

List and CSV file

In [37]: *# List of heroes*

```
heroes = ['A-Bomb', 'Abe Sapien', 'Abin Sur', 'Abomination', 'Absorbing Man',  
'Adam Strange', 'Agent 13', 'Agent Bob', 'Agent Zero', 'Air-Walker',  
'Ajax', 'Alan Scott', 'Alfred Pennyworth', 'Alien', 'Amazo', 'Ammo',  
'Angel', 'Angel Dust', 'Angel Salvadore', 'Animal Man', 'Annihilus',  
'Ant-Man', 'Ant-Man II', 'Anti-Venom', 'Apocalypse', 'Aqualad', 'Aquam  
'Arachne', 'Archangel', 'Arclight', 'Ardina', 'Ares', 'Ariel', 'Armor'  
'Atlas', 'Atom', 'Atom Girl', 'Atom II', 'Aurora', 'Azazel', 'Bane',  
'Banshee', 'Bantam', 'Batgirl', 'Batgirl IV', 'Batgirl VI', 'Batman',  
'Batman II', 'Battlestar', 'Beak', 'Beast', 'Beast Boy', 'Beta Ray Bil  
'Big Barda', 'Big Man', 'Binary', 'Bishop', 'Bizarro', 'Black Adam',  
'Black Bolt', 'Black Canary', 'Black Cat', 'Black Knight III', 'Black  
'Black Mamba', 'Black Manta', 'Black Panther', 'Black Widow', 'Black W  
'Blackout', 'Blackwing', 'Blackwulf', 'Blade', 'Bling!', 'Blink', 'Bli  
'Blob', 'Bloodaxe', 'Blue Beetle II', 'Boom-Boom', 'Booster Gold', 'Bo  
'Brainiac', 'Brainiac 5', 'Brother Voodoo', 'Buffy', 'Bullseye', 'Bumb  
'Cable', 'Callisto', 'Cannonball', 'Captain America', 'Captain Atom',  
'Captain Britain', 'Captain Mar-vell', 'Captain Marvel', 'Captain Marv  
'Carnage', 'Cat', 'Catwoman', 'Cecilia Reyes', 'Century', 'Chamber', '  
'Cheetah', 'Cheetah II', 'Cheetah III', 'Chromos', 'Citizen Steel', 'C  
'Clock King', 'Colossus', 'Copycat', 'Corsair', 'Cottonmouth', 'Crimso  
'Crystal', 'Cyborg', 'Cyclops', 'Cypher', 'Dagger', 'Daredevil', 'Dark  
'Darkseid', 'Darkstar', 'Darth Vader', 'Dash', 'Dazzler', 'Deadman', '  
'Deadshot', 'Deathlok', 'Deathstroke', 'Demogoblin', 'Destroyer', 'Dia  
'Doc Samson', 'Doctor Doom', 'Doctor Doom II', 'Doctor Fate', 'Doctor  
'Doctor Strange', 'Domino', 'Donna Troy', 'Doomsday', 'Doppelganger',  
'Drax the Destroyer', 'Elastigirl', 'Electro', 'Elektra', 'Elongated M  
'Emma Frost', 'Enchantress', 'Etrigan', 'Evil Deadpool', 'Evilhawk',  
'Exodus', 'Fabian Cortez', 'Falcon', 'Feral', 'Fin Fang Foom', 'Firebi  
'Firelord', 'Firestar', 'Firestorm', 'Flash', 'Flash II', 'Flash III',  
'Flash IV', 'Forge', 'Franklin Richards', 'Franklin Storm', 'Frenzy',  
'Frigga', 'Galactus', 'Gambit', 'Gamora', 'Genesis', 'Ghost Rider', 'G  
'Gladiator', 'Goblin Queen', 'Goku', 'Goliath IV', 'Gorilla Grodd', 'G  
'Gravity', 'Green Arrow', 'Green Goblin', 'Green Goblin II', 'Green Go  
'Green Goblin IV', 'Groot', 'Guy Gardner', 'Hal Jordan', 'Han Solo', '  
'Havok', 'Hawk', 'Hawkeye', 'Hawkeye II', 'Hawkgirl', 'Hawkman', 'Haw  
'Hawkwoman III', 'Heat Wave', 'Hela', 'Hellboy', 'Hellcat', 'Hellstorm  
'Hercules', 'Hobgoblin', 'Hope Summers', 'Howard the Duck', 'Hulk', 'H  
'Huntress', 'Husk', 'Hybrid', 'Hydro-Man', 'Hyperion', 'Iceman', 'Impu  
'Ink', 'Invisible Woman', 'Iron Fist', 'Iron Man', 'Jack of Hearts', '  
'James T. Kirk', 'Jean Grey', 'Jennifer Kale', 'Jessica Jones', 'Jigsa  
'John Stewart', 'John Wraith', 'Joker', 'Jolt', 'Jubilee', 'Juggernaut  
'Justice', 'Kang', 'Karate Kid', 'Killer Croc', 'Kilowog', 'Kingpin',  
'Klaw', 'Kraven II', 'Kraven the Hunter', 'Krypto', 'Kyle Rayner',  
'Lady Deathstrike', 'Leader', 'Legion', 'Lex Luthor', 'Light Lass',  
'Lightning Lad', 'Lightning Lord', 'Living Brain', 'Lizard', 'Lobo', '  
'Longshot', 'Luke Cage', 'Luke Skywalker', 'Mach-IV', 'Machine Man', '  
'Man-Thing', 'Man-Wolf', 'Mandarin', 'Mantis', 'Martian Manhunter', 'M  
'Master Brood', 'Maverick', 'Maxima', 'Medusa', 'Meltdown', 'Mephisto'  
'Metallo', 'Metamorpho', 'Metron', 'Micro Lad', 'Mimic', 'Miss Martian  
'Mister Fantastic', 'Mister Freeze', 'Mister Sinister', 'Mockingbird',  
'Molten Man', 'Monarch', 'Moon Knight', 'Moonstone', 'Morlun', 'Morph'  
'Mr Immortal', 'Mr Incredible', 'Ms Marvel II', 'Multiple Man', 'Myste  
'Mystique', 'Namor', 'Namora', 'Namorita', 'Naruto Uzumaki', 'Nebula',  
'Nightcrawler', 'Nightwing', 'Northstar', 'Nova', 'Odin', 'Omega Red',
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'Omniscient', 'One Punch Man', 'Onslaught', 'Oracle', 'Paul Blart', 'P
'Penguin', 'Phantom Girl', 'Phoenix', 'Plantman', 'Plastic Man', 'Plas
'Poison Ivy', 'Polaris', 'Power Girl', 'Predator', 'Professor X', 'Pro
'Psylocke', 'Punisher', 'Purple Man', 'Pyro', 'Question', 'Quicksilver
"Ra's Al Ghul", 'Raven', 'Ray', 'Razor-Fist II', 'Red Arrow', 'Red Hoc
'Red Robin', 'Red Skull', 'Red Tornado', 'Rhino', 'Rick Flag', 'Ripcor
'Robin II', 'Robin III', 'Robin V', 'Rocket Raccoon', 'Rogue', 'Ronin'
'Sabretooth', 'Sage', 'Sandman', 'Sasquatch', 'Scarecrow', 'Scarlet Sp
'Scarlet Spider II', 'Scarlet Witch', 'Scorpion', 'Sentry', 'Shadow Ki
'Shadow Lass', 'Shadowcat', 'Shang-Chi', 'Shatterstar', 'She-Hulk', 'S
'Shocker', 'Shriek', 'Sif', 'Silver Surfer', 'Silverclaw', 'Sinestro',
'Siryn', 'Skaar', 'Snowbird', 'Solomon Grundy', 'Songbird', 'Space Gho
'Spawn', 'Spider-Girl', 'Spider-Gwen', 'Spider-Man', 'Spider-Woman', '
'Spider-Woman IV', 'Spock', 'Spyke', 'Star-Lord', 'Starfire', 'Stargir
'Steel', 'Steppenwolf', 'Storm', 'Sunspot', 'Superboy', 'Superboy-Prim
'Superman', 'Swarm', 'Synch', 'T-1000', 'Taskmaster', 'Tempest', 'Than
'Thing', 'Thor', 'Thor Girl', 'Thunderbird', 'Thunderbird III', 'Thund
'Thundra', 'Tiger Shark', 'Tigra', 'Tinkerer', 'Toad', 'Toxin', 'Trick
'Triton', 'Two-Face', 'Ultragirl', 'Ultron', 'Utgard-Loki', 'Vagabond'
'Valkyrie', 'Vanisher', 'Vegeta', 'Venom', 'Venom II', 'Venom III', 'V
'Vindicator', 'Violet Parr', 'Vision', 'Vision II', 'Vixen', 'Vulture'
'Warbird', 'Warlock', 'Warp', 'Warp', 'Wasp', 'White Queen', 'Winte
'Wolfsbane', 'Wolverine', 'Wonder Girl', 'Wonder Man', 'Wonder Woman',
'X-23', 'X-Man', 'Yellow Claw', 'Yellowjacket', 'Yellowjacket II', 'Yo
```

save the list as csv file

```
In [38]: # save the list as csv file
import csv

with open('./heroes.csv', 'w+', newline='') as csv_file:
    writer = csv.writer(csv_file)
    writer.writerow(heroes)
```

Make a list from a csv file

```
In [39]: # load from a csv file
import numpy as np

list_heroes = np.loadtxt('./heroes.csv', delimiter=',', dtype=str)

print(list_heroes[:10])
```

```
['A-Bomb' 'Abe Sapien' 'Abin Sur' 'Abomination' 'Absorbing Man'
'Adam Strange' 'Agent 13' 'Agent Bob' 'Agent Zero' 'Air-Walker']
```

```
In [40]: print(type(list_heroes))

<class 'numpy.ndarray'>
```

```
In [41]: hero_list = []

with open('./heroes.csv', 'r') as csv_file:
    hero_list = list(csv.reader(csv_file))
```

```
In [44]: for i in hero_list:
    print(i[:10])
```

```
['A-Bomb', 'Abe Sapien', 'Abin Sur', 'Abomination', 'Absorbing Man', 'Adam Strange', 'Agent 13', 'Agent Bob', 'Agent Zero', 'Air-Walker']
```

Create a list from a column of a csv file

```
In [58]: import pandas as pd

df = pd.read_csv('./heroes_information.csv',
                 index_col=False,
                 encoding='UTF-8')

display(df.head())

df.info()
```

	Unnamed: 0	name	Gender	Eye color	Race	Hair color	Height	Publisher	Skin color	Al
0	0	A-Bomb	Male	yellow	Human	No Hair	203.0	Marvel Comics	-	
1	1	Abe Sapien	Male	blue	Ichthyo Sapien	No Hair	191.0	Dark Horse Comics	blue	
2	2	Abin Sur	Male	blue	Ungaran	No Hair	185.0	DC Comics	red	
3	3	Abomination	Male	green	Human / Radiation	No Hair	203.0	Marvel Comics	-	
4	4	Abraxas	Male	blue	Cosmic Entity	Black	-99.0	Marvel Comics	-	

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 734 entries, 0 to 733
Data columns (total 11 columns):
#   Column          Non-Null Count  Dtype
---  -
0   Unnamed: 0      734 non-null   int64
1   name            734 non-null   object
2   Gender          734 non-null   object
3   Eye color       734 non-null   object
4   Race            734 non-null   object
5   Hair color      734 non-null   object
6   Height          734 non-null   float64
7   Publisher       719 non-null   object
8   Skin color      734 non-null   object
9   Alignment       734 non-null   object
10  Weight          734 non-null   float64
dtypes: float64(2), int64(1), object(8)
memory usage: 63.2+ KB
```

```
In [59]: # create list name
name = []

with open('./heroes_information.csv', 'r') as csv_file:
    reader = csv.DictReader(csv_file)
```

```
for i in reader:  
    name.append(i['name'])  
  
print(name[:10])
```

```
['A-Bomb', 'Abe Sapien', 'Abin Sur', 'Abomination', 'Abraxas', 'Absorbing Man',  
'Adam Monroe', 'Adam Strange', 'Agent 13', 'Agent Bob']
```

Convert a List into a data frame and save its as a csv file

```
In [ ]: # Convert the 'heroes' list into a data frame and save its as a csv file  
import pandas as pd  
  
df = pd.DataFrame(heroes, columns=['hero'])  
display(df)  
  
df.to_csv('./heroes_df.csv', sep=';', index=False)
```