```
import pandas as pd
nba=pd.read_csv("nbaallelo.csv")
nba
```

	gameorder	game_id	lg_id	_iscopy	year_id	date_game	seasongame	is_playoffs	team_id	fran_id	...	win_equiv
0	1	194611010TRH	NBA	0	1947	11/1/1946	1	0	TRH	Huskies	...	40.294830
1	1	194611010TRH	NBA	1	1947	11/1/1946	1	0	NYK	Knicks	...	41.705170
2	2	194611020CHS	NBA	0	1947	11/2/1946	1	0	CHS	Stags	...	42.012257
3	2	194611020CHS	NBA	1	1947	11/2/1946	2	0	NYK	Knicks	...	40.692783
4	3	194611020DTF	NBA	0	1947	11/2/1946	1	0	DTF	Falcons	...	38.864048
...	...	...	...	...	...	...	...	...	...	...	...	...
126309	63155	201506110CLE	NBA	0	2015	6/11/2015	100	1	CLE	Cavaliers	...	60.309792
126310	63156	201506140GSW	NBA	0	2015	6/14/2015	102	1	GSW	Warriors	...	68.013329
126311	63156	201506140GSW	NBA	1	2015	6/14/2015	101	1	CLE	Cavaliers	...	60.010067
126312	63157	201506170CLE	NBA	0	2015	6/16/2015	102	1	CLE	Cavaliers	...	59.290245
126313	63157	201506170CLE	NBA	1	2015	6/16/2015	103	1	GSW	Warriors	...	68.519516

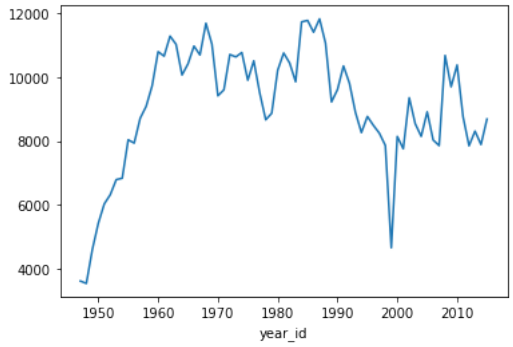
126314 rows × 23 columns

```
%matplotlib inline
nba[nba["team_id"]=="BOS"].groupby("year_id")["pts"].sum()
```

```
year_id
1947    3605
1948    3530
1949    4593
1950    5419
1951    6028
        ...
2011    8765
2012    7852
2013    8312
2014    7892
2015    8691
Name: pts, Length: 69, dtype: int64
```

```
nba[nba["team_id"]=="BOS"].groupby("year_id")["pts"].sum().plot()
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f983cd078e0>
```

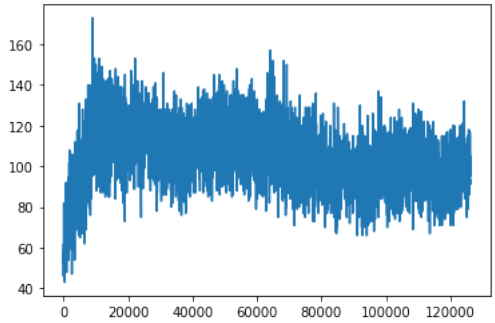



```
nba[nba["team_id"]=="BOS"]["pts"]
```

```
6          53
14         55
28         46
40         61
46         62
          ...
126141    105
126162    100
126173     91
126185     95
126205     93
Name: pts, Length: 5997, dtype: int64
```

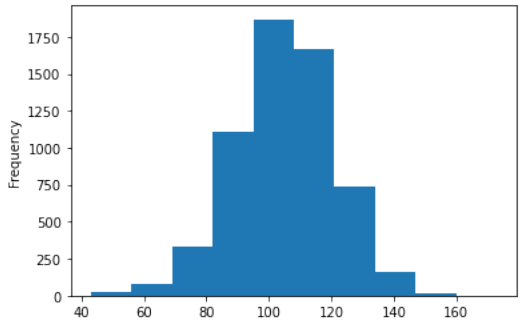
```
nba[nba["team_id"]=="BOS"]["pts"].plot()
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f983c7e1fd0>
```



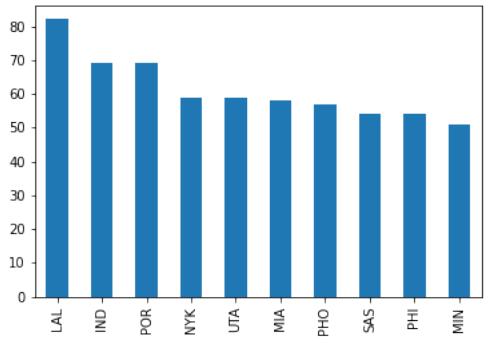

```
nba[nba["team_id"]=="BOS"]["pts"].plot(kind="hist")
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f983cc8ef40>
```




```
nba[(nba["year_id"]==2000)&(nba["game_result"]=="W")]["team_id"].value_counts().head(10).plot(kind="bar")
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f983c734dc0>
```

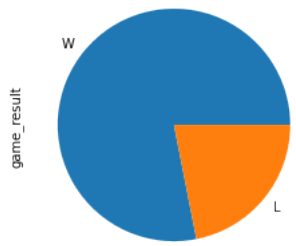



```
nba[(nba["team_id"]=="LAL")&(nba["year_id"]==2000)]["game_result"].value_counts()
```

```
W    82
L    23
Name: game_result, dtype: int64
```

```
nba[(nba["team_id"]=="LAL")&(nba["year_id"]==2000)]["game_result"].value_counts().plot(kind="pie")
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f983c64c220>
```



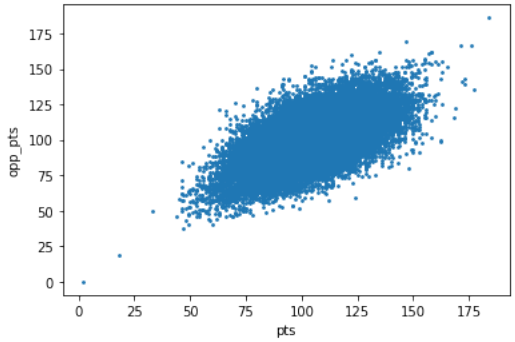
```
nba[nba["game_location"]=="H"][["pts","opp_pts"]]
```

	pts	opp_pts
0	66	68
2	63	47
4	33	50
7	59	53
9	56	51
...	...	...
126305	93	95
126307	96	91
126309	82	103
126310	104	91
126312	97	105

