In [9]:
```python
import pandas as pd
from sqlalchemy import create_engine
```

In [10]:
```python
user = 'postgres'
port = '5432'
db = 'may'
host = 'localhost'
pwd = '****'
```

In [11]:
```python
engine = create_engine(f"postgresql://{user}:{pwd}@{host}:{port}/{db}")
```

In [24]:
```python
order_sql = "SELECT make, model, price FROM car;"
cars = pd.read_sql_query(order_sql, engine)
print(cars)
```

```
          make            model    price
0      Hyundai          Elantra  8118.17
1         Ford         F-Series  3575.86
2       Toyota       TundraMax  2180.36
3    Chevrolet  Suburban 1500  3112.80
4          GMC            Jimmy  2916.69
..         ...              ...      ...
95     Pontiac          Montana  9378.56
96       Buick      Coachbuilder  9069.88
97     Hyundai         Santa Fe  7640.71
98         GMC            Envoy  5013.41
99  Volkswagen         Golf III  2693.57

[100 rows x 3 columns]
```

In [22]:
```python
df = pd.DataFrame(cars)
df.to_csv (r'/Users/chukwunonsodavid/Downloads/car.csv', index = False)
```

In [25]:
```python
import csv
```

In [26]:
```python
with open('/Users/chukwunonsodavid/Downloads/car.csv', newline='') as f:
    reader = csv.reader(f)
    data = list(reader)
```

In [27]:
```python
data
```

Out[27]:
```
[['make', 'model', 'price'],
 ['Hyundai', 'Elantra', '8118.17'],
 ['Ford', 'F-Series', '3575.86'],
 ['Toyota', 'TundraMax', '2180.36'],
 ['Chevrolet', 'Suburban 1500', '3112.8'],
 ['GMC', 'Jimmy', '2916.69'],
 ['Dodge', 'Caravan', '8536.79'],
 ['Chevrolet', 'Tahoe', '6971.71'],
 ['Subaru', 'Impreza', '9163.17'],
 ['Dodge', 'Viper', '1913.57'],
 ['Scion', 'xB', '8090.91'],
 ['Audi', 'S4', '6004.54'],
 ['Bentley', 'Continental GTC', '1236.22'],
 ['Subaru', 'Impreza', '5496.39'],
 ['Nissan', 'Altima', '6779.28'],
 ['Toyota', 'Celica', '6071.17'],
 ['Isuzu', 'Axiom', '9461.07'],
 ['Mitsubishi', 'Eclipse', '5787.98'],
 ['Mitsubishi', 'Galant', '7293.04'],
 ['Nissan', 'Titan', '3687.63'],
 ['Ford', 'Expedition EL', '4497.77'],
 ['Mercedes-Benz', 'C-Class', '5622.98'],
 ['Pontiac', 'Montana SV6', '5845.84'],
 ['Chevrolet', 'Classic', '6426.44'],
 ['Land Rover', 'Range Rover Classic', '3751.98'],
 ['Isuzu', 'i-290', '9916.52'],
 ['Dodge', 'Ram 2500', '4394.21'],
 ['Suzuki', 'SJ', '9850.64'],
 ['Pontiac', 'G6', '9732.28'],
 ['Eagle', 'Talon', '7749.72'],
 ['Acura', 'TL', '1643.03'],
 ['Pontiac', 'Montana', '2204.06'],
