In [11]:
```
# Solution of Question 1

import pandas as pd
import numpy as np

file_names = ['species.csv', 'planets.csv' , 'characters.csv', 'starshi
ps.csv', 'vehicles.csv']
for name in file_names:
    data = pd.read_csv(name)
    data.dropna().to_csv('id_t1_'+name, index=False)
```

In [12]:
```
# Solution of Question 2

data = pd.read_csv('id_t1_characters.csv')
humans = data[data['species'] == 'Human'].drop_duplicates()
sort_data = humans.sort_values(by='height', axis=0, ascending=False, in
place=False, kind='quicksort', na_position='last')
sort_data.head().to_csv('id_t2_sol.csv', index=False , columns = ['nam
e','height'], )
```

In [13]:
```
# Solution of Question 3

data = pd.read_csv('id_t1_planets.csv')
mean_distance = data["population"].mean()
sixty_percent = (mean_distance / 100 ) * 60

shooting_planets = data[(data.population < (mean_distance + sixty_perce
nt)) & (data.population > (mean_distance - sixty_percent))]
shooting_planets.to_csv('id_t3_sol.csv', index=False)
```

In [14]:
```
# Solution of Question 4

data = pd.read_csv('id_t1_vehicles.csv')
aggregate_dataframe = data.groupby('vehicle_class').agg({'max_atmospher
ing_speed': 'mean', 'passengers': 'mean'})
```

```
aggregate_dataframe['mean_sum'] = aggregate_dataframe['max_atmosphering
_speed'] + aggregate_dataframe['passengers']
sort = aggregate_dataframe.sort_values(by=['mean_sum'], axis=0, ascendi
ng=False, inplace=False, kind='quicksort', na_position='last')

sort.drop('mean_sum',axis = 1).head(3).to_csv('id_t4_sol.csv')
```

In [15]:
```
# Solution of Question 5

data = pd.read_csv('id_t1_starships.csv')
data['length'] = data['length'].str.replace(',','')

x = np.array(data.length)
data.length = x.astype(np.float)
del data['manufacturer']
del data['cost_in_credits']
del data['max_atmosphering_speed']
del data['crew']
del data['passengers']
del data['cargo_capacity']
del data['consumables']
del data['hyperdrive_rating']
del data['MGLT']


pivedu=pd.pivot_table(data, values='length', index=['name', 'model'], c
olumns=['starship_class'])
pivedu.to_csv('id_t5_sol.csv')
```

In [ ]:
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In [ ]:
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