63138 rows × 2 columns

```
nba[nba["game_location"]=="H"].plot(x="pts",y="opp_pts",kind="scatter",s=3)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f983c3c7640>
```




```
!pip install nba_api
```

```
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/
Requirement already satisfied: nba_api in /usr/local/lib/python3.8/dist-packages (1.1.14)
Requirement already satisfied: requests in /usr/local/lib/python3.8/dist-packages (from nba_api) (2.25.1)
Requirement already satisfied: numpy<2.0.0,>=1.22.2 in /usr/local/lib/python3.8/dist-packages (from nba_api) (1.24.1)
Requirement already satisfied: chardet<5,>=3.0.2 in /usr/local/lib/python3.8/dist-packages (from requests->nba_api) (4.0.0)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.8/dist-packages (from requests->nba_api) (2022.1
Requirement already satisfied: idna<3,>=2.5 in /usr/local/lib/python3.8/dist-packages (from requests->nba_api) (2.10)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in /usr/local/lib/python3.8/dist-packages (from requests->nba_api) (1.2
```

```
from nba_api.stats.static import teams
nba_teams=teams.get_teams()
type(nba_teams)
len(nba_teams)
```

```
30
```

```
nba_teams[0]
```

```
{'id': 1610612737,
 'full_name': 'Atlanta Hawks',
 'abbreviation': 'ATL',
 'nickname': 'Hawks',
 'city': 'Atlanta',
 'state': 'Atlanta',
 'year_founded': 1949}
```

```
[team for team in nba_teams if team["full_name"]=="Houston Rockets"]
```

```
[{'id': 1610612745,
  'full_name': 'Houston Rockets',
  'abbreviation': 'HOU',
  'nickname': 'Rockets',
  'city': 'Houston',
  'state': 'Texas',
  'year_founded': 1967}]
```

```
for team in nba_teams:
  if team["full_name"]=="Houston Rockets":
    print(team)
```

```
{'id': 1610612745, 'full_name': 'Houston Rockets', 'abbreviation': 'HOU', 'nickname': 'Rockets', 'city': 'Houston', 'state':
```

```
rockets=[team for team in nba_teams if team["full_name"]=="Houston Rockets"][0]
rockets
```

```
{'id': 1610612745,
 'full_name': 'Houston Rockets',
 'abbreviation': 'HOU',
 'nickname': 'Rockets',
 'city': 'Houston',
 'state': 'Texas',
 'year_founded': 1967}
```

```
from nba_api.stats.static import players
nba_players=players.get_players()
type(nba_players)
len(nba_players)
nba_players[0]
```

```
{'id': 76001,
 'full_name': 'Alaa Abdelnaby',
 'first_name': 'Alaa',
 'last_name': 'Abdelnaby',
 'is_active': False}
```

```
[player for player in nba_players if player["full_name"]=="James Harden"]
```

```
[{'id': 201935,
  'full_name': 'James Harden',
  'first_name': 'James',
  'last_name': 'Harden',
  'is_active': True}]
```

```
harden=[player for player in nba_players if player["full_name"]=="James Harden"][0]
harden
```

```
{'id': 201935,
 'full_name': 'James Harden',
 'first_name': 'James',
 'last_name': 'Harden',
 'is_active': True}
```

```
harden["id"]
```

```
201935
```

```
from nba_api.stats.endpoints import playercareerstats
career=playercareerstats.PlayerCareerStats(player_id=harden["id"]).get_data_frames()[0]
type(career)
```

```
pandas.core.frame.DataFrame
```

```
career
```

	PLAYER_ID	SEASON_ID	LEAGUE_ID	TEAM_ID	TEAM_ABBREVIATION	PLAYER_AGE	GP
0	201935	2009–10	00	1610612760	OKC	20.0	76
1	201935	2010–11	00	1610612760	OKC	21.0	82
2	201935	2011–12	00	1610612760	OKC	22.0	62
3	201935	2012–13	00	1610612745	HOU	23.0	78
4	201935	2013–14	00	1610612745	HOU	24.0	73
5	201935	2014–15	00	1610612745	HOU	25.0	81
6	201935	2015–16	00	1610612745	HOU	26.0	82
7	201935	2016–17	00	1610612745	HOU	27.0	81
8	201935	2017–18	00	1610612745	HOU	28.0	72
9	201935	2018–19	00	1610612745	HOU	29.0	78
10	201935	2019–20	00	1610612745	HOU	30.0	68
11	201935	2020–21	00	1610612745	HOU	31.0	8
12	201935	2020–21	00	1610612751	BKN	31.0	36
13	201935	2020–21	00	0	TOT	31.0	44
14	201935	2021–22	00	1610612751	BKN	32.0	44
15	201935	2021–22	00	1610612755	PHI	32.0	21
16	201935	2021–22	00	0	TOT	32.0	65
17	201935	2022–23	00	1610612755	PHI	33.0	33

18 rows × 27 columns

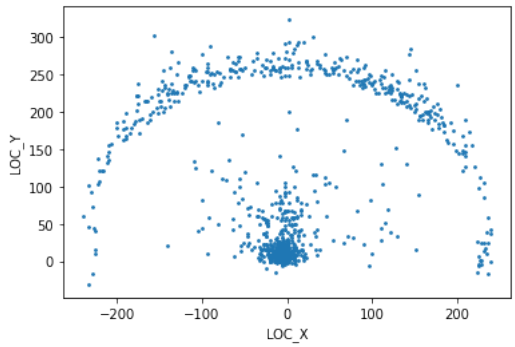
```
from nba_api.stats.endpoints import shotchartdetail
shot_chart=shotchartdetail.ShotChartDetail(
    team_id=0,
    player_id=harden["id"],
    season_nullable="2018-19"
).get_data_frames()[0]
shot_chart
```

	GRID_TYPE	GAME_ID	GAME_EVENT_ID	PLAYER_ID	PLAYER_NAME	TEAM_ID	TEAM
0	Shot Chart Detail	0021800009	103	201935	James Harden	1610612745	Ho Ro
1	Shot Chart Detail	0021800009	246	201935	James Harden	1610612745	Ho Ro
2	Shot Chart Detail	0021800009	282	201935	James Harden	1610612745	Ho Ro
3	Shot Chart Detail	0021800009	421	201935	James Harden	1610612745	Ho Ro
4	Shot Chart Detail	0021800009	635	201935	James Harden	1610612745	Ho Ro
...	...	...	...	...	...	...	
838	Shot Chart Detail	0021801218	302	201935	James Harden	1610612745	Ho Ro
839	Shot Chart Detail	0021801218	321	201935	James Harden	1610612745	Ho Ro
840	Shot Chart Detail	0021801218	323	201935	James Harden	1610612745	Ho Ro
841	Shot Chart Detail	0021801218	417	201935	James Harden	1610612745	Ho Ro
842	Shot Chart Detail	0021801218	452	201935	James Harden	1610612745	Ho Ro

843 rows × 24 columns

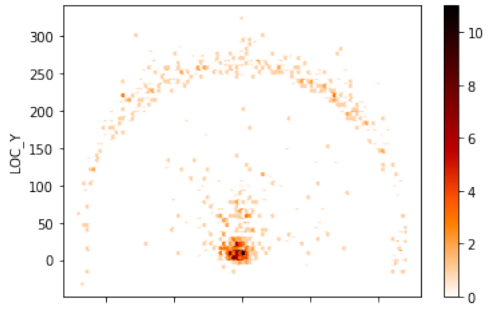
```
shot_chart.plot("LOC_X","LOC_Y",kind="scatter",s=3)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f983a15adc0>
```




```
shot_chart.plot("LOC_X","LOC_Y",kind="hexbin",colormap="gist_heat_r")
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f983a055e80>
```




```
from nba_api.stats.endpoints import leaguegamefinder
games=leaguegamefinder.LeagueGameFinder(team_id_nullable=rockets["id"]).get_data_frames()[0]
games
```

	SEASON_ID	TEAM_ID	TEAM_ABBREVIATION	TEAM_NAME	GAME_ID	GAME_DATE	M
0	22022	1610612745	HOU	Houston Rockets	0022200743	2023-01-28	
1	22022	1610612745	HOU	Houston Rockets	0022200733	2023-01-26	
2	22022	1610612745	HOU	Houston Rockets	0022200722	2023-01-25	
3	22022	1610612745	HOU	Houston Rockets	0022200709	2023-01-23	
4	22022	1610612745	HOU	Houston Rockets	0022200696	2023-01-21	
...	...	...	...	...	...	...	
3633	21983	1610612745	HOU	Houston Rockets	0028300055	1983-11-05	
3634	21983	1610612745	HOU	Houston Rockets	0028300045	1983-11-04	
3635	21983	1610612745	HOU	Houston Rockets	0028300031	1983-11-02	
3636	21983	1610612745	HOU	Houston Rockets	0028300023	1983-11-01	
3637	21983	1610612745	HOU	Houston Rockets	0028300015	1983-10-29	

3638 rows × 28 columns

```
from nba_api.stats.endpoints import playbyplayv2
pbp=playbyplayv2.PlayByPlayV2(games.at[0,"GAME_ID"]).get_data_frames()[0]
pbp
```

	GAME_ID	EVENTNUM	EVENTMSGTYPE	EVENTMSGACTIONTYPE	PERIOD	WCTIMESTRING
0	0022200743	2	12	0	1	7:12 PM
1	0022200743	4	10	0	1	7:12 PM
2	0022200743	7	6	2	1	7:12 PM
3	0022200743	9	3	11	1	7:13 PM
4	0022200743	10	3	12	1	7:13 PM
...	...	...	...	...	...	...
495	0022200743	701	3	11	4	9:35 PM
496	0022200743	702	3	12	4	9:35 PM
497	0022200743	703	2	1	4	9:35 PM
498	0022200743	704	4	0	4	9:35 PM
499	0022200743	707	13	0	4	9:36 PM

500 rows × 34 columns