Assignment 1

Name:- Shaikh Abdul Quddus

Hitters Dataset

In [1]:
```
import pandas as pd
```

In [3]:
```
A1=pd.read_csv('D:/Shaikh Quddus/Classes Recordings/hitters.csv')
```

In [4]:
```
A1
```

Out[4]:

	Name	AtBat	Hits	HmRun	Runs	RBI	Walks	Years	CAtBat	CHits	...	CRuns	CRBI	CWalks	League	Division	PutOuts	Assist
0	Andy Allanson	293	66	1	30	29	14	1	293	66	...	30	29	14	A	E	446	3
1	Alan Ashby	315	81	7	24	38	39	14	3449	835	...	321	414	375	N	W	632	4
2	Alvin Davis	479	130	18	66	72	76	3	1624	457	...	224	266	263	A	W	880	8
3	Andre Dawson	496	141	20	65	78	37	11	5628	1575	...	828	838	354	N	E	200	1
4	Andres Galarraga	321	87	10	39	42	30	2	396	101	...	48	46	33	N	E	805	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.
317	Willie McGee	497	127	7	65	48	37	5	2703	806	...	379	311	138	N	E	325	
318	Willie Randolph	492	136	5	76	50	94	12	5511	1511	...	897	451	875	A	E	313	38
319	Wayne Tolleson	475	126	3	61	43	52	6	1700	433	...	217	93	146	A	W	37	11
320	Willie Upshaw	573	144	9	85	60	78	8	3198	857	...	470	420	332	A	E	1314	13
321	Willie Wilson	631	170	9	77	44	31	11	4908	1457	...	775	357	249	A	W	408	

322 rows × 21 columns

Find out no of missing values in each column

In [5]:
```
A1.isna().sum()
```

Out[5]:
```
Name          0
AtBat         0
Hits          0
HmRun         0
Runs          0
RBI           0
Walks         0
Years         0
CAtBat        0
CHits         0
CHmRun        0
CRuns         0
CRBI          0
CWalks        0
League        0
Division      0
PutOuts       0
Assists       0
Errors        0
Salary       59
NewLeague     0
dtype: int64
```

Find of people who have batted for more than 400 matches

In [7]:
```
B=A1[A1['CAtBat']>400][['Name','CAtBat']]
```

In [8]:
```
B
```

Out[8]:

	Name	CAtBat
1	Alan Ashby	3449
2	Alvin Davis	1624
3	Andre Dawson	5628
5	Alfredo Griffin	4408
7	Argenis Salazar	509
...	...	...
317	Willie McGee	2703
318	Willie Randolph	5511
319	Wayne Tolleson	1700
320	Willie Upshaw	3198
321	Willie Wilson	4908

284 rows × 2 columns

Find out the name of the player who has hit max home runs

In [9]:
```
C=A1[['Name','CHmRun']]
```

In [10]:
```
C
```

Out[10]:

	Name	CHmRun
0	Andy Allanson	1
1	Alan Ashby	69
2	Alvin Davis	63
3	Andre Dawson	225
4	Andres Galarraga	12
...	...	...
317	Willie McGee	32
318	Willie Randolph	39
319	Wayne Tolleson	7
320	Willie Upshaw	97
321	Willie Wilson	30

322 rows × 2 columns

In [28]:
```
D=C.sort_values(by=['CHmRun'],ascending=False)
```

In [30]:
```
D.head(1)
```

Out[30]:

	Name	CHmRun
249	Reggie Jackson	548

Find out league wise total number of players

In [37]:
```
E=A1[['Name','League']]
```

In [38]:
```
E
```

Out[38]:

	Name	League
0	Andy Allanson	A
1	Alan Ashby	N
2	Alvin Davis	A
3	Andre Dawson	N
4	Andres Galarraga	N
...	...	...
317	Willie McGee	N
318	Willie Randolph	A
319	Wayne Tolleson	A
320	Willie Upshaw	A
321	Willie Wilson	A

322 rows × 2 columns

In [42]:
```
E.groupby(by=['League']).count()
```

Out[42]:

	Name
League	
A	175
N	147

Find out division wise total amount of salary invested

In [45]:
```
F=A1[['Division','Salary']]
```

In [46]:
```
F.groupby(by=['Division'])['Salary'].sum()
```

Out[46]:
```
Division
E    80531.006
W    60417.501
Name: Salary, dtype: float64
```

Find out five most senior players.

In [47]:
```
G=A1[['Name','Years']]
```

In [48]:
```
H=G.sort_values(by=['Years'],ascending=False)
```

In [50]:
```
H.head(5)
```

Out[50]:

	Name	Years
236	Pete Rose	24
302	Tony Perez	23
121	Graig Nettles	20
249	Reggie Jackson	20
306	Ted Simmons	19

Cars Dataset

In [51]:
```
A2=pd.read_csv('D:/Shaikh Quddus/Classes Recordings/Cars93.csv')
```

In [52]:
```
A2
```

Out[52]:

	id	Manufacturer	Model	Type	Min.Price	Price	Max.Price	MPG.city	MPG.highway	AirBags	...	Passengers	Length	Wheelbase
0	1	Acura	Integra	Small	12.9	15.9	18.8	25	31	None	...	5	177	102
1	2	Acura	Legend	Midsize	29.2	33.9	38.7	18	25	Driver & Passenger	...	5	195	115
2	3	Audi	90	Compact	25.9	29.1	32.3	20	26	Driver only	...	5	180	102
3	4	Audi	100	Midsize	30.8	37.7	44.6	19	26	NaN	...	6	193	106
4	5	BMW	535i	Midsize	23.7	30.0	36.2	22	30	Driver only	...	4	186	109
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
88	89	Volkswagen	Eurovan	Van	16.6	19.7	22.7	17	21	None	...	7	187	115
89	90	Volkswagen	Passat	Compact	17.6	20.0	22.4	21	30	None	...	5	180	103
90	91	Volkswagen	Corrado	Sporty	22.9	23.3	23.7	18	25	None	...	4	159	97
91	92	Volvo	240	Compact	21.8	22.7	23.5	21	28	Driver only	...	5	190	104
92	93	Volvo	850	Midsize	24.8	26.7	28.5	20	28	Driver & Passenger	...	5	184	105

93 rows × 28 columns

Find out car having highest Mileage in city

In [54]:
```
Z=A2.sort_values(by=['MPG.city'],ascending=False)
```

In [55]:
```
Z.head(1)
```

Out[55]:

	id	Manufacturer	Model	Type	Min.Price	Price	Max.Price	MPG.city	MPG.highway	AirBags	...	Passengers	Length	Wheelbase	Widtl
38	39	Geo	Metro	Small	6.7	8.4	10.0	46	50	None	...	4	151	93	6

1 rows × 28 columns

Find out Models of cars which are having Price between 17 and 25

In [58]:
```
A2[(A2['Price']>17) & (A2['Price']<25)][['Model','Manufacturer','Price']]
```

Out[58]:

	Model	Manufacturer	Price
6	LeSabre	Buick	20.8
7	Roadmaster	Buick	23.7
17	Caprice	Chevrolet	18.8
19	Concorde	Chrylser	18.4
25	Caravan	Dodge	19.0
29	Vision	Eagle	19.3
35	Aerostar	Ford	19.9
36	Taurus	Ford	20.2
37	Crown_Victoria	Ford	20.9
40	Prelude	Honda	19.8
42	Accord	Honda	17.5
55	MPV	Mazda	19.1
65	Quest	Nissan	19.1
66	Maxima	Nissan	21.5
69	Silhouette	Oldsmobile	19.5
70	Eighty-Eight	Oldsmobile	20.7
74	Firebird	Pontiac	17.7
75	Grand_Prix	Pontiac	18.5
76	Bonneville	Pontiac	24.4
81	Legacy	Subaru	19.5
84	Celica	Toyota	18.4
85	Camry	Toyota	18.2
86	Previa	Toyota	22.7
88	Eurovan	Volkswagen	19.7
89	Passat	Volkswagen	20.0
90	Corrado	Volkswagen	23.3
91	240	Volvo	22.7

Find out top 7 most fuel economic cars for highway

In [59]:
```
X=A2.sort_values(by=['MPG.highway'],ascending=False)
```

In [60]:
```
X.head(7)
```

Out[60]:

	id	Manufacturer	Model	Type	Min.Price	Price	Max.Price	MPG.city	MPG.highway	AirBags	...	Passengers	Length	Wheelbase	Wid
38	39	Geo	Metro	Small	6.7	8.4	10.0	46	50	None	...	4	151	93	
41	42	Honda	Civic	Small	8.4	12.1	15.8	42	46	Driver only	...	4	173	103	
82	83	Suzuki	Swift	Small	7.3	8.6	10.0	39	43	None	...	4	161	93	
72	73	Pontiac	LeMans	Small	8.2	9.0	9.9	31	41	None	...	4	177	99	
78	79	Saturn	SL	Small	9.2	11.1	12.9	28	38	Driver only	...	5	176	102	
83	84	Toyota	Tercel	Small	7.8	9.8	11.8	32	37	Driver only	...	5	162	94	
79	80	Subaru	Justy	Small	7.3	8.4	9.5	33	37	None	...	4	146	90	

7 rows × 28 columns

Find out Models of cars having no AirBags and which are of compact type whose price is below 20.

In [109…
```
A2[((A2.AirBags=='None')&(A2.Type=='Compact'))&(A2.Price<20)][['Manufacturer','Model','AirBags','Type','Price']
```

Out[109]:

	Manufacturer	Model	AirBags	Type	Price
11	Chevrolet	Cavalier	None	Compact	13.4
32	Ford	Tempo	None	Compact	11.3
67	Oldsmobile	Achieva	None	Compact	13.5
73	Pontiac	Sunbird	None	Compact	11.1

Find out top 7 most fuel economic cars for city, show results in sorted manner based on Horsepower.

In [112…
```
M=Z.head(7)[['Manufacturer','Model','MPG.city','Horsepower']]
```

In [116…
```
M.sort_values(by=['Horsepower'],ascending=False)
```

Out[116]:

	Manufacturer	Model	MPG.city	Horsepower
41	Honda	Civic	42	102
83	Toyota	Tercel	32	82
72	Pontiac	LeMans	31	74
79	Subaru	Justy	33	73
82	Suzuki	Swift	39	70
30	Ford	Festiva	31	63
38	Geo	Metro	46	55

Find out Cars having mileage of more than 15 miles in city

In [118…
```
A2[A2['MPG.city']>15][['Manufacturer','Model','Type','MPG.city']]
```

Out[118]:

	Manufacturer	Model	Type	MPG.city
0	Acura	Integra	Small	25
1	Acura	Legend	Midsize	18
2	Audi	90	Compact	20
3	Audi	100	Midsize	19
4	BMW	535i	Midsize	22
...	...	...	...	...
88	Volkswagen	Eurovan	Van	17
89	Volkswagen	Passat	Compact	21
90	Volkswagen	Corrado	Sporty	18
91	Volvo	240	Compact	21
92	Volvo	850	Midsize	20

91 rows × 4 columns

Find out Cars with US based origin¶

In [122…
```
A2[A2['Origin']=='USA'][['Manufacturer','Model','Type','Origin']]
```

Out[122]:

	Manufacturer	Model	Type	Origin
5	Buick	Century	Midsize	USA
6	Buick	LeSabre	Large	USA
7	Buick	Roadmaster	Large	USA
8	Buick	Riviera	Midsize	USA
9	Cadillac	DeVille	Large	USA
10	Cadillac	Seville	Midsize	USA
11	Chevrolet	Cavalier	Compact	USA
12	Chevrolet	Corsica	Compact	USA
13	Chevrolet	Camaro	Sporty	USA
14	Chevrolet	Lumina	Midsize	USA
15	Chevrolet	Lumina_APV	Van	USA
16	Chevrolet	Astro	Van	USA
17	Chevrolet	Caprice	Large	USA
18	Chevrolet	Corvette	Sporty	USA
19	Chrylser	Concorde	Large	USA
20	Chrysler	LeBaron	Compact	USA
21	Chrysler	Imperial	Large	USA
22	Dodge	Colt	Small	USA
23	Dodge	Shadow	Small	USA
24	Dodge	Spirit	Compact	USA
25	Dodge	Caravan	Van	USA
26	Dodge	Dynasty	Midsize	USA
27	Dodge	Stealth	Sporty	USA
28	Eagle	Summit	Small	USA
29	Eagle	Vision	Large	USA
30	Ford	Festiva	Small	USA
31	Ford	Escort	Small	USA
32	Ford	Tempo	Compact	USA
33	Ford	Mustang	Sporty	USA
34	Ford	Probe	Sporty	USA
35	Ford	Aerostar	Van	USA
36	Ford	Taurus	Midsize	USA
37	Ford	Crown_Victoria	Large	USA
50	Lincoln	Continental	Midsize	USA
51	Lincoln	Town_Car	Large	USA
59	Mercury	Capri	Sporty	USA
60	Mercury	Cougar	Midsize	USA
67	Oldsmobile	Achieva	Compact	USA
68	Oldsmobile	Cutlass_Ciera	Midsize	USA
69	Oldsmobile	Silhouette	Van	USA
70	Oldsmobile	Eighty-Eight	Large	USA
71	Plymouth	Laser	Sporty	USA
72	Pontiac	LeMans	Small	USA
73	Pontiac	Sunbird	Compact	USA
74	Pontiac	Firebird	Sporty	USA
75	Pontiac	Grand_Prix	Midsize	USA
76	Pontiac	Bonneville	Large	USA
78	Saturn	SL	Small	USA

Find out Cars with no airbags and which are compact in type, from the output retrieve only Model, Mileage in city, Type, Airbags

In [124…
```
T=A2[['Model','MPG.city','Type','AirBags']]
```

In [126…
```
T[(T['AirBags']=='None')&(T['Type']=='Compact')]
```

Out[126]:

	Model	MPG.city	Type	AirBags
11	Cavalier	25	Compact	None
32	Tempo	22	Compact	None
67	Achieva	24	Compact	None
73	Sunbird	23	Compact	None
89	Passat	21	Compact	None

Find out cars with Mileage in city more than 15 which are compact in type.

In [127…
```
T[(T['MPG.city']>15)&(T['Type']=='Compact')]
```

Out[127]:

	Model	MPG.city	Type	AirBags
2	90	20	Compact	Driver only
11	Cavalier	25	Compact	None
12	Corsica	25	Compact	Driver only
20	LeBaron	23	Compact	Driver & Passenger
24	Spirit	22	Compact	Driver only
32	Tempo	22	Compact	None
42	Accord	24	Compact	Driver & Passenger
54	626	26	Compact	Driver only
57	190E	20	Compact	Driver only
64	Altima	24	Compact	Driver only
67	Achieva	24	Compact	None
73	Sunbird	23	Compact	None
77	900	20	Compact	Driver only
81	Legacy	23	Compact	Driver only
89	Passat	21	Compact	None
91	240	21	Compact	Driver only

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]: