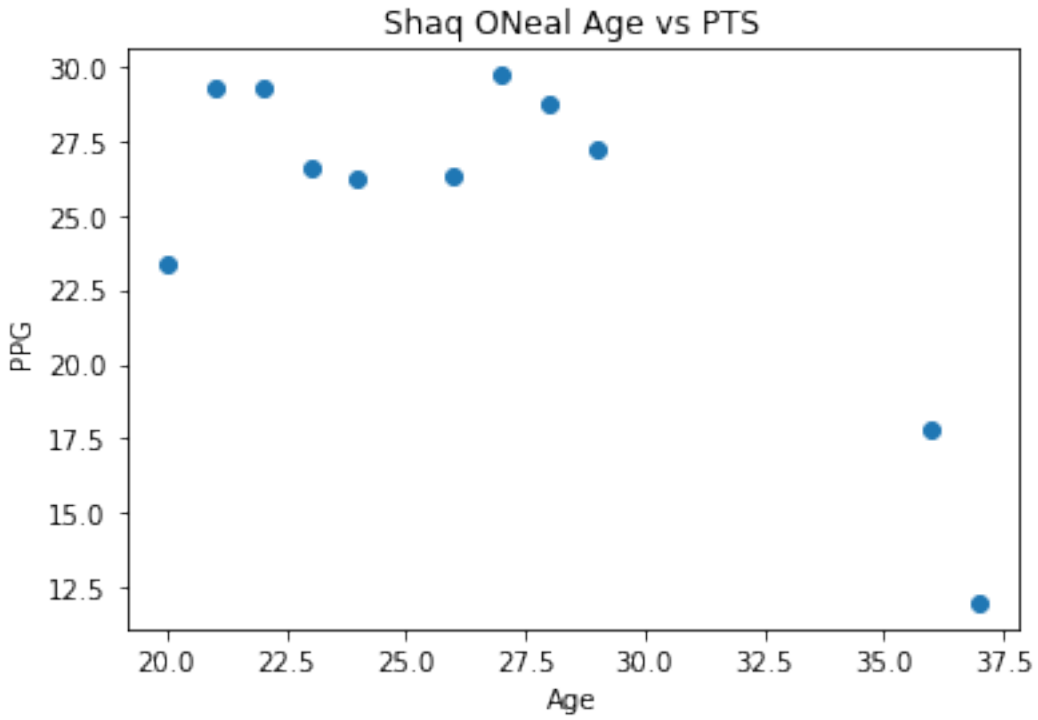
```
Shaq ONeal Regression
                            OLS Regression Results
==============================================================================
Dep. Variable:                    PTS   R-squared:                       0.555
Model:                            OLS   Adj. R-squared:                  0.506
Method:                 Least Squares   F-statistic:                     11.24
Date:                Sun, 27 Jun 2021   Prob (F-statistic):            0.00850
Time:                        10:36:07   Log-Likelihood:                -29.452
No. Observations:                  11   AIC:                             62.90
Df Residuals:                       9   BIC:                             63.70
Df Model:                           1
Covariance Type:            nonrobust
==============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
------------------------------------------------------------------------------
const         44.5440      5.908      7.540      0.000      31.180      57.908
Age           -0.7286      0.217     -3.352      0.008      -1.220      -0.237
==============================================================================
Omnibus:                        0.570   Durbin-Watson:                   0.828
Prob(Omnibus):                  0.752   Jarque-Bera (JB):                0.488
Skew:                          -0.413   Prob(JB):                        0.783
Kurtosis:                       2.381   Cond. No.                         137.
==============================================================================

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly
specified.
```

```
/Users/Brett/opt/anaconda3/lib/python3.8/site-
packages/scipy/stats/stats.py:1603: UserWarning: kurtosistest only valid for
n>=20 … continuing anyway, n=11
  warnings.warn("kurtosistest only valid for n>=20 … continuing "
```

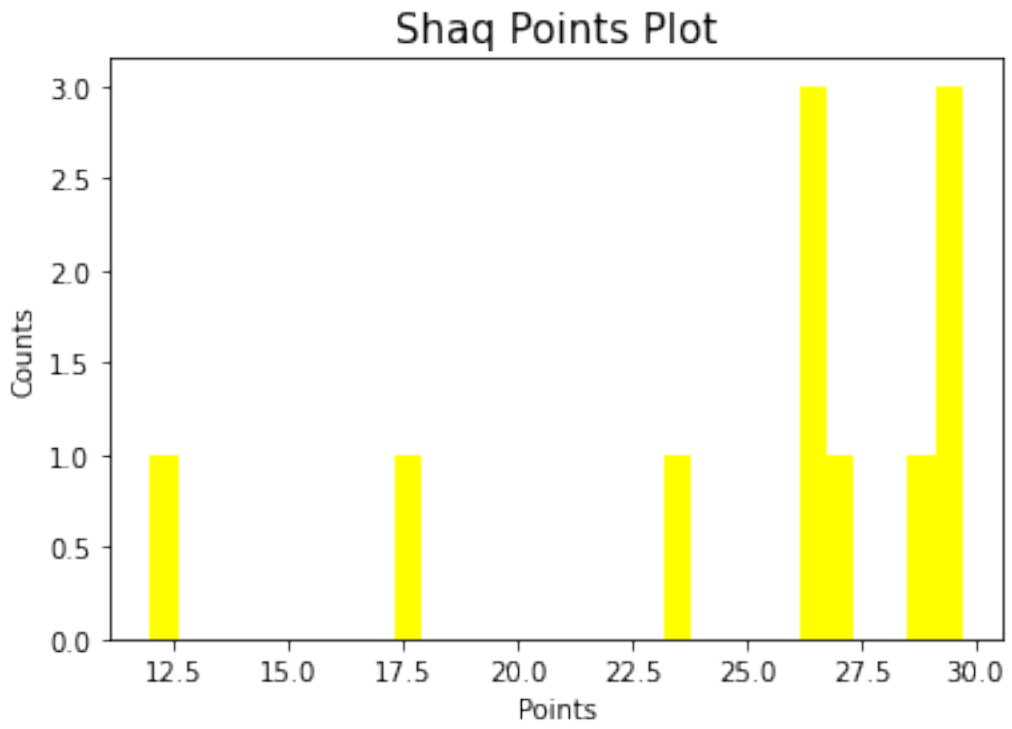
[144]:
```
plt.scatter(x=Shaq['Age'], y=Shaq['PTS'])
plt.xlabel('Age')
plt.ylabel('PPG')
plt.title('Shaq ONeal Age vs PTS')
```

[144]: Text(0.5, 1.0, 'Shaq ONeal Age vs PTS')



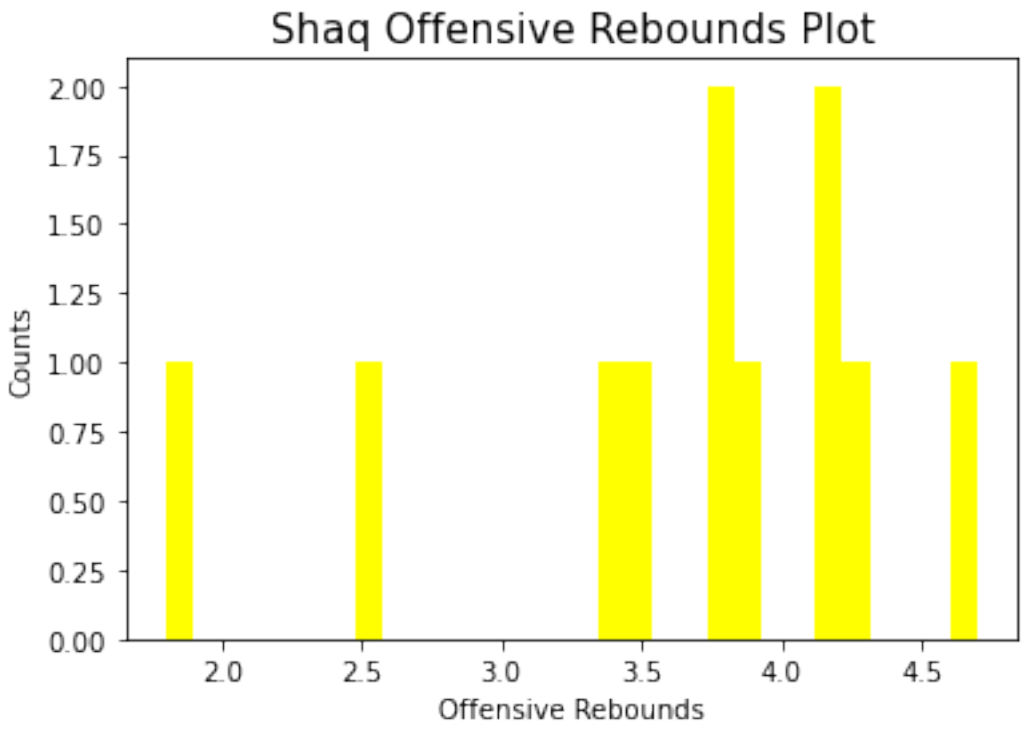
[145]:
```
plt.hist(Shaq['PTS'], bins = 30, color='yellow')
plt.xlabel('Points', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('Shaq Points Plot',fontsize=15)
```

[145]: Text(0.5, 1.0, 'Shaq Points Plot')



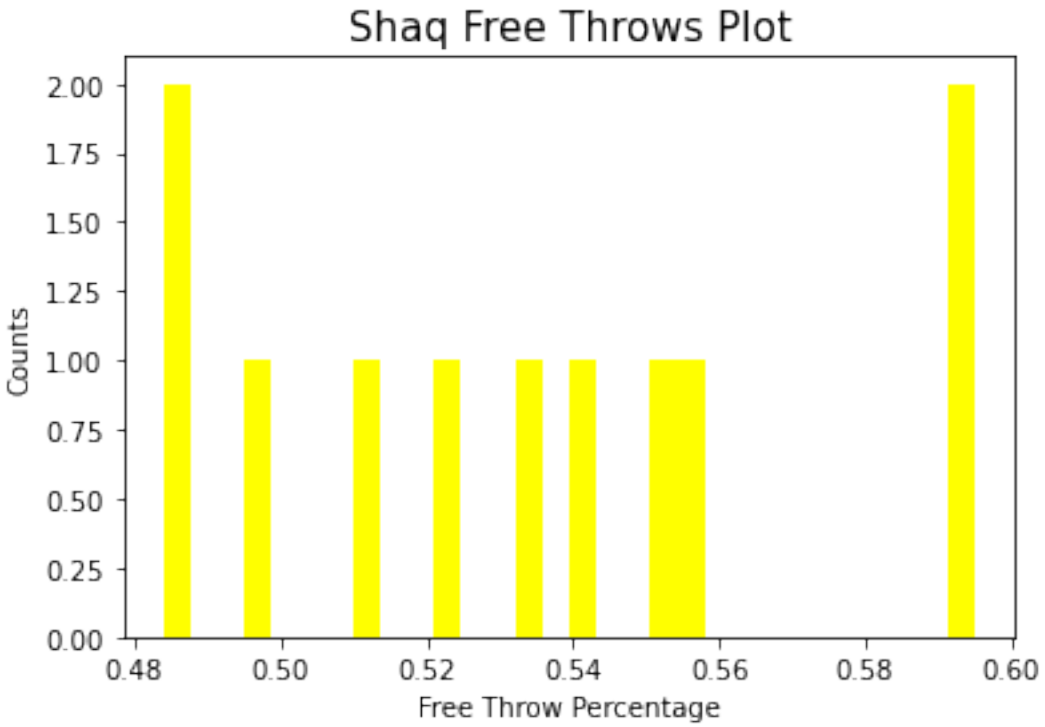
[146]:
```
plt.hist(Shaq['ORB'], bins = 30, color='yellow')
plt.xlabel('Offensive Rebounds', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('Shaq Offensive Rebounds Plot',fontsize=15)
```