 ['Chevrolet', 'Silverado 3500', '6085.31'],
 ['Lotus', 'Exige', '8339.48'],
 ['Mercedes-Benz', 'SL-Class', '3827.61'],
 ['Ford', 'Explorer Sport', '1570.4'],
 ['Honda', 'S2000', '6322.97'],
 ['Volkswagen', 'GTI', '4185.77'],
 ['Volvo', 'C70', '9500.06'],
 ['Volkswagen', 'Passat', '1351.91'],
 ['Subaru', 'Forester', '1159.65'],
 ['Nissan', 'Frontier', '5268.99'],
 ['Chevrolet', 'Monte Carlo', '7101.08'],
 ['Ford', 'E350', '2264.48'],
 ['Mercury', 'Lynx', '2523.24'],
 ['Honda', 'Accord', '4367.61'],
 ['Ford', 'Thunderbird', '5234.01'],
 ['Honda', 'Accord', '1754.76'],
 ['Jeep', 'Grand Cherokee', '6399.58'],
 ['Lotus', 'Esprit', '9556.46'],
 ['Chrysler', 'Sebring', '3710.23'],
 ['Volkswagen', 'Eurovan', '7056.01'],
 ['Hummer', 'H3', '4396.99'],
 ['Ford', 'E-Series', '4023.68'],
 ['Suzuki', 'SJ', '9975.88'],
 ['Citroën', '2CV', '7444.65'],
 ['Infiniti', 'G', '8159.48'],
 ['Lotus', 'Esprit', '8737.36'],
 ['Ford', 'Thunderbird', '1689.17'],
 ['Land Rover', 'Range Rover', '4510.86'],
 ['Acura', 'NSX', '1313.03'],
 ['BMW', 'X3', '3124.58'],
 ['Ford', 'Escort', '6803.01'],
 ['Ford', 'Excursion', '3550.62'],
 ['Ford', 'Focus', '4192.32'],
 ['Land Rover', 'Freelander', '9803.25'],
 ['Toyota', 'Camry', '2395.94'],
 ['Mitsubishi', 'Eclipse', '5044.14'],
 ['Toyota', 'T100', '1244.64'],
 ['Suzuki', 'Grand Vitara', '4433.83'],
 ['Mazda', 'RX-7', '9554.13'],
 ['Mercury', 'Lynx', '1722.21'],
 ['Nissan', 'Versa', '5735.8'],
 ['Audi', 'S6', '1834.99'],
 ['Jeep', 'Wrangler', '2546.62'],
 ['Chrysler', 'Concorde', '1643.31'],
 ['GMC', 'Safari', '5374.73'],
 ['Hyundai', 'Scoupe', '4404.77'],
 ['BMW', 'M5', '5324.2'],
 ['Ford', 'F150', '7127.88'],
 ['Oldsmobile', '98', '3589.84'],
 ['Oldsmobile', 'Achieva', '2786.0'],
 ['Pontiac', 'Grand Prix', '7273.47'],
 ['Mercedes-Benz', 'W201', '2528.78'],
 ['McLaren', 'MP4-12C', '3522.95'],
 ['Mercury', 'Topaz', '6985.56'],
 ['Isuzu', 'Rodeo', '8027.91'],
 ['Mitsubishi', 'Lancer', '7883.24'],
 ['Buick', 'Regal', '2171.98'],
 ['Ford', 'F450', '6662.7'],
 ['Kia', 'Optima', '5530.28'],
 ['Mazda', '929', '6009.85'],
 ['Chrysler', 'Town & Country', '5645.77'],
 ['Saturn', 'L-Series', '9649.27'],
 ['Lexus', 'SC', '4967.03'],
 ['Volvo', 'S40', '8132.56'],
 ['Pontiac', 'Montana', '9378.56'],
 ['Buick', 'Coachbuilder', '9069.88'],
 ['Hyundai', 'Santa Fe', '7640.71'],
 ['GMC', 'Envoy', '5013.41'],
 ['Volkswagen', 'Golf III', '2693.57']]
```

In [28]:
```python
with open('/Users/chukwunonsodavid/Downloads/car.csv', newline='') as f:
    reader = csv.reader(f)
    data = [tuple(row) for row in reader]
```

In [29]:
```python
data
```

Out[29]:
```
[('make', 'model', 'price'),
 ('Hyundai', 'Elantra', '8118.17'),
 ('Ford', 'F-Series', '3575.86'),
 ('Toyota', 'TundraMax', '2180.36'),
 ('Chevrolet', 'Suburban 1500', '3112.8'),
 ('GMC', 'Jimmy', '2916.69'),
 ('Dodge', 'Caravan', '8536.79'),
 ('Chevrolet', 'Tahoe', '6971.71'),
 ('Subaru', 'Impreza', '9163.17'),
 ('Dodge', 'Viper', '1913.57'),
 ('Scion', 'xB', '8090.91'),
 ('Audi', 'S4', '6004.54'),
 ('Bentley', 'Continental GTC', '1236.22'),
 ('Subaru', 'Impreza', '5496.39'),
 ('Nissan', 'Altima', '6779.28'),
 ('Toyota', 'Celica', '6071.17'),
 ('Isuzu', 'Axiom', '9461.07'),
 ('Mitsubishi', 'Eclipse', '5787.98'),
 ('Mitsubishi', 'Galant', '7293.04'),
 ('Nissan', 'Titan', '3687.63'),
 ('Ford', 'Expedition EL', '4497.77'),
 ('Mercedes-Benz', 'C-Class', '5622.98'),
 ('Pontiac', 'Montana SV6', '5845.84'),
 ('Chevrolet', 'Classic', '6426.44'),
 ('Land Rover', 'Range Rover Classic', '3751.98'),
 ('Isuzu', 'i-290', '9916.52'),
 ('Dodge', 'Ram 2500', '4394.21'),
 ('Suzuki', 'SJ', '9850.64'),
 ('Pontiac', 'G6', '9732.28'),
 ('Eagle', 'Talon', '7749.72'),
 ('Acura', 'TL', '1643.03'),
 ('Pontiac', 'Montana', '2204.06'),
 ('Chevrolet', 'Silverado 3500', '6085.31'),
 ('Lotus', 'Exige', '8339.48'),
 ('Mercedes-Benz', 'SL-Class', '3827.61'),
 ('Ford', 'Explorer Sport', '1570.4'),
 ('Honda', 'S2000', '6322.97'),
 ('Volkswagen', 'GTI', '4185.77'),
 ('Volvo', 'C70', '9500.06'),
 ('Volkswagen', 'Passat', '1351.91'),
 ('Subaru', 'Forester', '1159.65'),
 ('Nissan', 'Frontier', '5268.99'),
 ('Chevrolet', 'Monte Carlo', '7101.08'),
 ('Ford', 'E350', '2264.48'),
 ('Mercury', 'Lynx', '2523.24'),
 ('Honda', 'Accord', '4367.61'),
 ('Ford', 'Thunderbird', '5234.01'),
 ('Honda', 'Accord', '1754.76'),
 ('Jeep', 'Grand Cherokee', '6399.58'),
 ('Lotus', 'Esprit', '9556.46'),
 ('Chrysler', 'Sebring', '3710.23'),
 ('Volkswagen', 'Eurovan', '7056.01'),
 ('Hummer', 'H3', '4396.99'),
 ('Ford', 'E-Series', '4023.68'),
 ('Suzuki', 'SJ', '9975.88'),
 ('Citroën', '2CV', '7444.65'),
 ('Infiniti', 'G', '8159.48'),
 ('Lotus', 'Esprit', '8737.36'),
 ('Ford', 'Thunderbird', '1689.17'),
 ('Land Rover', 'Range Rover', '4510.86'),
 ('Acura', 'NSX', '1313.03'),
 ('BMW', 'X3', '3124.58'),
 ('Ford', 'Escort', '6803.01'),
 ('Ford', 'Excursion', '3550.62'),
 ('Ford', 'Focus', '4192.32'),
 ('Land Rover', 'Freelander', '9803.25'),
 ('Toyota', 'Camry', '2395.94'),
 ('Mitsubishi', 'Eclipse', '5044.14'),
 ('Toyota', 'T100', '1244.64'),
 ('Suzuki', 'Grand Vitara', '4433.83'),
 ('Mazda', 'RX-7', '9554.13'),
 ('Mercury', 'Lynx', '1722.21'),
 ('Nissan', 'Versa', '5735.8'),
 ('Audi', 'S6', '1834.99'),
 ('Jeep', 'Wrangler', '2546.62'),
 ('Chrysler', 'Concorde', '1643.31'),
 ('GMC', 'Safari', '5374.73'),
 ('Hyundai', 'Scoupe', '4404.77'),
 ('BMW', 'M5', '5324.2'),
 ('Ford', 'F150', '7127.88'),
 ('Oldsmobile', '98', '3589.84'),
 ('Oldsmobile', 'Achieva', '2786.0'),
 ('Pontiac', 'Grand Prix', '7273.47'),
 ('Mercedes-Benz', 'W201', '2528.78'),
 ('McLaren', 'MP4-12C', '3522.95'),
 ('Mercury', 'Topaz', '6985.56'),
 ('Isuzu', 'Rodeo', '8027.91'),
 ('Mitsubishi', 'Lancer', '7883.24'),
 ('Buick', 'Regal', '2171.98'),
 ('Ford', 'F450', '6662.7'),
 ('Kia', 'Optima', '5530.28'),
 ('Mazda', '929', '6009.85'),
 ('Chrysler', 'Town & Country', '5645.77'),
 ('Saturn', 'L-Series', '9649.27'),
 ('Lexus', 'SC', '4967.03'),
 ('Volvo', 'S40', '8132.56'),
 ('Pontiac', 'Montana', '9378.56'),
 ('Buick', 'Coachbuilder', '9069.88'),
 ('Hyundai', 'Santa Fe', '7640.71'),
 ('GMC', 'Envoy', '5013.41'),
 ('Volkswagen', 'Golf III', '2693.57')]
```

In [37]:
```python
with open('/Users/chukwunonsodavid/Downloads/car.csv', newline='') as f:
    data = [dict(i) for i in csv.DictReader(f)]
```

In [48]:
```python
data
```

Out[48]:
```
[{'make': 'Hyundai', 'model': 'Elantra', 'price': '8118.17'},
 {'make': 'Ford', 'model': 'F-Series', 'price': '3575.86'},
 {'make': 'Toyota', 'model': 'TundraMax', 'price': '2180.36'},
 {'make': 'Chevrolet', 'model': 'Suburban 1500', 'price': '3112.8'},
 {'make': 'GMC', 'model': 'Jimmy', 'price': '2916.69'},
 {'make': 'Dodge', 'model': 'Caravan', 'price': '8536.79'},
 {'make': 'Chevrolet', 'model': 'Tahoe', 'price': '6971.71'},
 {'make': 'Subaru', 'model': 'Impreza', 'price': '9163.17'},
 {'make': 'Dodge', 'model': 'Viper', 'price': '1913.57'},
 {'make': 'Scion', 'model': 'xB', 'price': '8090.91'},
 {'make': 'Audi', 'model': 'S4', 'price': '6004.54'},
 {'make': 'Bentley', 'model': 'Continental GTC', 'price': '1236.22'},
 {'make': 'Subaru', 'model': 'Impreza', 'price': '5496.39'},
 {'make': 'Nissan', 'model': 'Altima', 'price': '6779.28'},
 {'make': 'Toyota', 'model': 'Celica', 'price': '6071.17'},
 {'make': 'Isuzu', 'model': 'Axiom', 'price': '9461.07'},
 {'make': 'Mitsubishi', 'model': 'Eclipse', 'price': '5787.98'},
 {'make': 'Mitsubishi', 'model': 'Galant', 'price': '7293.04'},
 {'make': 'Nissan', 'model': 'Titan', 'price': '3687.63'},
 {'make': 'Ford', 'model': 'Expedition EL', 'price': '4497.77'},
 {'make': 'Mercedes-Benz', 'model': 'C-Class', 'price': '5622.98'},
 {'make': 'Pontiac', 'model': 'Montana SV6', 'price': '5845.84'},
 {'make': 'Chevrolet', 'model': 'Classic', 'price': '6426.44'},
 {'make': 'Land Rover', 'model': 'Range Rover Classic', 'price': '3751.98'},
 {'make': 'Isuzu', 'model': 'i-290', 'price': '9916.52'},
 {'make': 'Dodge', 'model': 'Ram 2500', 'price': '4394.21'},
 {'make': 'Suzuki', 'model': 'SJ', 'price': '9850.64'},
 {'make': 'Pontiac', 'model': 'G6', 'price': '9732.28'},
 {'make': 'Eagle', 'model': 'Talon', 'price': '7749.72'},
 {'make': 'Acura', 'model': 'TL', 'price': '1643.03'},
 {'make': 'Pontiac', 'model': 'Montana', 'price': '2204.06'},
 {'make': 'Chevrolet', 'model': 'Silverado 3500', 'price': '6085.31'},
 {'make': 'Lotus', 'model': 'Exige', 'price': '8339.48'},
 {'make': 'Mercedes-Benz', 'model': 'SL-Class', 'price': '3827.61'},
 {'make': 'Ford', 'model': 'Explorer Sport', 'price': '1570.4'},
 {'make': 'Honda', 'model': 'S2000', 'price': '6322.97'},
 {'make': 'Volkswagen', 'model': 'GTI', 'price': '4185.77'},
 {'make': 'Volvo', 'model': 'C70', 'price': '9500.06'},
 {'make': 'Volkswagen', 'model': 'Passat', 'price': '1351.91'},
 {'make': 'Subaru', 'model': 'Forester', 'price': '1159.65'},
 {'make': 'Nissan', 'model': 'Frontier', 'price': '5268.99'},
 {'make': 'Chevrolet', 'model': 'Monte Carlo', 'price': '7101.08'},
 {'make': 'Ford', 'model': 'E350', 'price': '2264.48'},
 {'make': 'Mercury', 'model': 'Lynx', 'price': '2523.24'},
 {'make': 'Honda', 'model': 'Accord', 'price': '4367.61'},
 {'make': 'Ford', 'model': 'Thunderbird', 'price': '5234.01'},
 {'make': 'Honda', 'model': 'Accord', 'price': '1754.76'},
 {'make': 'Jeep', 'model': 'Grand Cherokee', 'price': '6399.58'},
 {'make': 'Lotus', 'model': 'Esprit', 'price': '9556.46'},
 {'make': 'Chrysler', 'model': 'Sebring', 'price': '3710.23'},
 {'make': 'Volkswagen', 'model': 'Eurovan', 'price': '7056.01'},
 {'make': 'Hummer', 'model': 'H3', 'price': '4396.99'},
 {'make': 'Ford', 'model': 'E-Series', 'price': '4023.68'},
 {'make': 'Suzuki', 'model': 'SJ', 'price': '9975.88'},
 {'make': 'Citroën', 'model': '2CV', 'price': '7444.65'},
 {'make': 'Infiniti', 'model': 'G', 'price': '8159.48'},
 {'make': 'Lotus', 'model': 'Esprit', 'price': '8737.36'},
 {'make': 'Ford', 'model': 'Thunderbird', 'price': '1689.17'},
 {'make': 'Land Rover', 'model': 'Range Rover', 'price': '4510.86'},
 {'make': 'Acura', 'model': 'NSX', 'price': '1313.03'},
 {'make': 'BMW', 'model': 'X3', 'price': '3124.58'},
 {'make': 'Ford', 'model': 'Escort', 'price': '6803.01'},
 {'make': 'Ford', 'model': 'Excursion', 'price': '3550.62'},
 {'make': 'Ford', 'model': 'Focus', 'price': '4192.32'},
 {'make': 'Land Rover', 'model': 'Freelander', 'price': '9803.25'},
 {'make': 'Toyota', 'model': 'Camry', 'price': '2395.94'},
 {'make': 'Mitsubishi', 'model': 'Eclipse', 'price': '5044.14'},
 {'make': 'Toyota', 'model': 'T100', 'price': '1244.64'},
 {'make': 'Suzuki', 'model': 'Grand Vitara', 'price': '4433.83'},
 {'make': 'Mazda', 'model': 'RX-7', 'price': '9554.13'},
 {'make': 'Mercury', 'model': 'Lynx', 'price': '1722.21'},
 {'make': 'Nissan', 'model': 'Versa', 'price': '5735.8'},
 {'make': 'Audi', 'model': 'S6', 'price': '1834.99'},
 {'make': 'Jeep', 'model': 'Wrangler', 'price': '2546.62'},
 {'make': 'Chrysler', 'model': 'Concorde', 'price': '1643.31'},
 {'make': 'GMC', 'model': 'Safari', 'price': '5374.73'},
 {'make': 'Hyundai', 'model': 'Scoupe', 'price': '4404.77'},
 {'make': 'BMW', 'model': 'M5', 'price': '5324.2'},
 {'make': 'Ford', 'model': 'F150', 'price': '7127.88'},
 {'make': 'Oldsmobile', 'model': '98', 'price': '3589.84'},
 {'make': 'Oldsmobile', 'model': 'Achieva', 'price': '2786.0'},
 {'make': 'Pontiac', 'model': 'Grand Prix', 'price': '7273.47'},
 {'make': 'Mercedes-Benz', 'model': 'W201', 'price': '2528.78'},
 {'make': 'McLaren', 'model': 'MP4-12C', 'price': '3522.95'},
 {'make': 'Mercury', 'model': 'Topaz', 'price': '6985.56'},
 {'make': 'Isuzu', 'model': 'Rodeo', 'price': '8027.91'},
 {'make': 'Mitsubishi', 'model': 'Lancer', 'price': '7883.24'},
 {'make': 'Buick', 'model': 'Regal', 'price': '2171.98'},
 {'make': 'Ford', 'model': 'F450', 'price': '6662.7'},
 {'make': 'Kia', 'model': 'Optima', 'price': '5530.28'},
 {'make': 'Mazda', 'model': '929', 'price': '6009.85'},
 {'make': 'Chrysler', 'model': 'Town & Country', 'price': '5645.77'},
 {'make': 'Saturn', 'model': 'L-Series', 'price': '9649.27'},
 {'make': 'Lexus', 'model': 'SC', 'price': '4967.03'},
 {'make': 'Volvo', 'model': 'S40', 'price': '8132.56'},
 {'make': 'Pontiac', 'model': 'Montana', 'price': '9378.56'},
 {'make': 'Buick', 'model': 'Coachbuilder', 'price': '9069.88'},
 {'make': 'Hyundai', 'model': 'Santa Fe', 'price': '7640.71'},
 {'make': 'GMC', 'model': 'Envoy', 'price': '5013.41'},
 {'make': 'Volkswagen', 'model': 'Golf III', 'price': '2693.57'}]
```

In [111…
```python
make=[]
model=[]
price=[]
with open('/Users/chukwunonsodavid/Downloads/car.csv', newline='') as f:
    reader = csv.reader(f)
    data = list(reader)

for d in data:
    make.append(d[0])
    model.append(d[1])
    price.append(d[2])

cars = zip(make, model, price)

for m, mo, p in cars:
    print(f'car: \t'+ m + '\t' + mo +'\t'+ p)
```

```
car:    make    model   price
car:    Hyundai Elantra 8118.17
car:    Ford    F-Series        3575.86
car:    Toyota  TundraMax       2180.36
car:    Chevrolet       Suburban 1500   3112.8
car:    GMC     Jimmy   2916.69
car:    Dodge   Caravan 8536.79
car:    Chevrolet       Tahoe   6971.71
car:    Subaru  Impreza 9163.17
car:    Dodge   Viper   1913.57
car:    Scion   xB      8090.91
car:    Audi    S4      6004.54
car:    Bentley Continental GTC 1236.22
car:    Subaru  Impreza 5496.39
car:    Nissan  Altima  6779.28
car:    Toyota  Celica  6071.17
car:    Isuzu   Axiom   9461.07
car:    Mitsubishi      Eclipse 5787.98
car:    Mitsubishi      Galant  7293.04
car:    Nissan  Titan   3687.63
car:    Ford    Expedition EL   4497.77
car:    Mercedes-Benz   C-Class 5622.98
car:    Pontiac Montana SV6     5845.84
car:    Chevrolet       Classic 6426.44
car:    Land Rover      Range Rover Classic     3751.98
car:    Isuzu   i-290   9916.52
car:    Dodge   Ram 2500        4394.21
car:    Suzuki  SJ      9850.64
car:    Pontiac G6      9732.28
car:    Eagle   Talon   7749.72
car:    Acura   TL      1643.03
car:    Pontiac Montana 2204.06
car:    Chevrolet       Silverado 3500  6085.31
car:    Lotus   Exige   8339.48
car:    Mercedes-Benz   SL-Class        3827.61
car:    Ford    Explorer Sport  1570.4
car:    Honda   S2000   6322.97
car:    Volkswagen      GTI     4185.77
car:    Volvo   C70     9500.06
car:    Volkswagen      Passat  1351.91
car:    Subaru  Forester        1159.65
car:    Nissan  Frontier        5268.99
car:    Chevrolet       Monte Carlo     7101.08
car:    Ford    E350    2264.48
car:    Mercury Lynx    2523.24
car:    Honda   Accord  4367.61
car:    Ford    Thunderbird     5234.01
car:    Honda   Accord  1754.76
car:    Jeep    Grand Cherokee  6399.58
car:    Lotus   Esprit  9556.46
car:    Chrysler        Sebring 3710.23
car:    Volkswagen      Eurovan 7056.01
car:    Hummer  H3      4396.99
car:    Ford    E-Series        4023.68
car:    Suzuki  SJ      9975.88
car:    Citroën 2CV     7444.65
car:    Infiniti        G       8159.48
car:    Lotus   Esprit  8737.36
car:    Ford    Thunderbird     1689.17
car:    Land Rover      Range Rover     4510.86
car:    Acura   NSX     1313.03
car:    BMW     X3      3124.58
car:    Ford    Escort  6803.01
car:    Ford    Excursion       3550.62
car:    Ford    Focus   4192.32
car:    Land Rover      Freelander      9803.25
car:    Toyota  Camry   2395.94
car:    Mitsubishi      Eclipse 5044.14
car:    Toyota  T100    1244.64
car:    Suzuki  Grand Vitara    4433.83
car:    Mazda   RX-7    9554.13
car:    Mercury Lynx    1722.21
car:    Nissan  Versa   5735.8
car:    Audi    S6      1834.99
car:    Jeep    Wrangler        2546.62
car:    Chrysler        Concorde        1643.31
car:    GMC     Safari  5374.73
car:    Hyundai Scoupe  4404.77
car:    BMW     M5      5324.2
car:    Ford    F150    7127.88
car:    Oldsmobile      98      3589.84
car:    Oldsmobile      Achieva 2786.0
car:    Pontiac Grand Prix      7273.47
car:    Mercedes-Benz   W201    2528.78
car:    McLaren MP4-12C 3522.95
car:    Mercury Topaz   6985.56
car:    Isuzu   Rodeo   8027.91
car:    Mitsubishi      Lancer  7883.24
car:    Buick   Regal   2171.98
car:    Ford    F450    6662.7
car:    Kia     Optima  5530.28
car:    Mazda   929     6009.85
car:    Chrysler        Town & Country  5645.77
car:    Saturn  L-Series        9649.27
car:    Lexus   SC      4967.03
car:    Volvo   S40     8132.56
car:    Pontiac Montana 9378.56
car:    Buick   Coachbuilder    9069.88
car:    Hyundai Santa Fe        7640.71
car:    GMC     Envoy   5013.41
car:    Volkswagen      Golf III        2693.57
```

In [104…
```python
cars_pd = pd.read_csv('/Users/chukwunonsodavid/Downloads/car.csv')
```

In [105…
```python
cars_pd
```

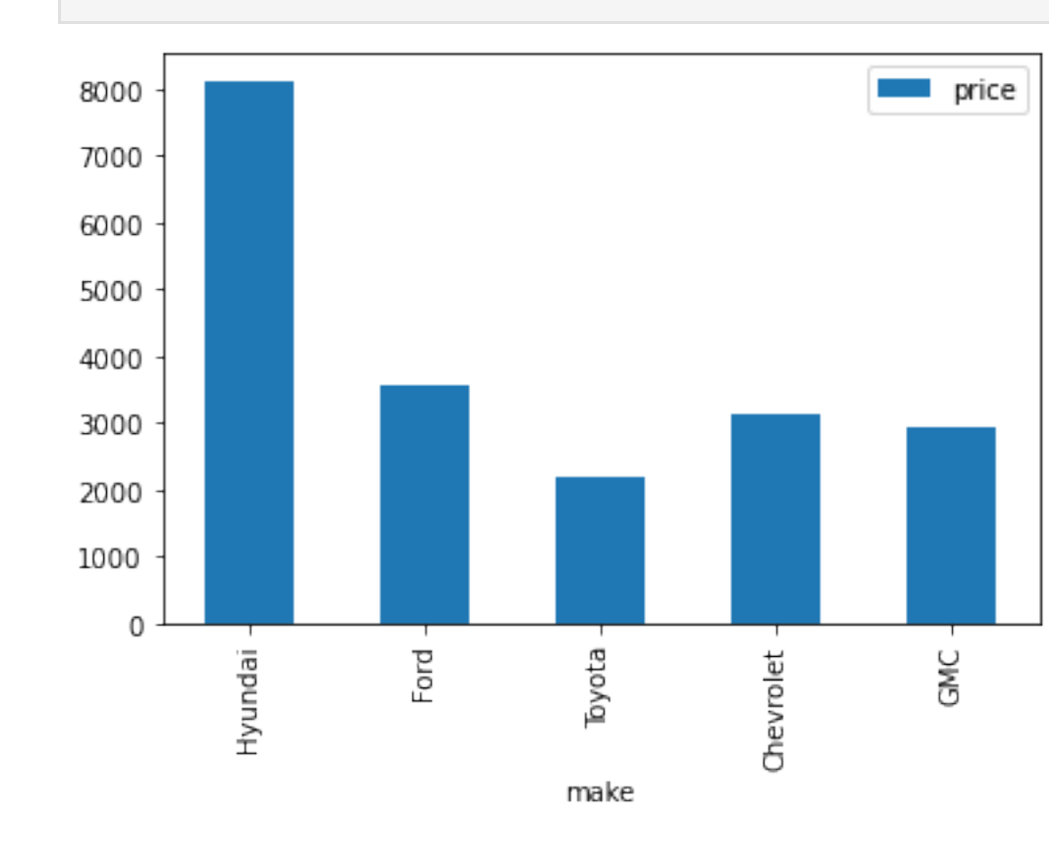
Out[105…

	make	model	price
0	Hyundai	Elantra	8118.17
1	Ford	F-Series	3575.86
2	Toyota	TundraMax	2180.36
3	Chevrolet	Suburban 1500	3112.80
4	GMC	Jimmy	2916.69
...	...	...	...
95	Pontiac	Montana	9378.56
96	Buick	Coachbuilder	9069.88
97	Hyundai	Santa Fe	7640.71
98	GMC	Envoy	5013.41
99	Volkswagen	Golf III	2693.57

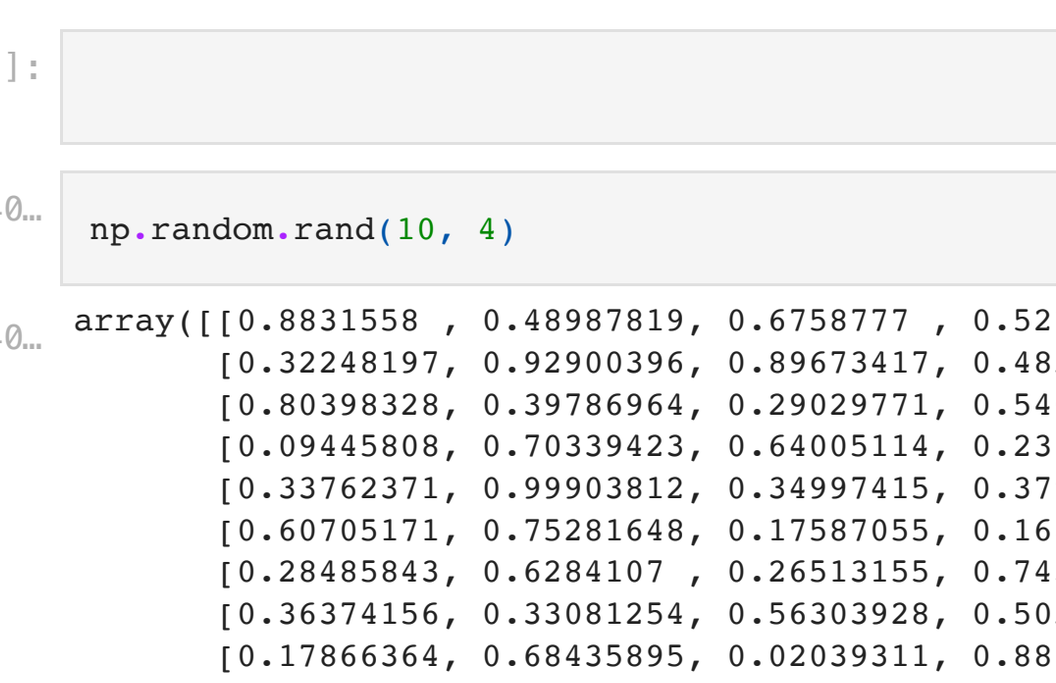
100 rows × 3 columns

In [135…
```python
import matplotlib.pyplot as plt
plt.close("all")
import numpy as np
```

In [124…
```python
cars_pd.head(5).plot(x="make", y="price");
```



In [127…
```python
cars_pd.head(5).plot.bar(x="make", y="price");
```



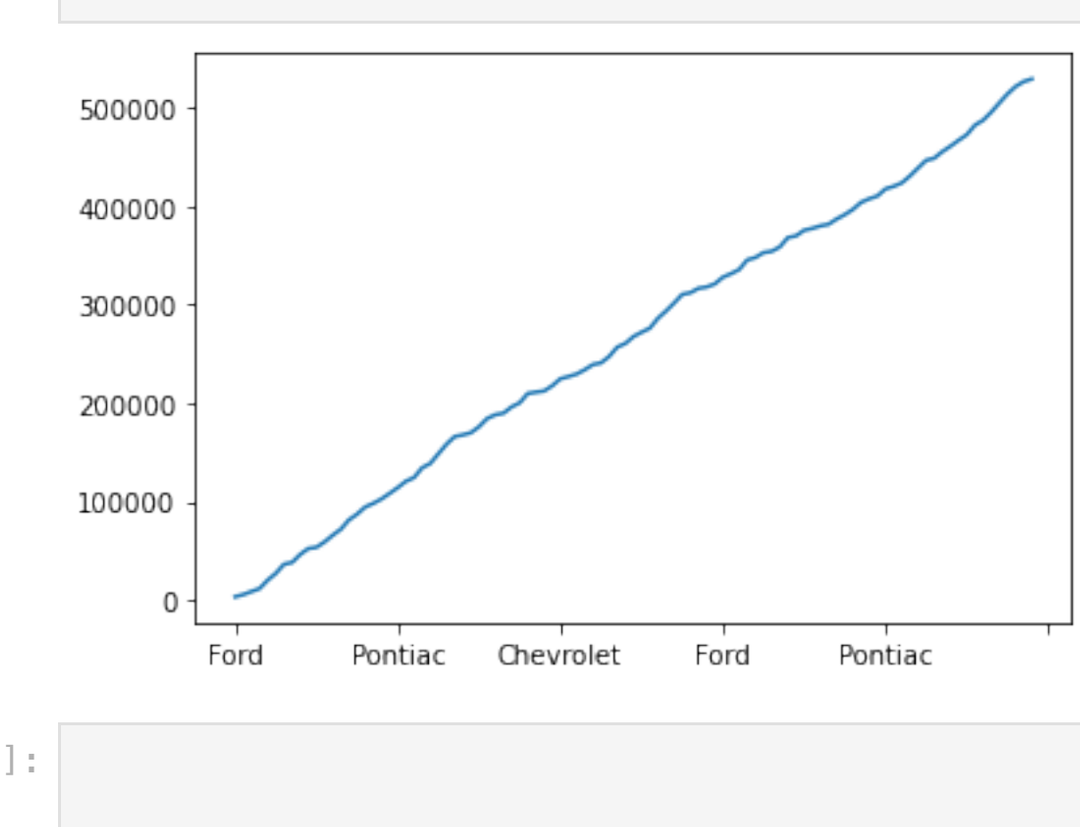
In [ ]:

In [140…
```python
np.random.rand(10, 4)
```

Out[140…
```
array([[0.8831558 , 0.48987819, 0.6758777 , 0.52712682],
       [0.32248197, 0.92900396, 0.89673417, 0.48203883],
       [0.80398328, 0.39786964, 0.29029771, 0.54053392],
       [0.09445808, 0.70339423, 0.64005114, 0.23127807],
       [0.33762371, 0.99903812, 0.34997415, 0.37901238],
       [0.60705171, 0.75281648, 0.17587055, 0.16834049],
       [0.28485843, 0.6284107 , 0.26513155, 0.74342377],
       [0.36374156, 0.33081254, 0.56303928, 0.50299025],
       [0.17866364, 0.68435895, 0.02039311, 0.88188285],
       [0.31020782, 0.7158217 , 0.44697597, 0.58754296]])
```

In [148…
```python
int_price = []
price.pop(0)
for p in price:
    int_price.append(float(p))
```

In [156…
```python
ts = pd.Series(int_price, make[2:])
ts = ts.cumsum()
ts.plot();
```



In [ ]: