Q7_2347116

September 15, 2023

```python
import numpy as np
```

```python
data_type=[("Emp_Id","i8"),("Last_Name","U16"),("First_Name","U18"),("Gender","U2"),("Title","

emp =np.array([
    (1000, "Torbati", "Yolanda", 'F', "Programmer"),
    (1001, "Kleinn", "Joel", 'M', "Programmer"),
    (1002, "Ginsburg", "Laura", 'F', "President"),
    (1003, "Cox", "Jennifer", 'F', "President"),
    (1005, "Ziada", "Mauri", 'M', "Product Designer"),
    (1006, "Keyser", "Cara", 'F', "Account Executive"),
    (1010, "Smith", "Roxie", 'M', "Programmer"),
    (1011, "Nelson", "Robert", 'M', "Programmer"),
    (1012, "Sachsen", "Lars", 'M', "Support Technician"),
    (1013, "Shannon", "Don", 'M', "Product Designer"),
], dtype=data_type)

# emp
```

Number of male employees

```python
print(f"There are {len(emp[emp['Gender'] == 'M'])} male employees.")
```

There are 6 male employees.

Employees whose last name starts with S

```python
mask = [name.startswith('S') for name in emp["Last_Name"]]
emp[mask]
```

```python
array([(1010, 'Smith', 'Roxie', 'M', 'Programmer'),
       (1012, 'Sachsen', 'Lars', 'M', 'Support Technician'),
       (1013, 'Shannon', 'Don', 'M', 'Product Designer')],
      dtype=[('Emp_Id', '<i8'), ('Last_Name', '<U16'), ('First_Name', '<U18'),
('Gender', '<U2'), ('Title', '<U32')])
```

Female employees sorted by descending order of last name

```python
female_emp = np.array(emp[emp['Gender'] == 'F'],dtype=data_type)
female = np.where(emp["Gender"] == 'F')[0]
```

```
sorted_f = female[np.argsort(emp["First_Name"][female])][::-1]
sorted_female_employees = emp[sorted_f]

print(sorted_female_employees)
```

```
[(1000, 'Torbati', 'Yolanda', 'F', 'Programmer')
 (1002, 'Ginsburg', 'Laura', 'F', 'President')
 (1003, 'Cox', 'Jennifer', 'F', 'President')
 (1006, 'Keyser', 'Cara', 'F', 'Account Executive')]
```

slicing

```
[ ]: subset = emp[2:9]
for row in subset:
    emp_id, last_name, gender = row["Emp_Id"], row["Last_Name"], row["Gender"]
    print(f"{emp_id}\t{last_name}\t\t{gender}")
```

```
1002    Ginsburg            F
1003    Cox         F
1005    Ziada       M
1006    Keyser      F
1010    Smith       M
1011    Nelson      M
1012    Sachsen     M
```