[146]:
```
Text(0.5, 1.0, 'Shaq Offensive Rebounds Plot')
```



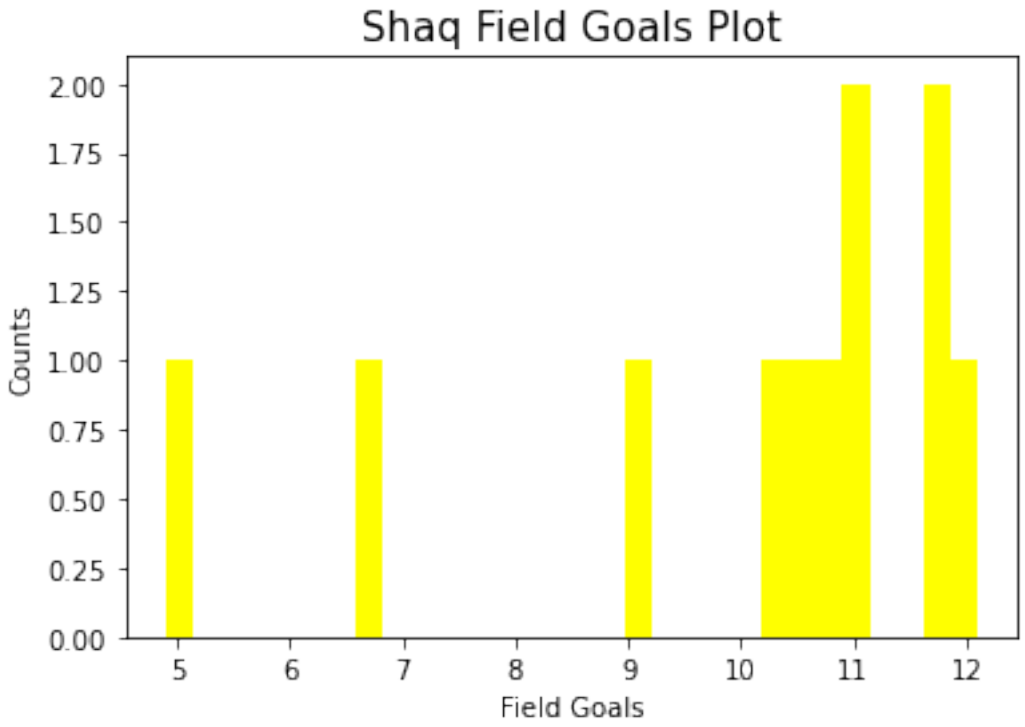
[147]:
```
plt.hist(Shaq['FT%'], bins = 30, color='yellow')
plt.xlabel('Free Throw Percentage', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('Shaq Free Throws Plot',fontsize=15)
```

[147]:
```
Text(0.5, 1.0, 'Shaq Free Throws Plot')
```



[148]:
```
plt.hist(Shaq['FG'], bins = 30, color='yellow')
plt.xlabel('Field Goals', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('Shaq Field Goals Plot',fontsize=15)
```

[148]: Text(0.5, 1.0, 'Shaq Field Goals Plot')



[149]:
```
X2 = LeBron.Age
X2 = sm.add_constant(X2)

Y2 = LeBron.PTS
mod3 = sm.OLS(Y2,X2)
res3 = mod3.fit()
print('LeBron James Regression')

print(res3.summary())
```

```
LeBron James Regression
                            OLS Regression Results
==============================================================================
Dep. Variable:                    PTS   R-squared:                       0.041
Model:                            OLS   Adj. R-squared:                 -0.019
Method:                 Least Squares   F-statistic:                    0.6834
Date:                Sun, 27 Jun 2021   Prob (F-statistic):              0.421
Time:                        10:36:11   Log-Likelihood:                -39.494
No. Observations:                  18   AIC:                             82.99
Df Residuals:                      16   BIC:                             84.77
Df Model:                           1
Covariance Type:            nonrobust
==============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
```

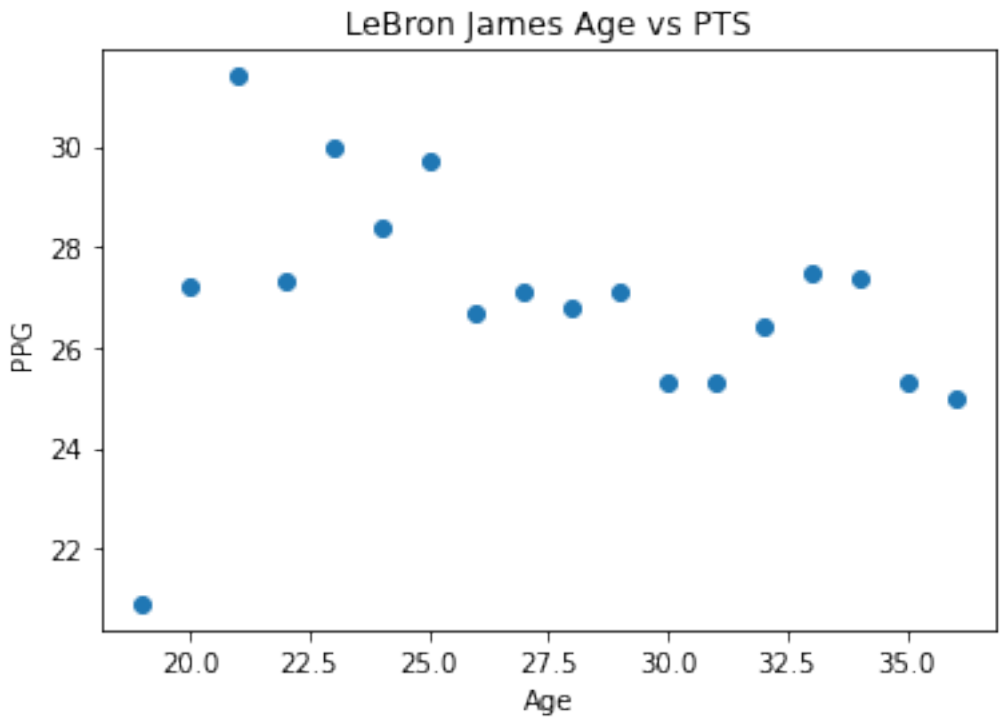
```
------------------------------------------------------------------------------
const         29.3116      2.928     10.012      0.000      23.105      35.518
Age           -0.0865      0.105     -0.827      0.421      -0.308       0.135
==============================================================================
Omnibus:                       12.487   Durbin-Watson:                   1.250
Prob(Omnibus):                  0.002   Jarque-Bera (JB):               11.447
Skew:                          -1.189   Prob(JB):                      0.00327
Kurtosis:                       6.100   Cond. No.                        151.
==============================================================================

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly
specified.
```

```
/Users/Brett/opt/anaconda3/lib/python3.8/site-
packages/scipy/stats/stats.py:1603: UserWarning: kurtosistest only valid for
n>=20 … continuing anyway, n=18
  warnings.warn("kurtosistest only valid for n>=20 … continuing "
```

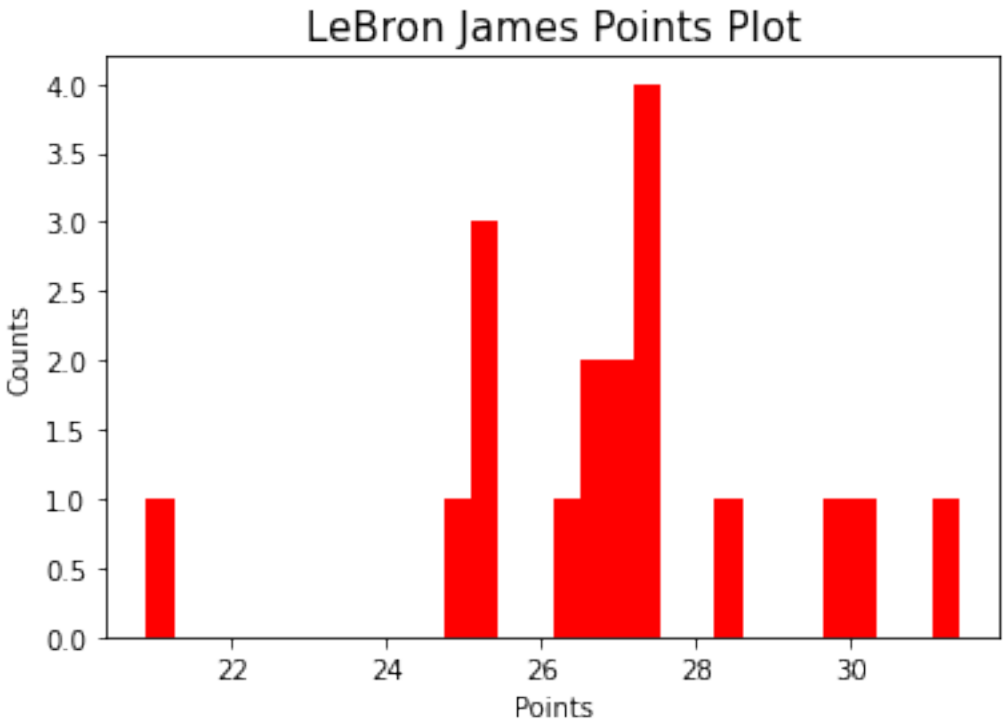
[150]:
```
plt.scatter(x=LeBron['Age'], y=LeBron['PTS'])
plt.xlabel('Age')
plt.ylabel('PPG')
plt.title('LeBron James Age vs PTS')
```

[150]: Text(0.5, 1.0, 'LeBron James Age vs PTS')



