In [1]:

```
import pandas as pd
import numpy as np
from sklearn import preprocessing
import warnings
warnings.filterwarnings('ignore')
```

In [2]:

```
df = pd.read_csv('nba.csv')
```

In [3]:

```
df
```

Out[3]:

	Name	Team	Number	Position	Age	Height	Weight	College	Salary
0	Avery Bradley	Boston Celtics	0.0	PG	25.0	6-2	180.0	Texas	7730337.0
1	Jae Crowder	Boston Celtics	99.0	SF	25.0	6-6	235.0	Marquette	6796117.0
2	John Holland	Boston Celtics	30.0	SG	27.0	6-5	205.0	Boston University	NaN
3	R.J. Hunter	Boston Celtics	28.0	SG	22.0	6-5	185.0	Georgia State	1148640.0
4	Jonas Jerebko	Boston Celtics	8.0	PF	29.0	6-10	231.0	NaN	5000000.0
...	...	...	...	...	...	...	...	...	...
453	Shelvin Mack	Utah Jazz	8.0	PG	26.0	6-3	203.0	Butler	2433333.0
454	Raul Neto	Utah Jazz	25.0	PG	24.0	6-1	179.0	NaN	900000.0
455	Tibor Pleiss	Utah Jazz	21.0	C	26.0	7-3	256.0	NaN	2900000.0
456	Jeff Withey	Utah Jazz	24.0	C	26.0	7-0	231.0	Kansas	947276.0
457	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN

458 rows × 9 columns

In [4]:

```
df.head()
```

Out[4]:

	Name	Team	Number	Position	Age	Height	Weight	College	Salary
0	Avery Bradley	Boston Celtics	0.0	PG	25.0	6-2	180.0	Texas	7730337.0
1	Jae Crowder	Boston Celtics	99.0	SF	25.0	6-6	235.0	Marquette	6796117.0
2	John Holland	Boston Celtics	30.0	SG	27.0	6-5	205.0	Boston University	NaN
3	R.J. Hunter	Boston Celtics	28.0	SG	22.0	6-5	185.0	Georgia State	1148640.0
4	Jonas Jerebko	Boston Celtics	8.0	PF	29.0	6-10	231.0	NaN	5000000.0

In [5]:

```
df.tail()
```

Out[5]:

	Name	Team	Number	Position	Age	Height	Weight	College	Salary
453	Shelvin Mack	Utah Jazz	8.0	PG	26.0	6-3	203.0	Butler	2433333.0
454	Raul Neto	Utah Jazz	25.0	PG	24.0	6-1	179.0	NaN	900000.0
455	Tibor Pleiss	Utah Jazz	21.0	C	26.0	7-3	256.0	NaN	2900000.0
456	Jeff Withey	Utah Jazz	24.0	C	26.0	7-0	231.0	Kansas	947276.0
457	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN

In [6]:

```
df.describe()
```

Out[6]:

	Number	Age	Weight	Salary
count	457.000000	457.000000	457.000000	4.460000e+02
mean	17.678337	26.938731	221.522976	4.842684e+06
std	15.966090	4.404016	26.368343	5.229238e+06
min	0.000000	19.000000	161.000000	3.088800e+04
25%	5.000000	24.000000	200.000000	1.044792e+06
50%	13.000000	26.000000	220.000000	2.839073e+06
75%	25.000000	30.000000	240.000000	6.500000e+06
max	99.000000	40.000000	307.000000	2.500000e+07

In [7]:

```
df.dtypes
```

Out[7]:

```
Name          object
Team          object
Number       float64
Position      object
Age          float64
Height        object
Weight       float64
College       object
Salary       float64
dtype: object
```

In [8]:

```
df.isna().sum()
```

Out[8]:

```
Name          1
Team          1
Number        1
Position      1
Age           1
Height        1
Weight        1
College      85
Salary       12
dtype: int64
```

In [9]:

```
df.shape
```

Out[9]:

```
(458, 9)
```

In [10]:

```
df = df.fillna(df.mean())
```

In [11]:

```
df.isna().sum()
```

Out[11]:

```
Name         1
Team         1
Number       0
Position     1
Age          0
Height       1
Weight       0
College     85
Salary       0
dtype: int64
```

In [15]:

```
groupheight = df.groupby(df['Height'])
```

In [17]:

```
groupheight.get_group('5-11')
```

Out[17]:

	Name	Team	Number	Position	Age	Height	Weight	College	Salary
22	Shane Larkin	Brooklyn Nets	0.0	PG	23.0	5-11	175.0	Miami (FL)	1500000.0
130	Phil Pressey	Phoenix Suns	25.0	PG	25.0	5-11	175.0	Missouri	55722.0
203	Ty Lawson	Indiana Pacers	10.0	PG	28.0	5-11	195.0	North Carolina	211744.0

In [25]:

```
df.Age.value_counts()
```

Out[25]:

```
24.000000    47
25.000000    45
27.000000    41
23.000000    41
26.000000    36
28.000000    31
30.000000    31
29.000000    28
22.000000    26
31.000000    22
20.000000    19
21.000000    19
33.000000    14
32.000000    13
34.000000    10
36.000000    10
35.000000     9
37.000000     4
38.000000     4
40.000000     3
39.000000     2
19.000000     2
26.938731     1
Name: Age, dtype: int64
```

In [31]:

```
bins = [19,25,31,36,40]
labels = ['19-24','25-30','31-35','36-40']
df['Age Group'] = pd.cut(df['Age'],bins = bins,labels = labels,right = False)
```

In [32]:

```
df
```

Out[32]:

	Name	Team	Number	Position	Age	Height	Weight	College	
0	Avery Bradley	Boston Celtics	0.000000	PG	25.000000	6-2	180.000000	Texas	7.73033
1	Jae Crowder	Boston Celtics	99.000000	SF	25.000000	6-6	235.000000	Marquette	6.79611
2	John Holland	Boston Celtics	30.000000	SG	27.000000	6-5	205.000000	Boston University	4.84268
3	R.J. Hunter	Boston Celtics	28.000000	SG	22.000000	6-5	185.000000	Georgia State	1.14864
4	Jonas Jerebko	Boston Celtics	8.000000	PF	29.000000	6-10	231.000000	NaN	5.00000
...	...	...	...	...	...	...	...	...	
453	Shelvin Mack	Utah Jazz	8.000000	PG	26.000000	6-3	203.000000	Butler	2.43333
454	Raul Neto	Utah Jazz	25.000000	PG	24.000000	6-1	179.000000	NaN	9.00000
455	Tibor Pleiss	Utah Jazz	21.000000	C	26.000000	7-3	256.000000	NaN	2.90000
456	Jeff Withey	Utah Jazz	24.000000	C	26.000000	7-0	231.000000	Kansas	9.47276
457	NaN	NaN	17.678337	NaN	26.938731	NaN	221.522976	NaN	4.84268

458 rows × 10 columns

In [36]:

```
newdf = df.groupby('Age Group')
newdf.mean()
```

Out[36]:

Age Group	Number	Age	Weight	Salary
19-24	17.220779	22.467532	218.500000	2.761705e+06
25-30	17.641682	27.253233	221.739544	5.866171e+06
31-35	17.470588	32.573529	226.926471	6.635271e+06
36-40	21.650000	36.900000	222.850000	3.897656e+06

In [37]:

```
newdf.describe()
```

Out[37]:

	Number							Age		...
	count	mean	std	min	25%	50%	75%	max	count	mean	...
Age Group											
19-24	154.0	17.220779	15.474308	0.0	6.00	13.0	23.75	92.0	154.0	22.467532	...
25-30	213.0	17.641682	16.405354	0.0	5.00	13.0	25.00	99.0	213.0	27.253233	...
31-35	68.0	17.470588	16.855373	0.0	4.75	12.0	26.25	90.0	68.0	32.573529	...
36-40	20.0	21.650000	12.774461	3.0	11.75	21.0	31.75	42.0	20.0	36.900000	...

4 rows × 32 columns

In [38]:

```
newdf['Salary'].describe()
```

Out[38]:

	count	mean	std	min	25%	50%	75%
Age Group							
19-24	154.0	2.761705e+06	3.164929e+06	30888.0	1000000.00	1.721380e+06	3.150510e+0
25-30	213.0	5.866171e+06	5.459484e+06	55722.0	1100602.00	4.050000e+06	8.988765e+0
31-35	68.0	6.635271e+06	6.238296e+06	200600.0	2096417.75	4.671342e+06	9.667979e+0
36-40	20.0	3.897656e+06	5.373672e+06	222888.0	947276.00	2.834470e+06	4.276685e+0

In [39]:

```
df.groupby('Age Group')['Salary'].max()
```

Out[39]:

```
Age Group
19-24    16407501.0
25-30    22359364.0
31-35    22970500.0
36-40    25000000.0
Name: Salary, dtype: float64
```

In [41]:

```
salarylist = list(newdf['Salary'])
```

In [45]:

```
salarylist
```

Out[45]:

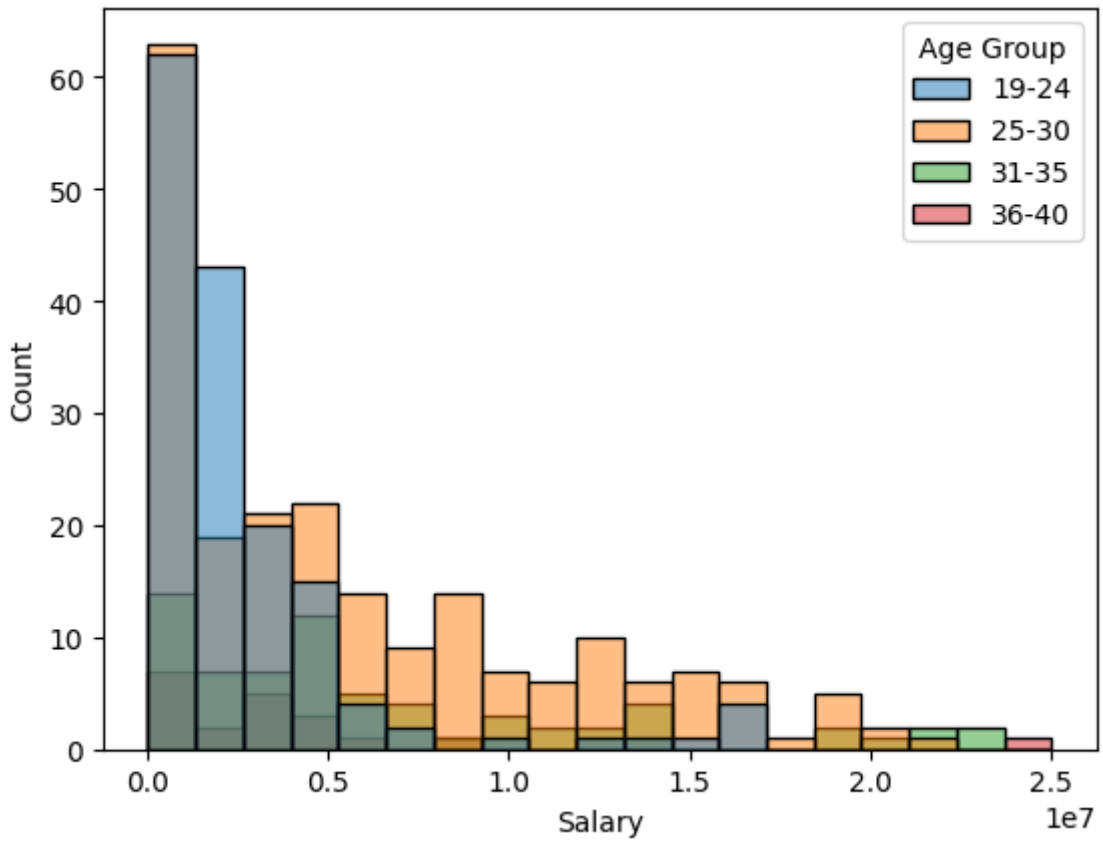
```
[('19-24',
  3       1148640.0
  6       1170960.0
  8       1824360.0
  9       3431040.0
  10      2569260.0
            ...
  446    12000000.0
  447     1175880.0
  449     1348440.0
  452     2239800.0
  454      900000.0
  Name: Salary, Length: 154, dtype: float64),
 ('25-30',
  0       7.730337e+06
  1       6.796117e+06
  2       4.842684e+06
  4       5.000000e+06
  5       1.200000e+07
  451     9.813480e+05
  453     2.433333e+06
  455     2.900000e+06
  456     9.472760e+05
  457     4.842684e+06
  Name: Salary, Length: 213, dtype: float64),
 ('31-35',
  19      6300000.0
  31      1635476.0
  33     22875000.0
  34      7402812.0
  43       947276.0
```

In [48]:
```
newdf['Salary'].get_group('19-24')
```

Out[48]:
```
3       1148640.0
6       1170960.0
8       1824360.0
9       3431040.0
10      2569260.0
          ...
446    12000000.0
447     1175880.0
449     1348440.0
452     2239800.0
454      900000.0
Name: Salary, Length: 154, dtype: float64
```

In [56]:
```
import seaborn as sns
sns.histplot(data = df,x = df['Salary'],hue = df['Age Group'])
```

Out[56]:
```
<Axes: xlabel='Salary', ylabel='Count'>
```




```
  406     9.472760e+05
```

```
420    2.228880e+05
Name: Salary, dtype: float64)]
```

In [ ]: