

```
1 fpat = '/content/Valve_Player_Data.csv'
2
3 import pandas as p
4 import numpy as n

1 steem = p.read_csv(fpat)
2 steem
```

	Month_Year	Avg_players	Gain	Percent_Gain	Peak_Players	URL	Date	Game_Name
0	September 2021	512350.92	268.96	+0.05%	942519	https://steamcharts.com/app/730	2021-09-01	Counter Strike: Global Offensive
1	August 2021	512081.96	6014.60	+1.19%	802544	https://steamcharts.com/app/730	2021-08-01	Counter Strike: Global Offensive
2	July 2021	506067.36	-43279.72	-7.88%	763523	https://steamcharts.com/app/730	2021-07-01	Counter Strike: Global Offensive
3	June 2021	549347.08	-110541.81	-16.75%	929940	https://steamcharts.com/app/730	2021-06-01	Counter Strike: Global Offensive
4	May 2021	659888.89	-63457.63	-8.77%	1087197	https://steamcharts.com/app/730	2021-05-01	Counter Strike: Global Offensive
...
5266	December 2016	192.03	-21.90	-10.24%	405	https://steamcharts.com/app/435150	2016-12-01	Divinity: Original Sin 2
5267	November 2016	213.92	-134.68	-38.63%	537	https://steamcharts.com/app/435150	2016-11-01	Divinity: Original Sin 2
5268	October 2016	348.60	-201.75	-36.66%	1031	https://steamcharts.com/app/435150	2016-10-01	Divinity: Original Sin 2
5269	September 2016	550.36	543.26	+7654.89%	2836	https://steamcharts.com/app/435150	2016-09-01	Divinity: Original Sin 2
5270	August 2016	7.10	NaN	NaN	18	https://steamcharts.com/app/435150	2016-08-01	Divinity: Original Sin 2

5271 rows x 8 columns

```
1 '''remove the null values in my dataset
2 (usually the first days of a game)'''
3
4 clsteem = steem.dropna()
5 clsteem
```

	Month_Year	Avg_players	Gain	Percent_Gain	Peak_Players	URL	Date	Game_Name
0	September 2021	512350.92	268.96	+0.05%	942519	https://steamcharts.com/app/730	2021-09-01	Counter Strike: Global Offensive
1	August 2021	512081.96	6014.60	+1.19%	802544	https://steamcharts.com/app/730	2021-08-01	Counter Strike: Global Offensive
2	July 2021	506067.36	-43279.72	-7.88%	763523	https://steamcharts.com/app/730	2021-07-01	Counter Strike: Global Offensive
3	June 2021	549347.08	-110541.81	-16.75%	929940	https://steamcharts.com/app/730	2021-06-01	Counter Strike: Global Offensive
4	May 2021	659888.89	-63457.63	-8.77%	1087197	https://steamcharts.com/app/730	2021-05-01	Counter Strike: Global Offensive
...
5265	January 2017	206.26	14.23	+7.41%	429	https://steamcharts.com/app/435150	2017-01-01	Divinity: Original Sin 2
5266	December 2016	192.03	-21.90	-10.24%	405	https://steamcharts.com/app/435150	2016-12-01	Divinity: Original Sin 2
5267	November 2016	213.92	-134.68	-38.63%	537	https://steamcharts.com/app/435150	2016-11-01	Divinity: Original Sin 2
5268	October 2016	348.60	-201.75	-36.66%	1031	https://steamcharts.com/app/435150	2016-10-01	Divinity: Original Sin 2
5269	September 2016	550.36	543.26	+7654.89%	2836	https://steamcharts.com/app/435150	2016-09-01	Divinity: Original Sin 2

5173 rows x 8 columns

```
1 '''Total number of players (playing the top 100 games on Steam)'''
2
3 tps = n.sum(clsteem['Peak_Players'])
4 print('the total concurrent players playing the top 100 games in steam are: ',tps, 'players\n')
5 mstm = n.mean(clsteem['Avg_players'])
6 print('the total average players playing from 2016 -2021: ',round(mstm, 2), 'players\n')
7
8
9 '''Date with the highest players'''
10
11 print('Date and Game with the highest players:')
12
13 # Find the index of the row with the highest peak players
14 mxpidx = clsteem['Peak_Players'].idxmax()
15 mxp = clsteem.iloc[[mxpidx]]
16 mxp
```

the total concurrent players playing the top 100 games in steam are: 365988624 players

the total average players playing from 2016 -2021: 37825.4 players

Date and Game with the highest players:

	Month_Year	Avg_players	Gain	Percent_Gain	Peak_Players	URL	Date	Game_Name
268	November 2017	1334170.09	247531.23	+22.78%	2915723	https://steamcharts.com/app/578080	2017-11-01	PUBG: Battlegrounds

```
1 '''analyze player growth'''
2
3 pgd = clsteem['Avg_players'].diff()
4 print('Monthly player change:\n', pgd)
```

Monthly player change:

0	NaN
1	-268.96
2	-6014.60
3	43279.72
4	110541.81
...	...
5265	-36.43
5266	-14.23
5267	21.89
5268	134.68
5269	201.76

Name: Avg_players, Length: 5173, dtype: float64

```
1 '''Selected game's player data statistics'''
2 # For CSGO
3
4 csgo = p.DataFrame(clsteem)
5 csgo = clsteem[clsteem['Game_Name'] == 'Counter Strike: Global Offensive'].copy()
6 csgo.drop(['URL'], axis = 1, inplace = True)
7 csgo
```

	Month_Year	Avg_players	Gain	Percent_Gain	Peak_Players	Date	Game_Name
0	September 2021	512350.92	268.96	+0.05%	942519	2021-09-01	Counter Strike: Global Offensive
1	August 2021	512081.96	6014.60	+1.19%	802544	2021-08-01	Counter Strike: Global Offensive
2	July 2021	506067.36	-43279.72	-7.88%	763523	2021-07-01	Counter Strike: Global Offensive
3	June 2021	549347.08	-110541.81	-16.75%	929940	2021-06-01	Counter Strike: Global Offensive
4	May 2021	659888.89	-63457.63	-8.77%	1087197	2021-05-01	Counter Strike: Global Offensive
...
105	December 2012	14079.39	-54.71	-0.39%	27553	2012-12-01	Counter Strike: Global Offensive
106	November 2012	14134.10	3394.62	+31.61%	59533	2012-11-01	Counter Strike: Global Offensive
107	October 2012	10739.48	-6261.27	-32.88%	20850	2012-10-01	Counter Strike: Global Offensive
108	September 2012	16000.75	525.36	+3.39%	36057	2012-09-01	Counter Strike: Global Offensive
109	August 2012	15475.39	14542.81	+1559.43%	52261	2012-08-01	Counter Strike: Global Offensive

110 rows x 7 columns

```
1 # CSGO
2
3 '''get the total players of the game based on peak players'''
4 csgotot = n.sum(csgo['Peak_Players'])
5 print('Total players of CSGO in Steam from 2012 - 2021: ',csgotot, 'players\n')
6
7 '''mean of players of the game'''
8 csgoam = n.mean(csgo['Avg_players'])
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	Month_Year	Avg_players	Gain	Percent_Gain	Peak_Players	Date	Game_Name
389	September 2021	81232.20	-37668.37	-31.68%	151408	2021-09-01	Grand Theft Auto V
400	August 2021	118900.57	6905.15	+5.23%	214591	2021-08-01	Grand Theft Auto V
401	July 2021	112995.42	24080.02	+27.08%	218784	2021-07-01	Grand Theft Auto V
402	June 2021	88915.40	4158.64	+4.91%	155996	2021-06-01	Grand Theft Auto V
403	May 2021	84796.76	-7891.05	-8.52%	146011	2021-05-01	Grand Theft Auto V
...
471	September 2015	25387.81	-5530.26	-17.89%	46917	2015-09-01	Grand Theft Auto V
472	August 2015	30918.06	-6739.01	-17.90%	50980	2015-08-01	Grand Theft Auto V
473	July 2015	37657.07	-5096.17	-19.80%	60908	2015-07-01	Grand Theft Auto V
474	June 2015	46953.24	-46408.38	-49.71%	85195	2015-06-01	Grand Theft Auto V
475	May 2015	93381.62	-99352.39	-51.55%	215966	2015-05-01	Grand Theft Auto V

77 rows x 7 columns

```
1 # GTA V
2
3 '''get the total players of the game based on peak players'''
4 gtatot = n.sum(gtav['Peak_Players'])
5 print('Total players of GTA V in Steam from 2015 - 2021: ',gtatot, 'players\n')
6
7 '''mean of players of the game'''
8 gtam = n.mean(gtav['Avg_players'])
9 print('Total average of GTA V players: ',round(gtam, 2), 'players')
10
11 '''lowest average players of the game'''
12 gtamin = n.min(gtav['Avg_players'])
13 print('Lowest players of GTA V: ',gtamin, 'players')
14
15 '''highest peak players of the game'''
16 hgtav = n.max(gtav['Peak_Players'])
17 print('The highest peak players of GTA V: ',hgtav, 'players')
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Total players of GTA V in Steam from 2015 - 2021: 9793756 players

Total average of GTA V players: 65219.18 players

Lowest players of GTA V: 25239.19 players

The highest peak players of GTA V: 267368 players

```
1 '''Selected game's player data statistics'''
2 # For Apex Legends
3
4 al = p.DataFrame(clisteem)
5 al = clisteem[clisteem['Game_Name'] == 'Apex Legends'].copy()
6 al.drop(['URL'], axis = 1, inplace = True)
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