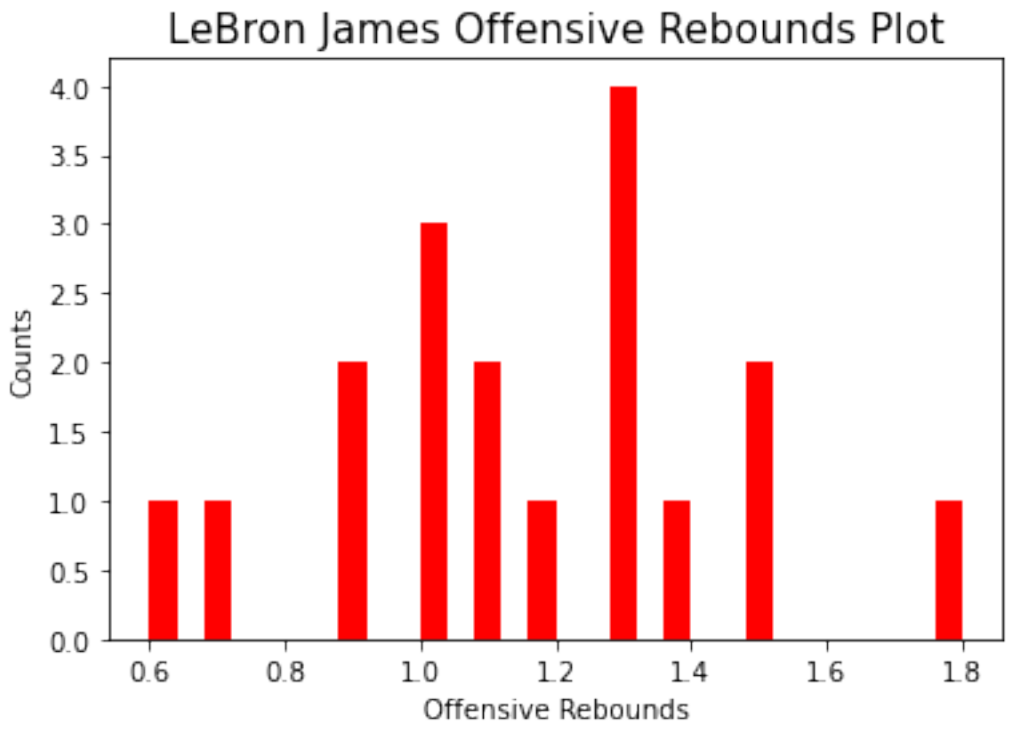
[151]:
```
plt.hist(LeBron['PTS'], bins = 30, color='red')
plt.xlabel('Points', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('LeBron James Points Plot',fontsize=15)
```

[151]: Text(0.5, 1.0, 'LeBron James Points Plot')



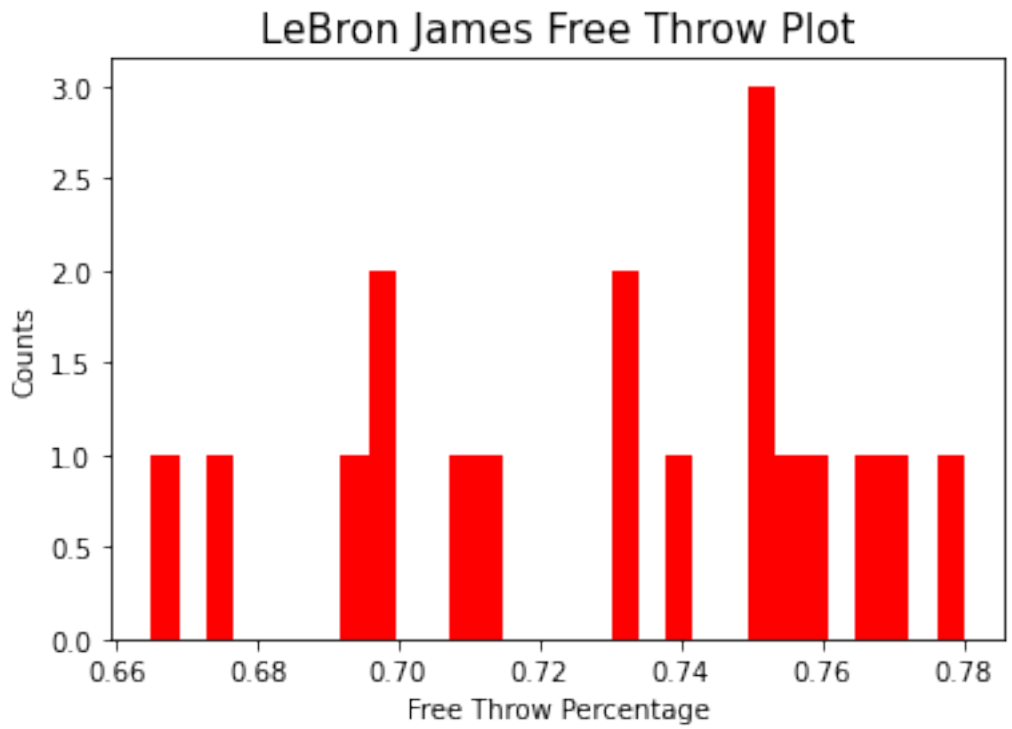
[152]:
```
plt.hist(LeBron['ORB'], bins = 30, color='red')
plt.xlabel('Offensive Rebounds', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('LeBron James Offensive Rebounds Plot',fontsize=15)
```

[152]: Text(0.5, 1.0, 'LeBron James Offensive Rebounds Plot')



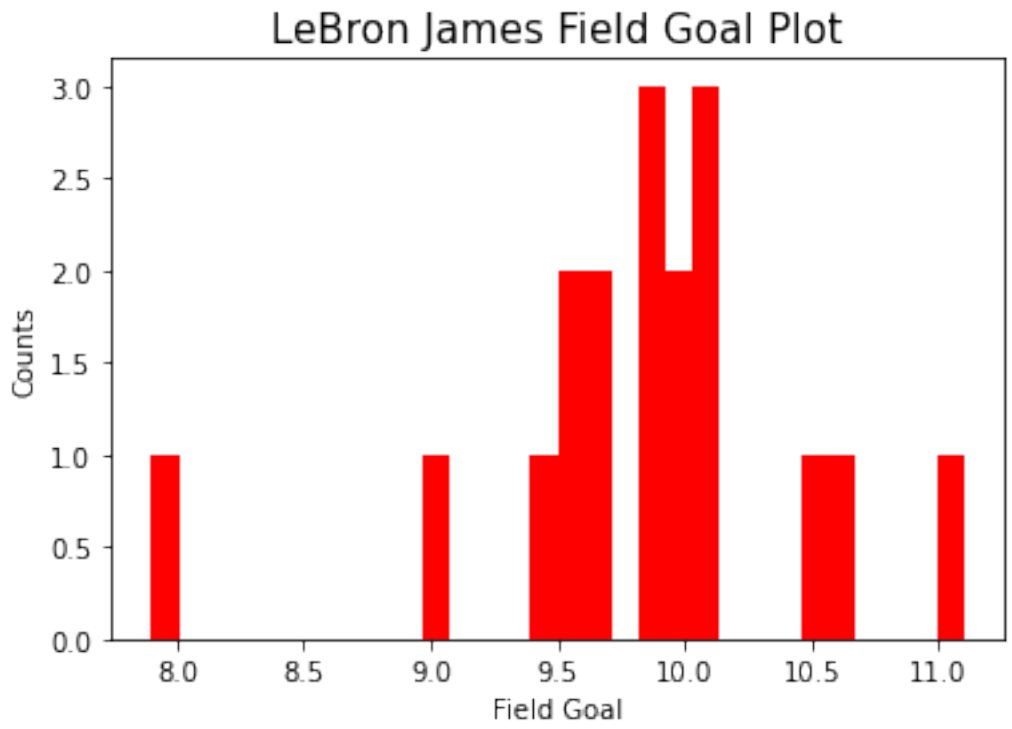
[153]:
```
plt.hist(LeBron['FT%'], bins = 30, color='red')
plt.xlabel('Free Throw Percentage', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('LeBron James Free Throw Plot',fontsize=15)
```

[153]: Text(0.5, 1.0, 'LeBron James Free Throw Plot')



[154]:
```
plt.hist(LeBron['FG'], bins = 30, color='red')
plt.xlabel('Field Goal', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('LeBron James Field Goal Plot',fontsize=15)
```

[154]: Text(0.5, 1.0, 'LeBron James Field Goal Plot')



[155]:
```
X3 = Karl.Age
X3 = sm.add_constant(X3)

Y3 = Karl.PTS
mod3 = sm.OLS(Y3,X3)
res3 = mod3.fit()
print('Karl Malone Regression')

print(res3.summary())
```

```
Karl Malone Regression
                            OLS Regression Results
==============================================================================
Dep. Variable:                    PTS   R-squared:                       0.098
Model:                            OLS   Adj. R-squared:                  0.045
Method:                 Least Squares   F-statistic:                     1.853
Date:                Sun, 27 Jun 2021   Prob (F-statistic):              0.191
Time:                        10:36:15   Log-Likelihood:                -54.527
No. Observations:                  19   AIC:                             113.1
Df Residuals:                      17   BIC:                             114.9
Df Model:                           1
Covariance Type:            nonrobust
==============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
```

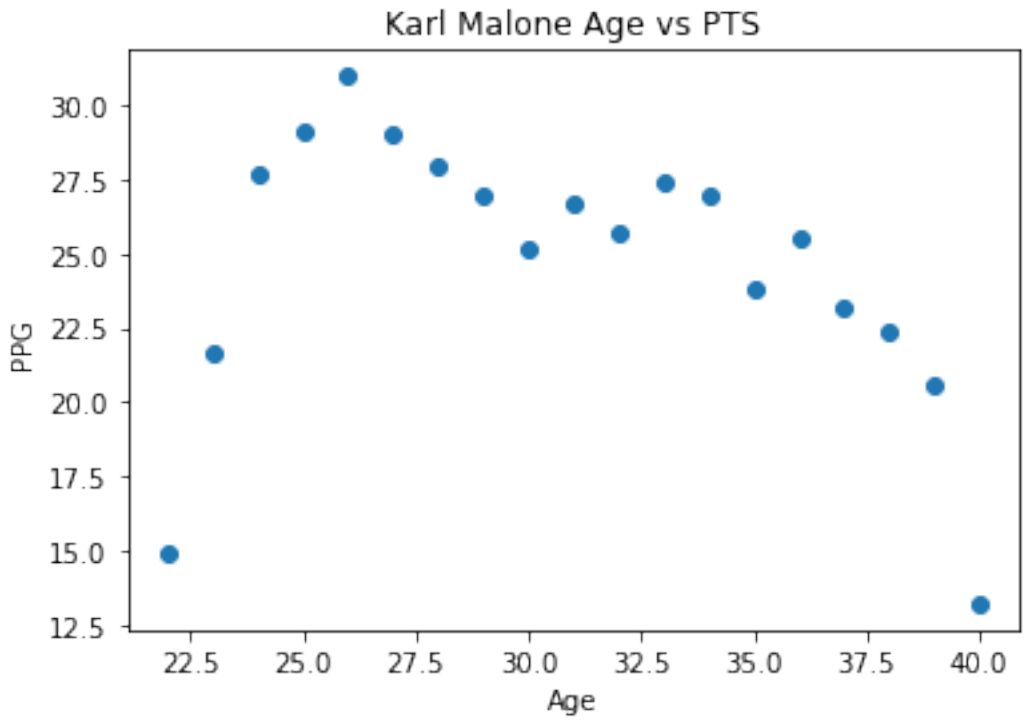
```
------------------------------------------------------------------------------
const         32.6625      5.948       5.491      0.000      20.113      45.212
Age           -0.2572      0.189      -1.361      0.191      -0.656       0.141
==============================================================================
Omnibus:                       13.331   Durbin-Watson:                   0.522
Prob(Omnibus):                  0.001   Jarque-Bera (JB):               10.917
Skew:                          -1.620   Prob(JB):                      0.00426
Kurtosis:                       4.815   Cond. No.                        181.
==============================================================================

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly
specified.

/Users/Brett/opt/anaconda3/lib/python3.8/site-
packages/scipy/stats/stats.py:1603: UserWarning: kurtosistest only valid for
n>=20 … continuing anyway, n=19
  warnings.warn("kurtosistest only valid for n>=20 … continuing "
```

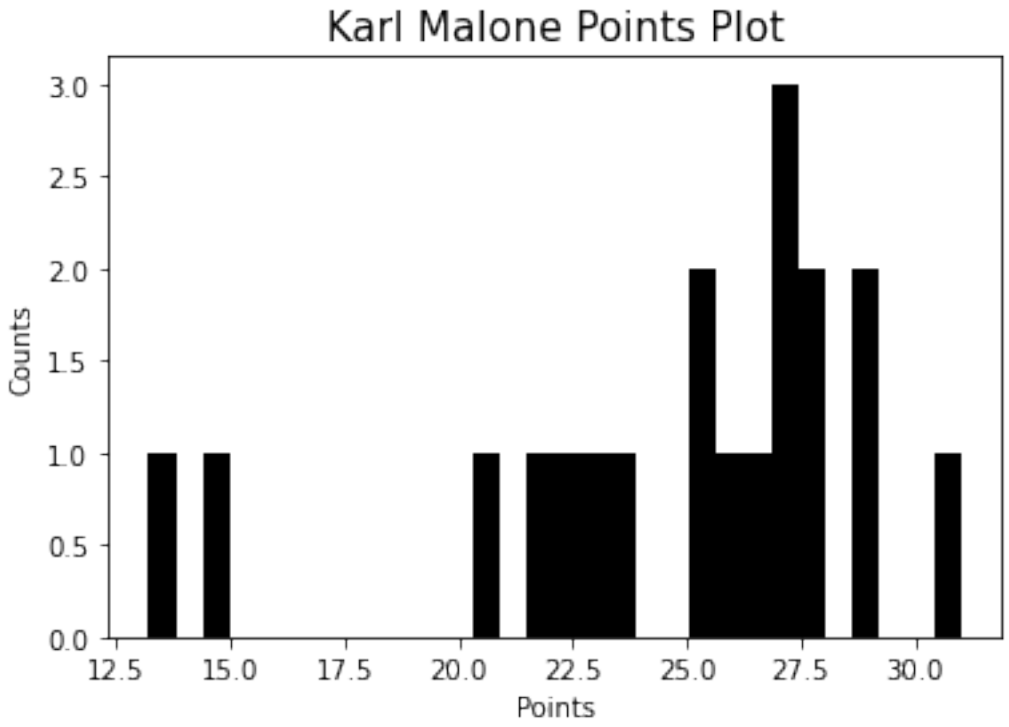
[156]:
```
plt.scatter(x=Karl['Age'], y=Karl['PTS'])
plt.xlabel('Age')
plt.ylabel('PPG')
plt.title('Karl Malone Age vs PTS')
```

[156]: Text(0.5, 1.0, 'Karl Malone Age vs PTS')



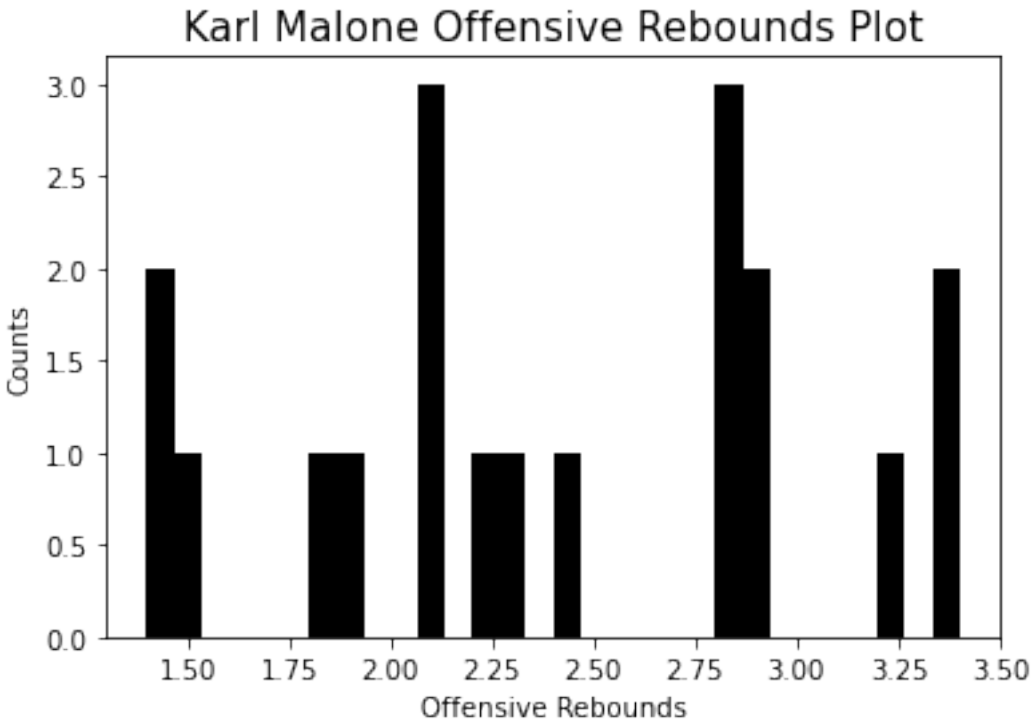
[167]:
```
plt.hist(Karl['PTS'], bins = 30, color='black')
plt.xlabel('Points', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('Karl Malone Points Plot',fontsize=15)
```

[167]: Text(0.5, 1.0, 'Karl Malone Points Plot')



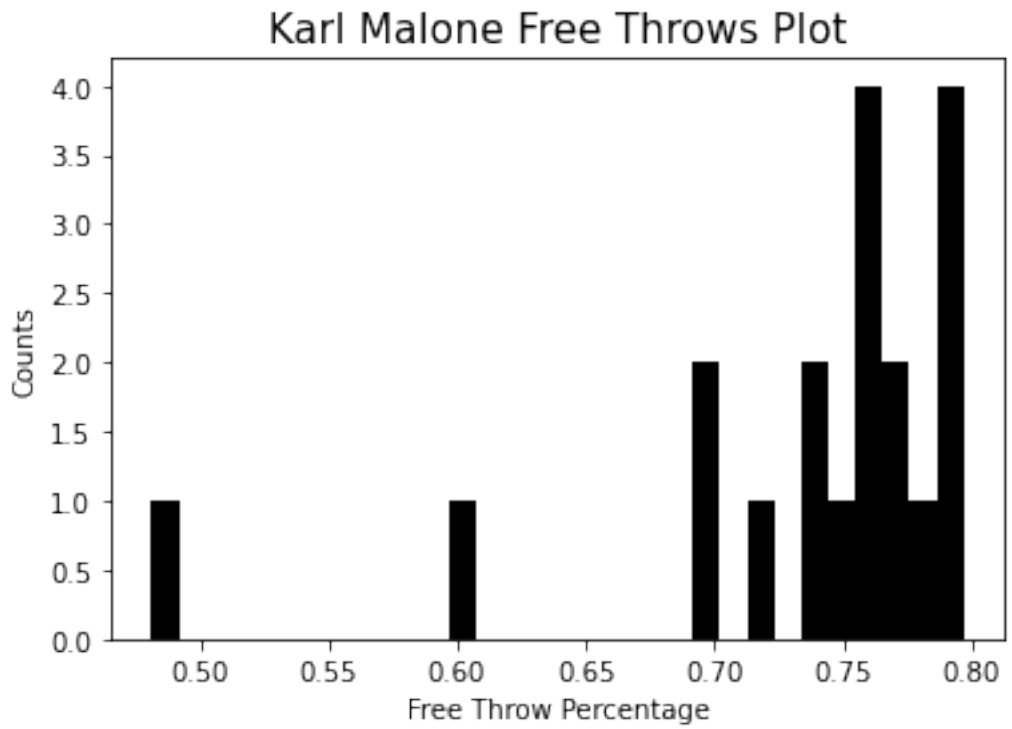
[168]:
```
plt.hist(Karl['ORB'], bins = 30, color='black')
plt.xlabel('Offensive Rebounds', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('Karl Malone Offensive Rebounds Plot',fontsize=15)
```

[168]: Text(0.5, 1.0, 'Karl Malone Offensive Rebounds Plot')



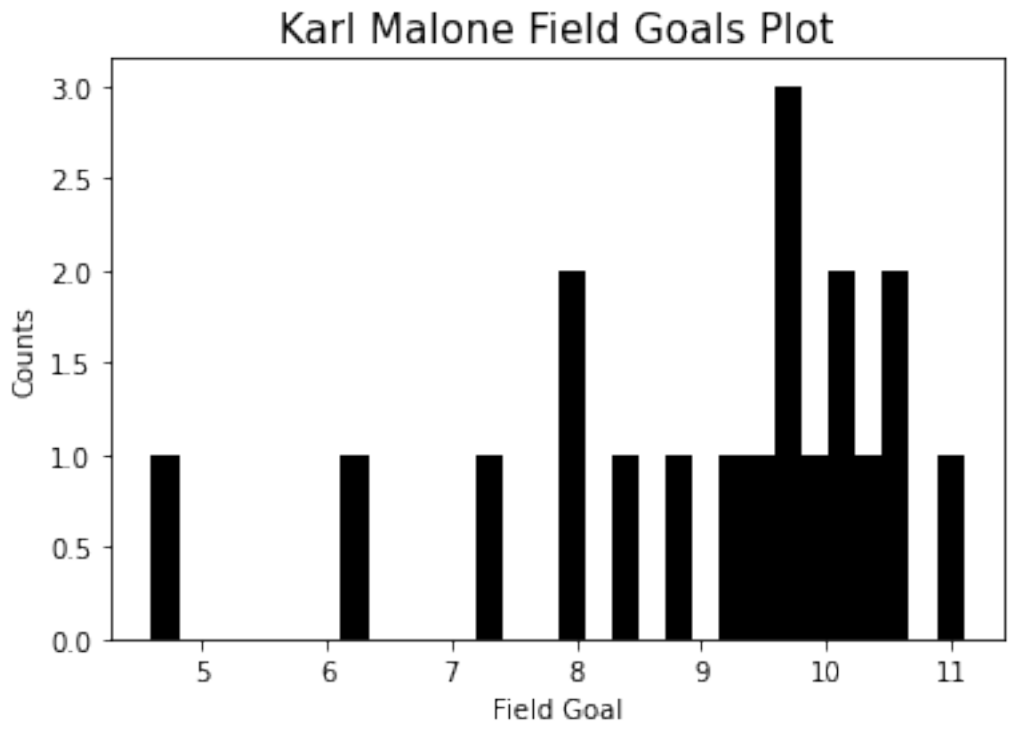
[169]:
```
plt.hist(Karl['FT%'], bins = 30, color='black')
plt.xlabel('Free Throw Percentage', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('Karl Malone Free Throws Plot',fontsize=15)
```

[169]:
```
Text(0.5, 1.0, 'Karl Malone Free Throws Plot')
```



[170]:
```
plt.hist(Karl['FG'], bins = 30, color='black')
plt.xlabel('Field Goal', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('Karl Malone Field Goals Plot',fontsize=15)
```

[170]: Text(0.5, 1.0, 'Karl Malone Field Goals Plot')



[171]:
```
X4 = Kobe.Age
X4 = sm.add_constant(X4)

Y4 = Kobe.PTS
mod3 = sm.OLS(Y4,X4)
res3 = mod3.fit()
print('Kobe Bryant Regression')

print(res3.summary())
```

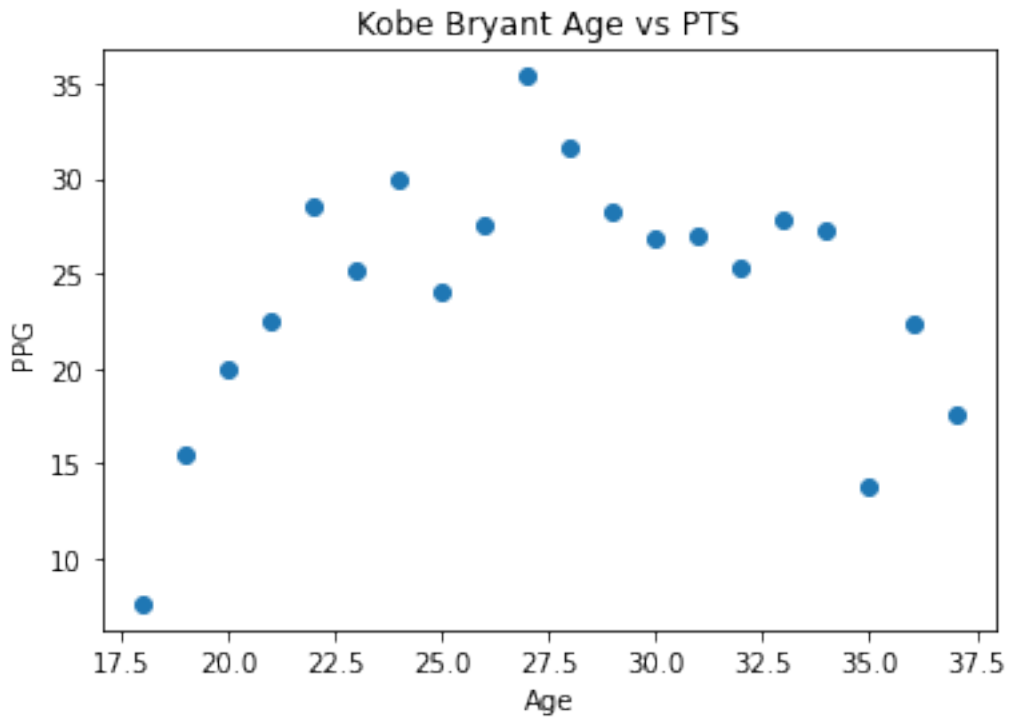
```
Kobe Bryant Regression
                            OLS Regression Results
==============================================================================
Dep. Variable:                    PTS   R-squared:                       0.031
Model:                            OLS   Adj. R-squared:                 -0.022
Method:                 Least Squares   F-statistic:                    0.5854
Date:                Sun, 27 Jun 2021   Prob (F-statistic):              0.454
Time:                        12:46:41   Log-Likelihood:                -65.322
No. Observations:                  20   AIC:                             134.6
Df Residuals:                      18   BIC:                             136.6
Df Model:                           1
Covariance Type:            nonrobust
==============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
```

```
------------------------------------------------------------------------------
const         18.7455      7.284       2.574       0.019        3.443       34.048
Age            0.1983      0.259       0.765       0.454       -0.346        0.743
==============================================================================
Omnibus:                        2.540   Durbin-Watson:                   0.719
Prob(Omnibus):                  0.281   Jarque-Bera (JB):                1.559
Skew:                          -0.684   Prob(JB):                        0.459
Kurtosis:                       3.001   Cond. No.                         137.
==============================================================================

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly
specified.
```

[172]:
```
plt.scatter(x=Kobe['Age'], y=Kobe['PTS'])
plt.xlabel('Age')
plt.ylabel('PPG')
plt.title('Kobe Bryant Age vs PTS')
```

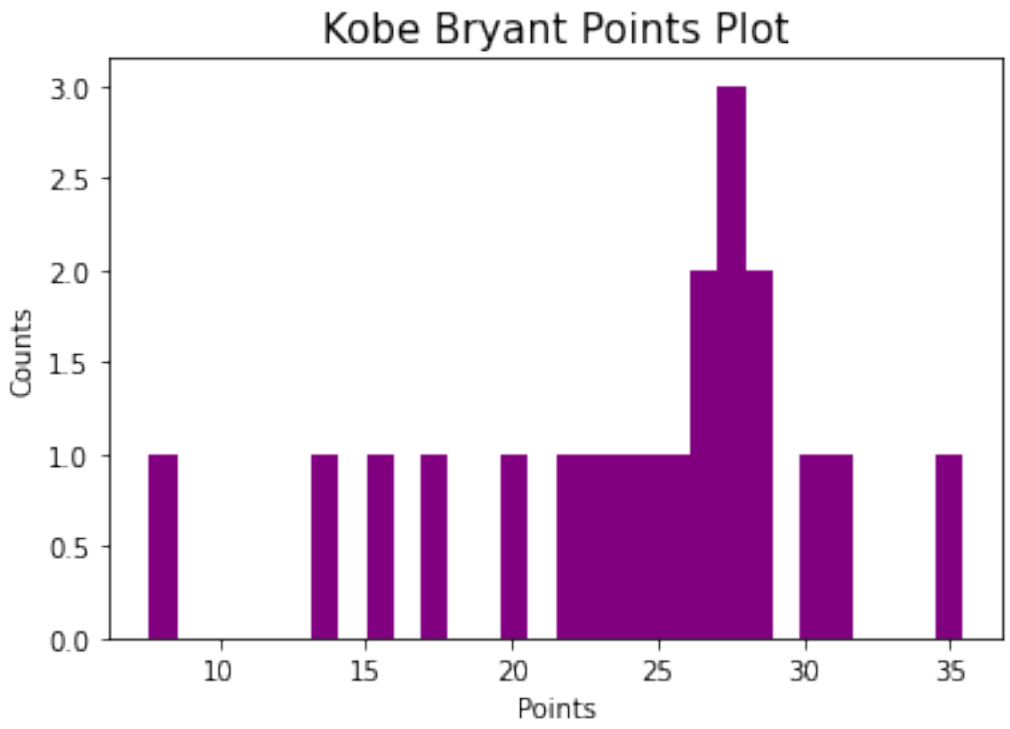
[172]: Text(0.5, 1.0, 'Kobe Bryant Age vs PTS')



[173]:
```
plt.hist(Kobe['PTS'], bins = 30, color='purple')
plt.xlabel('Points', fontsize=10)
plt.ylabel('Counts', fontsize=10)
```

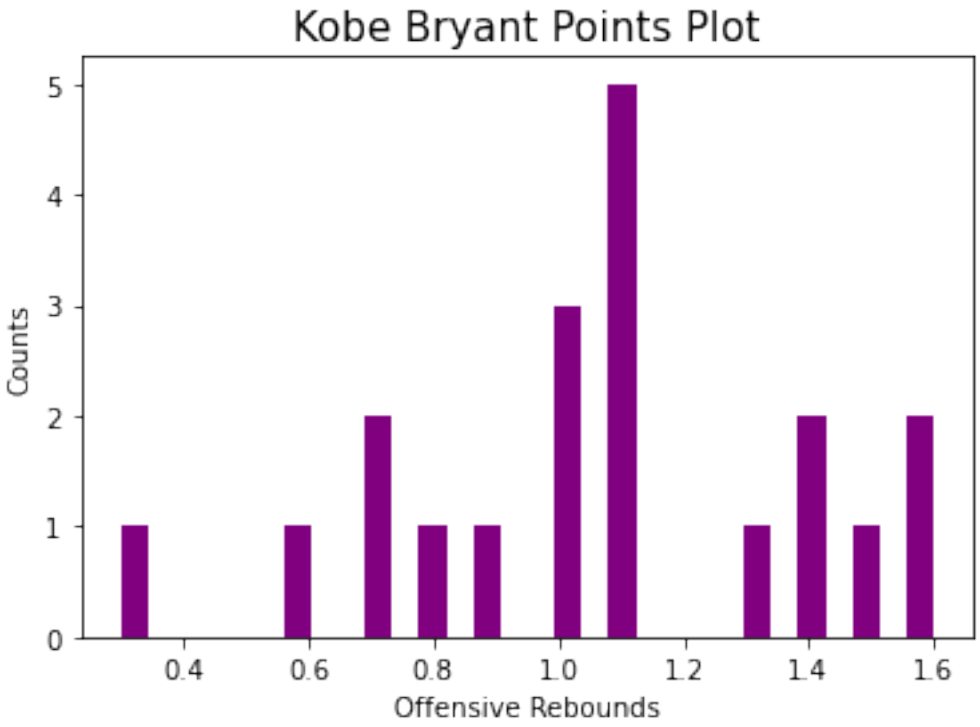
```
plt.title('Kobe Bryant Points Plot',fontsize=15)
```

[173]: Text(0.5, 1.0, 'Kobe Bryant Points Plot')



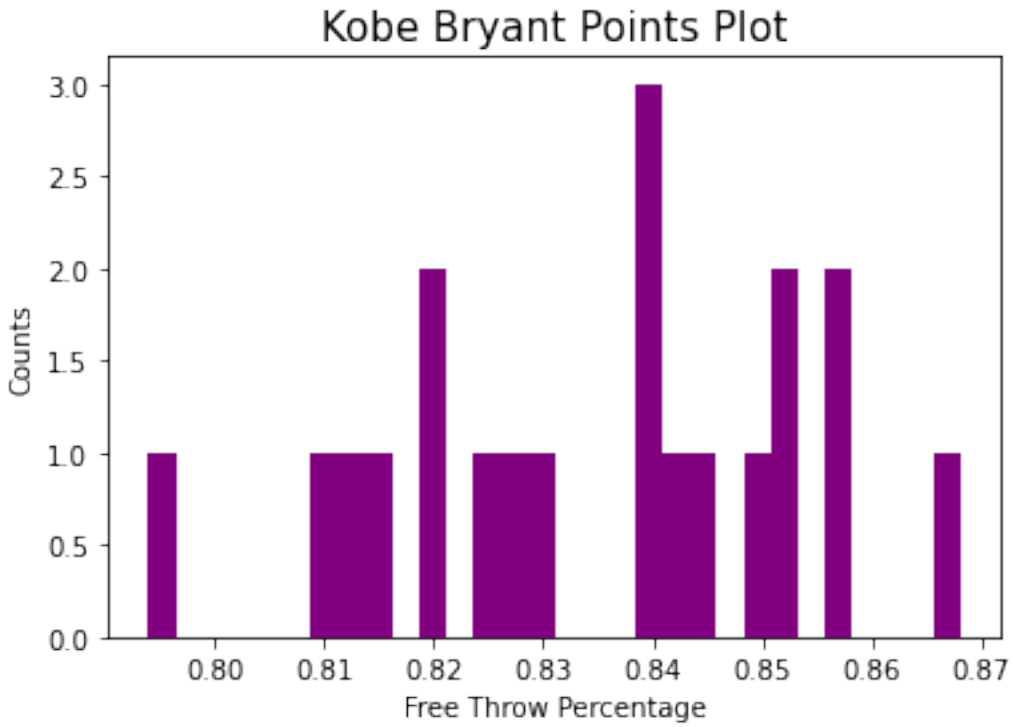
[174]:
```
plt.hist(Kobe['ORB'], bins = 30, color='purple')
plt.xlabel('Offensive Rebounds', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('Kobe Bryant Points Plot',fontsize=15)
```

[174]: Text(0.5, 1.0, 'Kobe Bryant Points Plot')



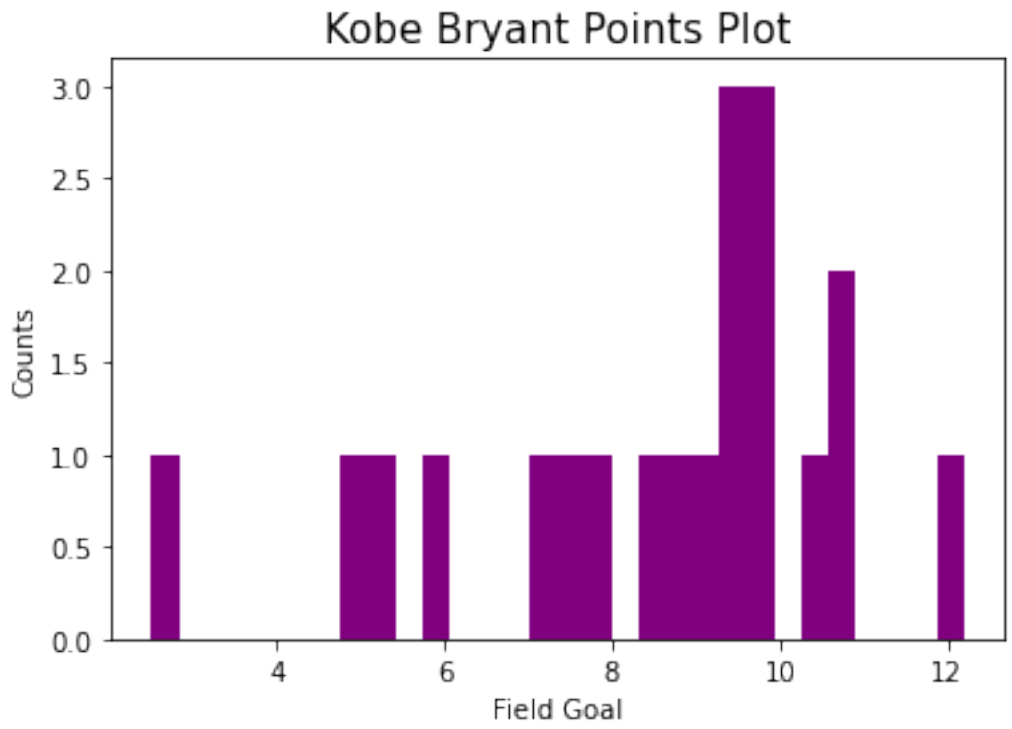
[175]:
```
plt.hist(Kobe['FT%'], bins = 30, color='purple')
plt.xlabel('Free Throw Percentage', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('Kobe Bryant Points Plot',fontsize=15)
```

[175]:
```
Text(0.5, 1.0, 'Kobe Bryant Points Plot')
```



[176]:
```
plt.hist(Kobe['FG'], bins = 30, color='purple')
plt.xlabel('Field Goal', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('Kobe Bryant Points Plot',fontsize=15)
```

[176]: Text(0.5, 1.0, 'Kobe Bryant Points Plot')



[177]:
```
X5 = Dirk.Age
X5 = sm.add_constant(X5)

Y5 = Dirk.PTS
mod3 = sm.OLS(Y5,X5)
res3 = mod3.fit()
print('Dirk Nowitzki Regression')

print(res3.summary())
```

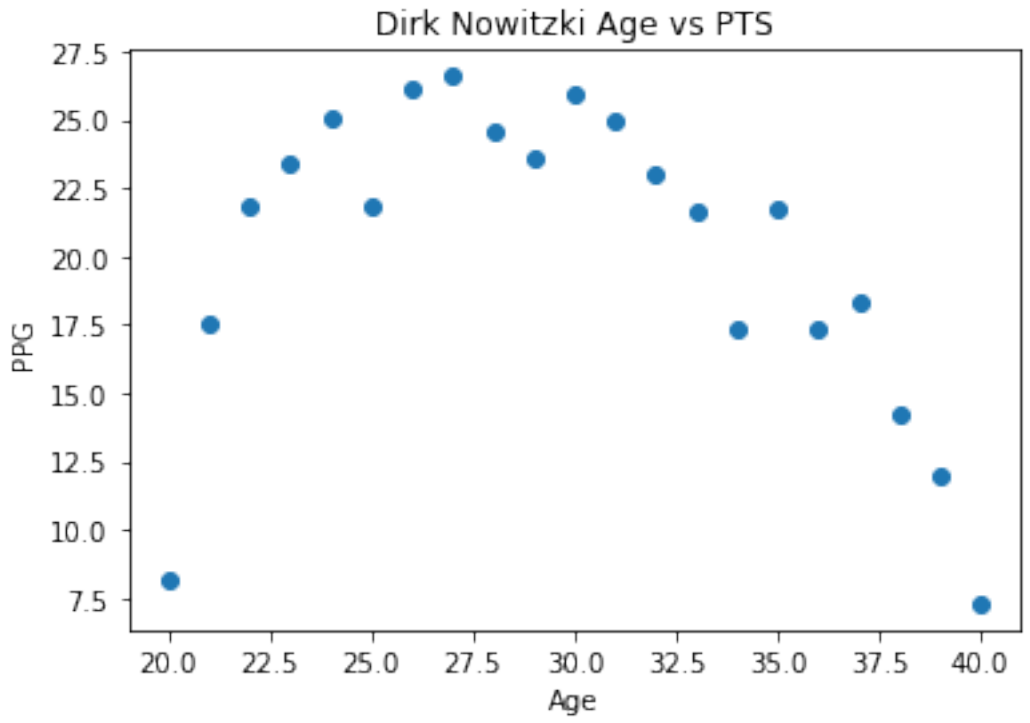
```
Dirk Nowitzki Regression
                            OLS Regression Results
==============================================================================
Dep. Variable:                    PTS   R-squared:                       0.128
Model:                            OLS   Adj. R-squared:                  0.082
Method:                 Least Squares   F-statistic:                     2.795
Date:                Sun, 27 Jun 2021   Prob (F-statistic):              0.111
Time:                        12:46:44   Log-Likelihood:                -64.475
No. Observations:                  21   AIC:                             133.0
Df Residuals:                      19   BIC:                             135.0
Df Model:                           1
Covariance Type:            nonrobust
==============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
```

```
------------------------------------------------------------------------------
const          30.0173      6.046       4.965      0.000      17.364      42.671
Age            -0.3303      0.198      -1.672      0.111      -0.744       0.083
==============================================================================
Omnibus:                       10.116   Durbin-Watson:                   0.457
Prob(Omnibus):                  0.006   Jarque-Bera (JB):                7.642
Skew:                          -1.315   Prob(JB):                       0.0219
Kurtosis:                       4.348   Cond. No.                         155.
==============================================================================

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly
specified.
```

[178]:
```
plt.scatter(x=Dirk['Age'], y=Dirk['PTS'])
plt.xlabel('Age')
plt.ylabel('PPG')
plt.title('Dirk Nowitzki Age vs PTS')
```

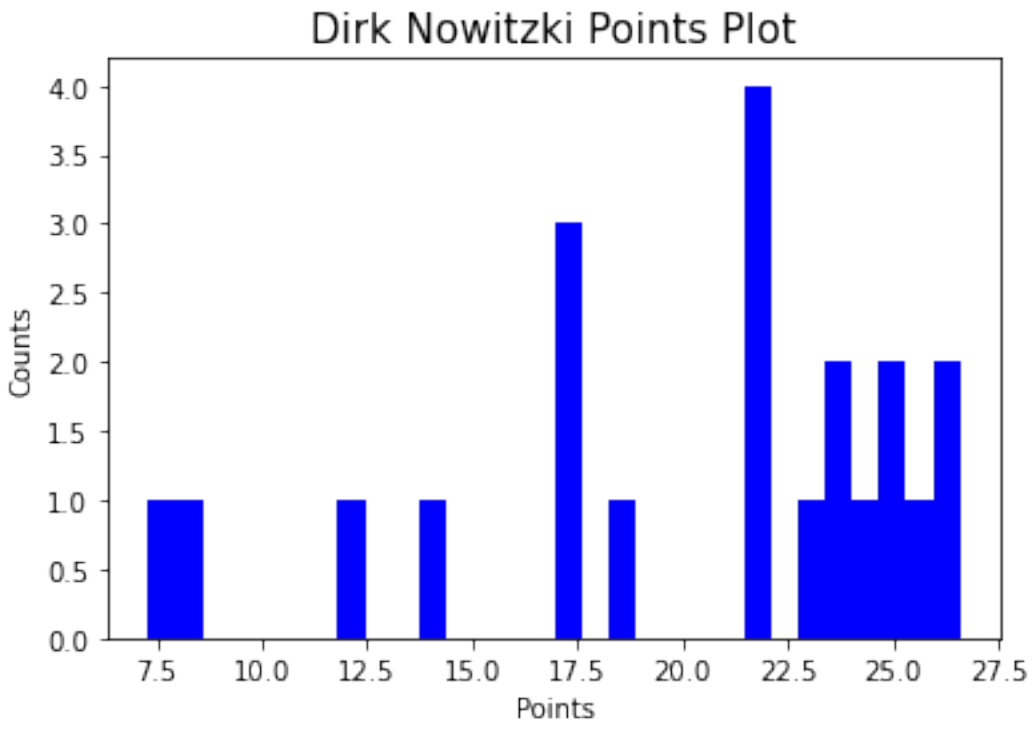
[178]: Text(0.5, 1.0, 'Dirk Nowitzki Age vs PTS')



[179]:
```
plt.hist(Dirk['PTS'], bins = 30, color='blue')
plt.xlabel('Points', fontsize=10)
plt.ylabel('Counts', fontsize=10)
```

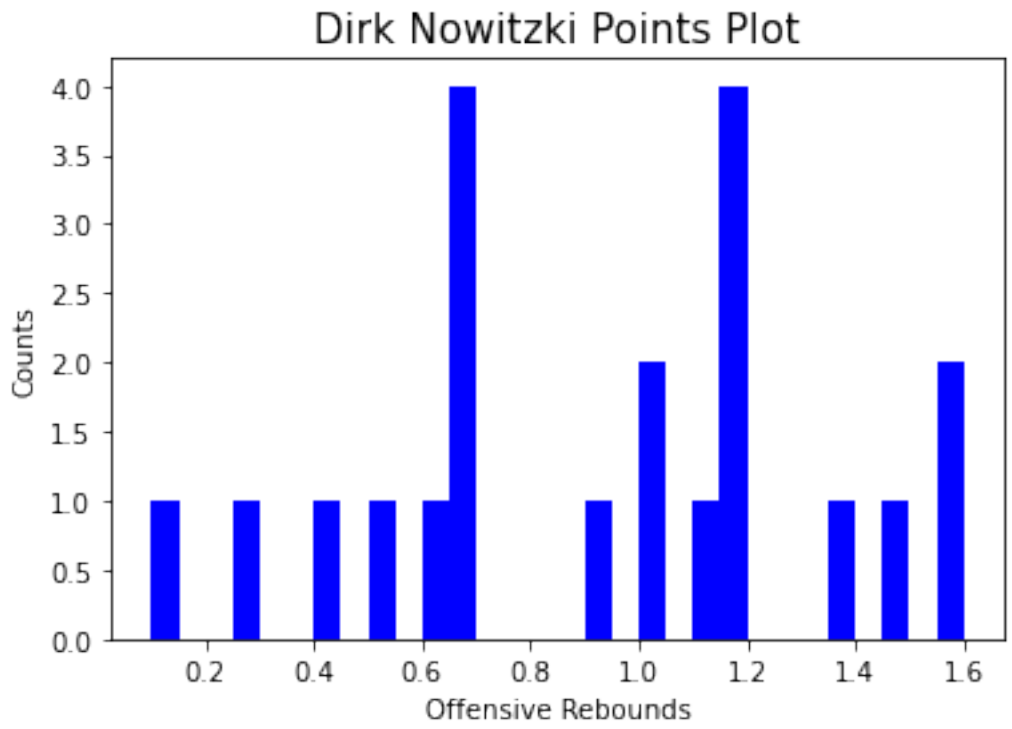
```
plt.title('Dirk Nowitzki Points Plot',fontsize=15)
```

[179]: Text(0.5, 1.0, 'Dirk Nowitzki Points Plot')



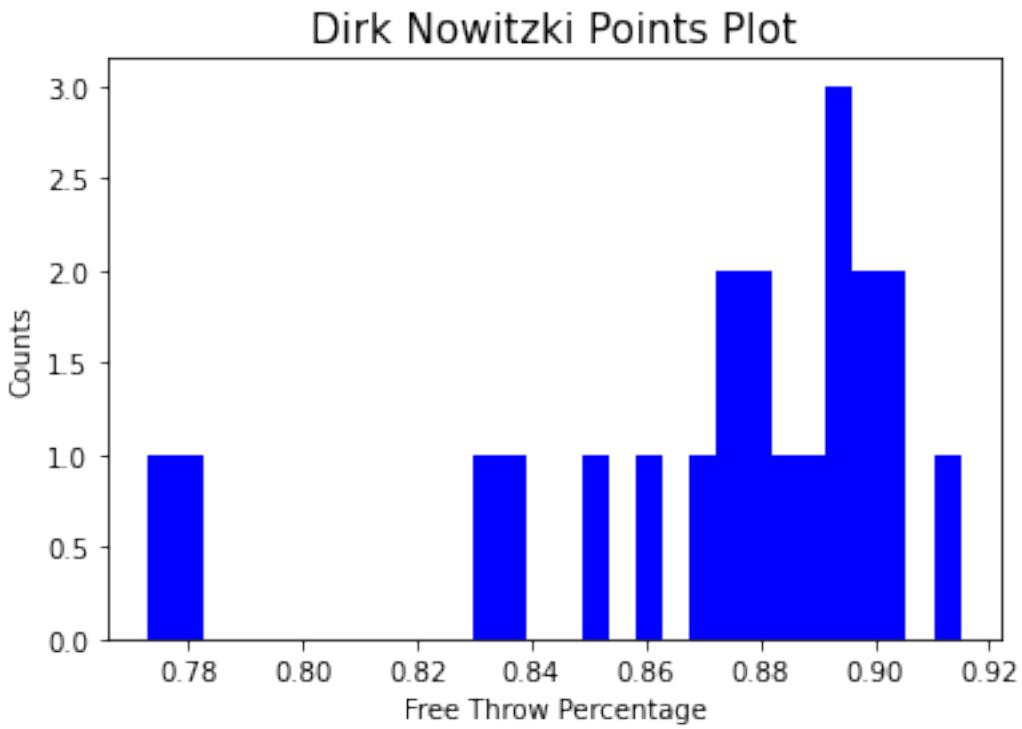
[180]:
```
plt.hist(Dirk['ORB'], bins = 30, color='blue')
plt.xlabel('Offensive Rebounds', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('Dirk Nowitzki Points Plot',fontsize=15)
```

[180]: Text(0.5, 1.0, 'Dirk Nowitzki Points Plot')



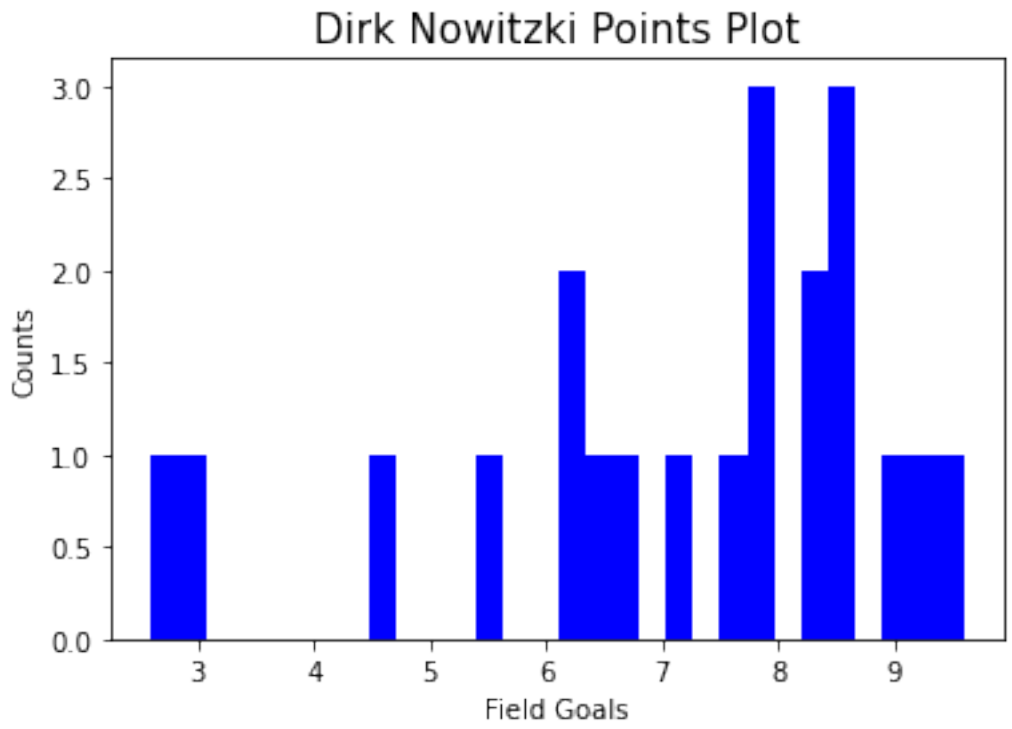
[181]:
```
plt.hist(Dirk['FT%'], bins = 30, color='blue')
plt.xlabel('Free Throw Percentage', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('Dirk Nowitzki Points Plot',fontsize=15)
```

[181]: Text(0.5, 1.0, 'Dirk Nowitzki Points Plot')



[182]:
```
plt.hist(Dirk['FG'], bins = 30, color='blue')
plt.xlabel('Field Goals', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('Dirk Nowitzki Points Plot',fontsize=15)
```

[182]:
```
Text(0.5, 1.0, 'Dirk Nowitzki Points Plot')
```



[183]:
```
X6 = MJ.Age
X6 = sm.add_constant(X6)

Y6 = MJ.PTS
mod3 = sm.OLS(Y6,X6)
res3 = mod3.fit()
print('Michael Jordan Regression')

print(res3.summary())
```

```
Michael Jordan Regression
                            OLS Regression Results
==============================================================================
Dep. Variable:                    PTS   R-squared:                       0.301
Model:                            OLS   Adj. R-squared:                  0.247
Method:                 Least Squares   F-statistic:                     5.589
Date:                Sun, 27 Jun 2021   Prob (F-statistic):             0.0343
Time:                        12:46:47   Log-Likelihood:                -41.500
No. Observations:                  15   AIC:                             87.00
Df Residuals:                      13   BIC:                             88.42
Df Model:                           1
Covariance Type:            nonrobust
==============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
```

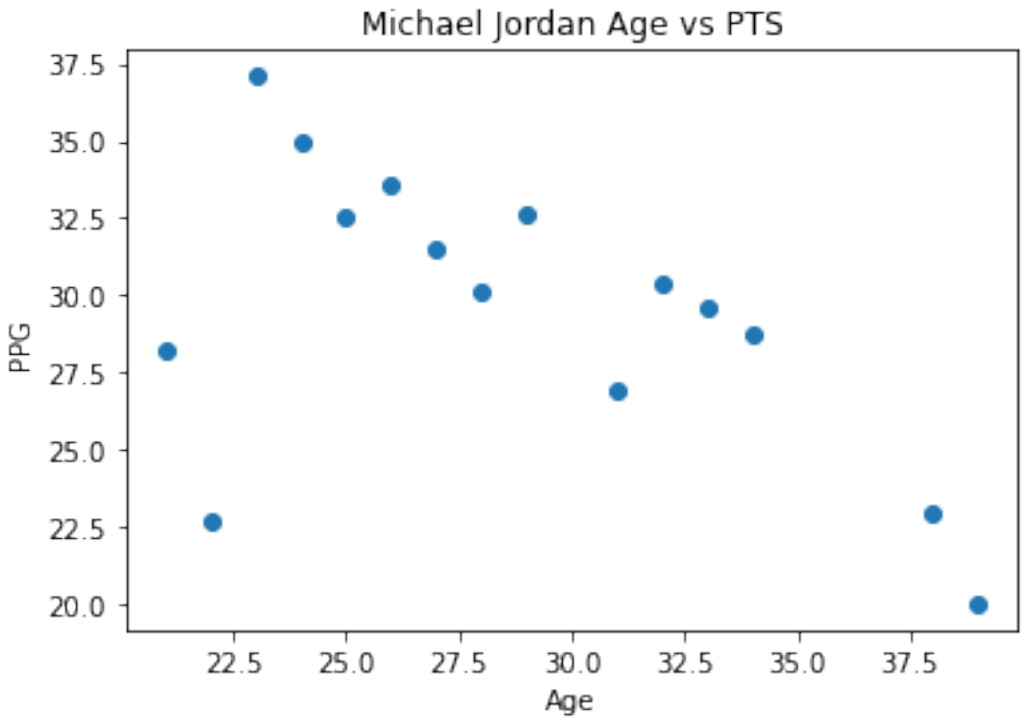
```
------------------------------------------------------------------------------
const         42.8968      5.786      7.414      0.000      30.397      55.397
Age           -0.4668      0.197     -2.364      0.034      -0.893      -0.040
==============================================================================
Omnibus:                        6.069   Durbin-Watson:                   1.477
Prob(Omnibus):                  0.048   Jarque-Bera (JB):                3.409
Skew:                          -1.132   Prob(JB):                        0.182
Kurtosis:                       3.573   Cond. No.                         159.
==============================================================================

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly
specified.

/Users/Brett/opt/anaconda3/lib/python3.8/site-
packages/scipy/stats/stats.py:1603: UserWarning: kurtosistest only valid for
n>=20 … continuing anyway, n=15
  warnings.warn("kurtosistest only valid for n>=20 … continuing "
```

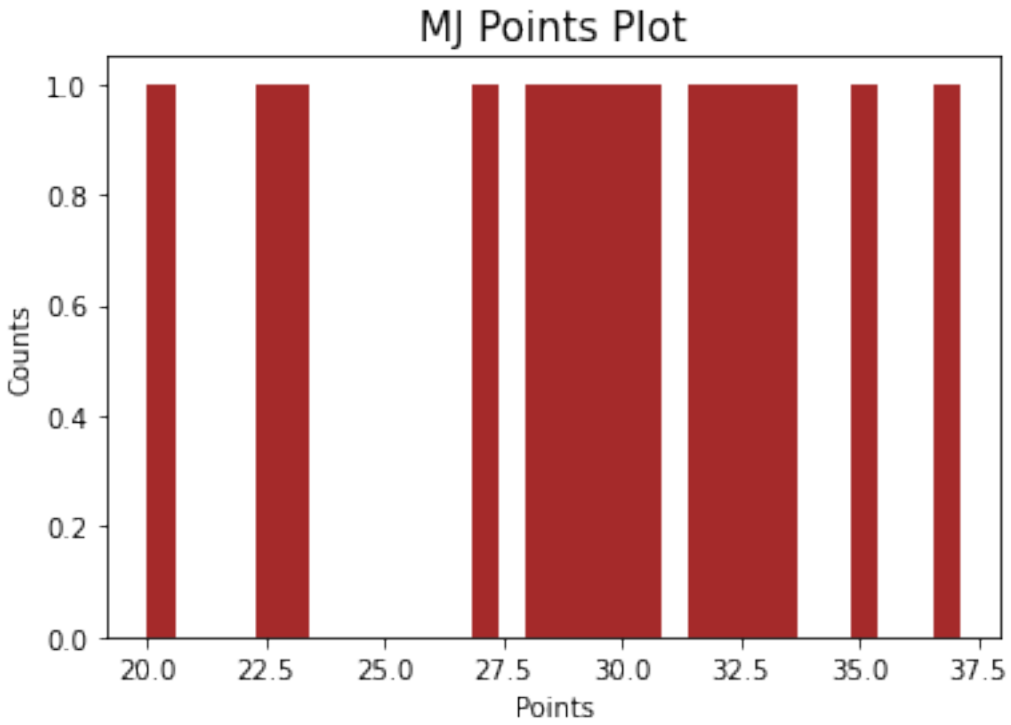
[184]:
```
plt.scatter(x=MJ['Age'], y=MJ['PTS'])
plt.xlabel('Age')
plt.ylabel('PPG')
plt.title('Michael Jordan Age vs PTS')
```

[184]: Text(0.5, 1.0, 'Michael Jordan Age vs PTS')



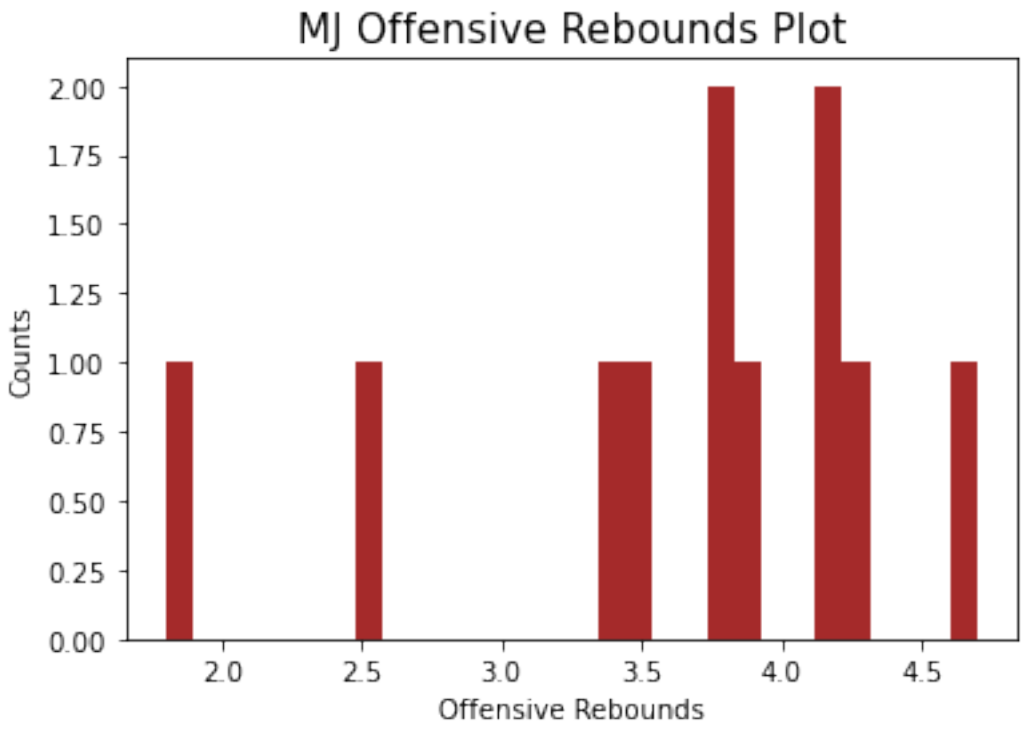
[185]:
```
plt.hist(MJ['PTS'], bins = 30, color='brown')
plt.xlabel('Points', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('MJ Points Plot',fontsize=15)
```

[185]: Text(0.5, 1.0, 'MJ Points Plot')



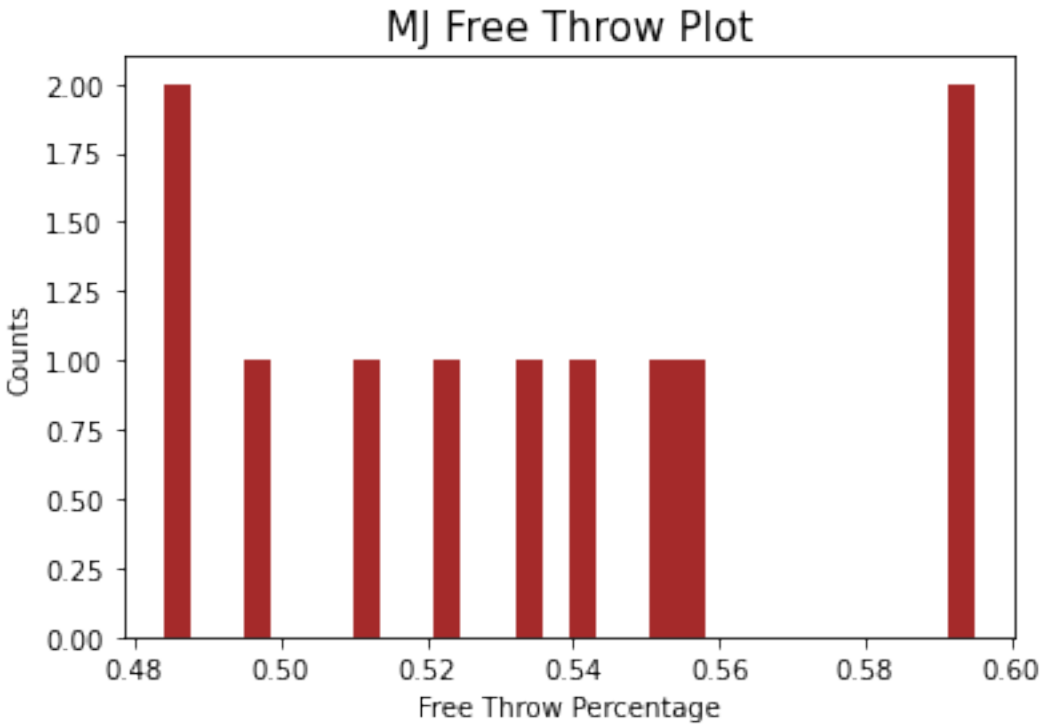
[186]:
```
plt.hist(Shaq['ORB'], bins = 30, color='brown')
plt.xlabel('Offensive Rebounds', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('MJ Offensive Rebounds Plot',fontsize=15)
```

[186]: Text(0.5, 1.0, 'MJ Offensive Rebounds Plot')



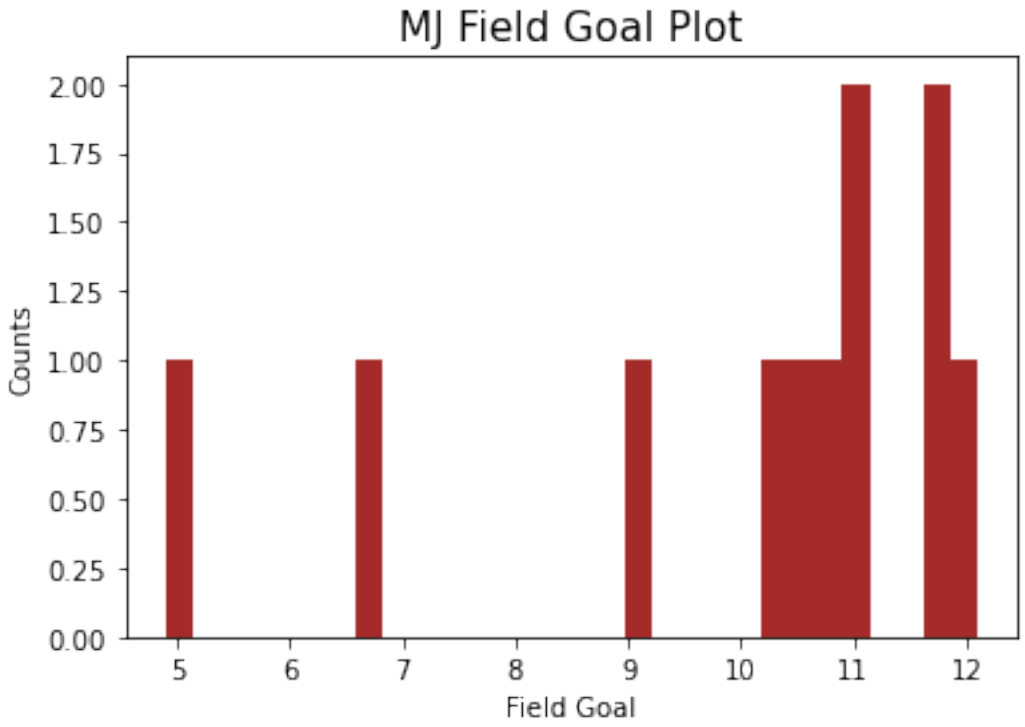
[187]:
```
plt.hist(Shaq['FT%'], bins = 30, color='brown')
plt.xlabel('Free Throw Percentage', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('MJ Free Throw Plot',fontsize=15)
```

[187]: Text(0.5, 1.0, 'MJ Free Throw Plot')



[188]:
```
plt.hist(Shaq['FG'], bins = 30, color='brown')
plt.xlabel('Field Goal', fontsize=10)
plt.ylabel('Counts', fontsize=10)
plt.title('MJ Field Goal Plot',fontsize=15)
```

[188]: Text(0.5, 1.0, 'MJ Field Goal Plot')


MJ Field Goal Plot
Counts
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
5
6
7
8
9
10
11
12
Field Goal

[ ]:

[ ]:

[ ]:

[ ]: