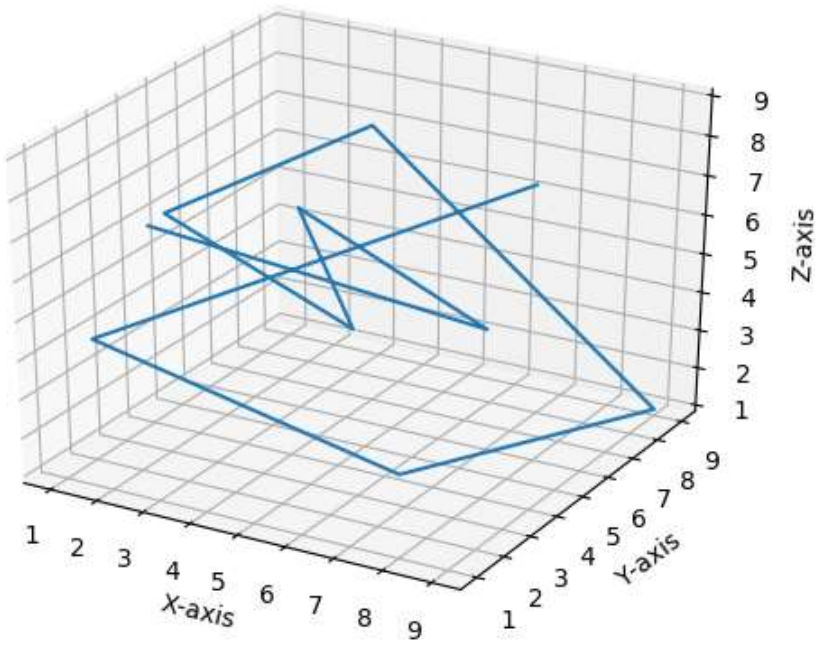
In [1]:

```
from mpl_toolkits.mplot3d import axes3d
import matplotlib.pyplot as plt
%matplotlib notebook

figure1 = plt.figure()
axis1 = figure1.add_subplot(projection='3d')

x =[1,7,6,3,2,4,9,8,1,9]
y =[4,6,1,8,3,7,9,1,2,4]
z =[6,4,9,2,7,8,1,3,4,9]

axis1.plot(x,y,z)

axis1.set_xlabel('X-axis')
axis1.set_ylabel('Y-axis')
axis1.set_zlabel('Z-axis')

plt.show()
```



In [2]:

```
import seaborn as sns

plt .rcParams["figure.figsize"]=[10,8]

tips_data = sns.load_dataset('tips')

tips_data.head()
```

Out[2]:

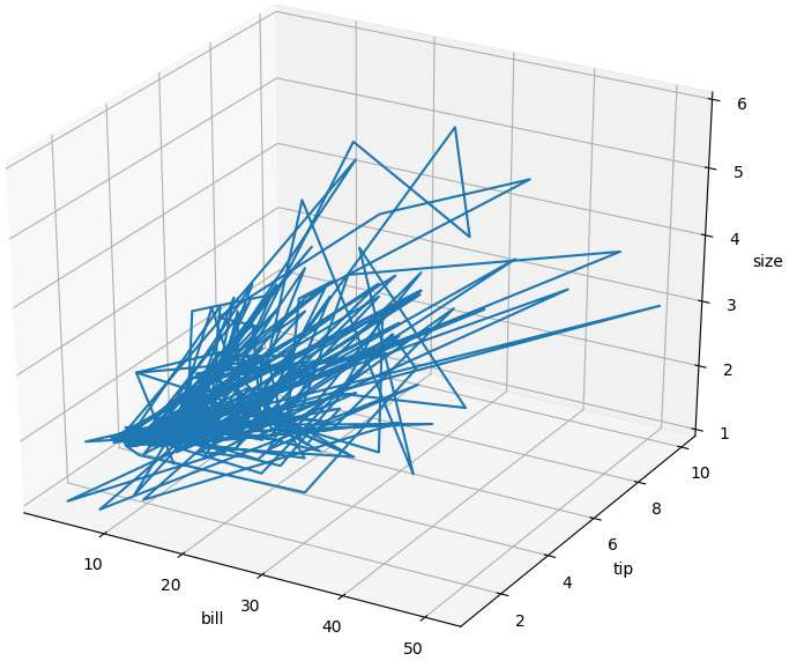
| | total_bill | tip | sex | smoker | day | time | size |
|---|---|---|---|---|---|---|---|
| **0** | 16.99 | 1.01 | Female | No | Sun | Dinner | 2 |
| **1** | 10.34 | 1.66 | Male | No | Sun | Dinner | 3 |
| **2** | 21.01 | 3.50 | Male | No | Sun | Dinner | 3 |
| **3** | 23.68 | 3.31 | Male | No | Sun | Dinner | 2 |
| **4** | 24.59 | 3.61 | Female | No | Sun | Dinner | 4 |

In [3]:

```
bill = tips_data['total_bill'].tolist()
tip = tips_data['tip'].tolist()
size = tips_data['size'].tolist()
```

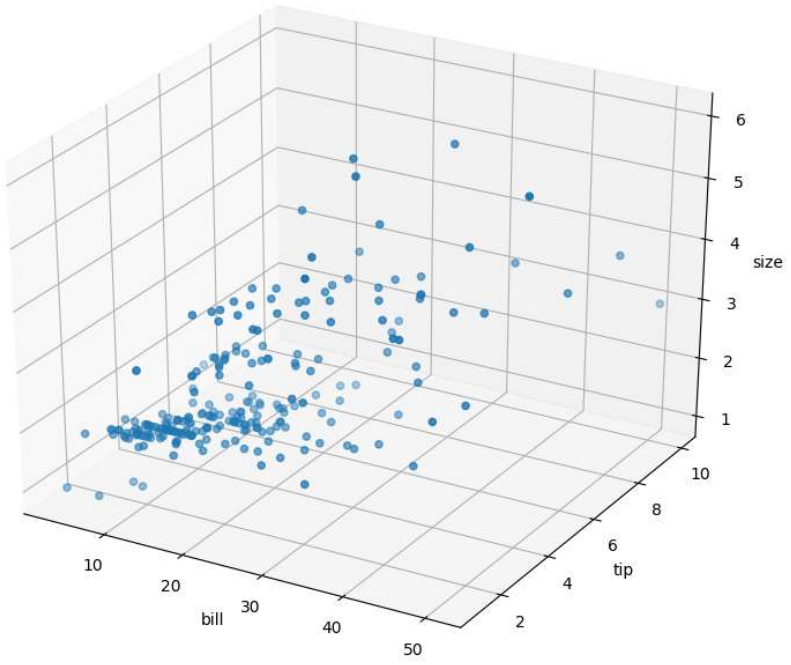
In [4]:

```
from mpl_toolkits.mplot3d import axes3d
import matplotlib.pyplot as plt
%matplotlib notebook


figure2 = plt.figure()
axis2 = figure2.add_subplot(projection='3d')

axis2.plot(bill, tip, size)

axis2.set_xlabel('bill')
axis2.set_ylabel('tip')
axis2.set_zlabel('size')

plt.show()
```



In [5]:

```
from mpl_toolkits.mplot3d import axes3d
import matplotlib.pyplot as plt
%matplotlib notebook


figure2 = plt.figure()
axis2 = figure2.add_subplot(projection='3d')

axis2.scatter(bill, tip, size)

axis2.set_xlabel('bill')
axis2.set_ylabel('tip')
axis2.set_zlabel('size')

plt.show()
```



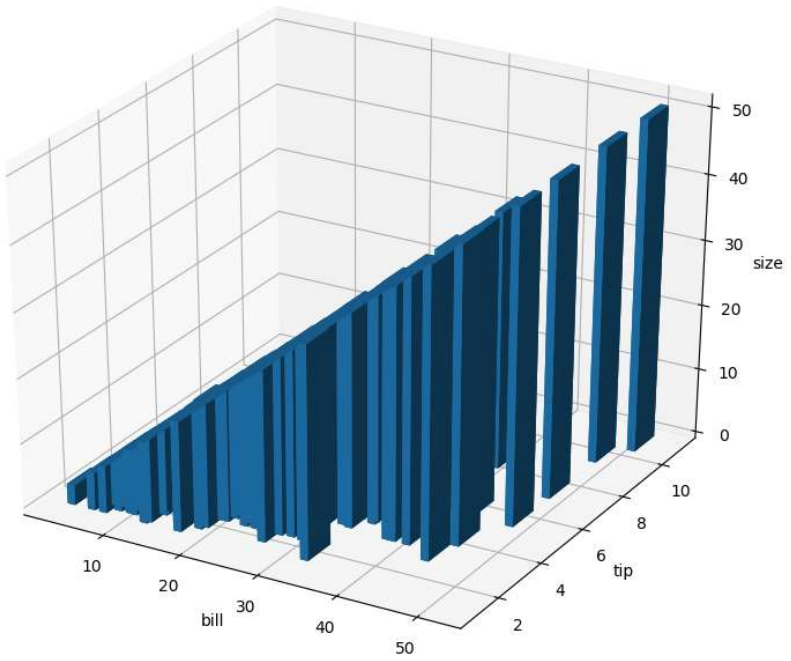
In [6]:

```
from mpl_toolkits.mplot3d import axes3d
import matplotlib.pyplot as plt
%matplotlib notebook

figure2 = plt.figure()
axis3 = figure2.add_subplot(projection='3d')

x3 = bill
y3 = tip
z3 = np.zeros(tips_data.shape[0])

dx = np.ones(tips_data.shape[0])
dy = np.ones(tips_data.shape[0])
dz = bill

axis3.bar3d(x3,y3,z3,dx,dy,dz)

axis3.set_xlabel('bill')
axis3.set_ylabel('tip')
axis3.set_zlabel('size')

plt.show()
```

```
---------------------------------------------------------------------------
-
NameError                                 Traceback (most recent call las
t)
<ipython-input-6-ec53317ca01d> in <module>
      8 x3 = bill
      9 y3 = tip
---> 10 z3 = np.zeros(tips_data.shape[0])
     11
     12 dx = np.ones(tips_data.shape[0])

NameError: name 'np' is not defined
```

In [7]:

```
from mpl_toolkits.mplot3d import axes3d
import matplotlib.pyplot as plt
import numpy as np
%matplotlib notebook

figure2 = plt.figure()
axis3 = figure2.add_subplot(projection='3d')

x3 = bill
y3 = tip
z3 = np.zeros(tips_data.shape[0])

dx = np.ones(tips_data.shape[0])
dy = np.ones(tips_data.shape[0])
dz = bill

axis3.bar3d(x3,y3,z3,dx,dy,dz)

axis3.set_xlabel('bill')
axis3.set_ylabel('tip')
axis3.set_zlabel('size')

plt.show()
```




In [ ]:

In [8]:

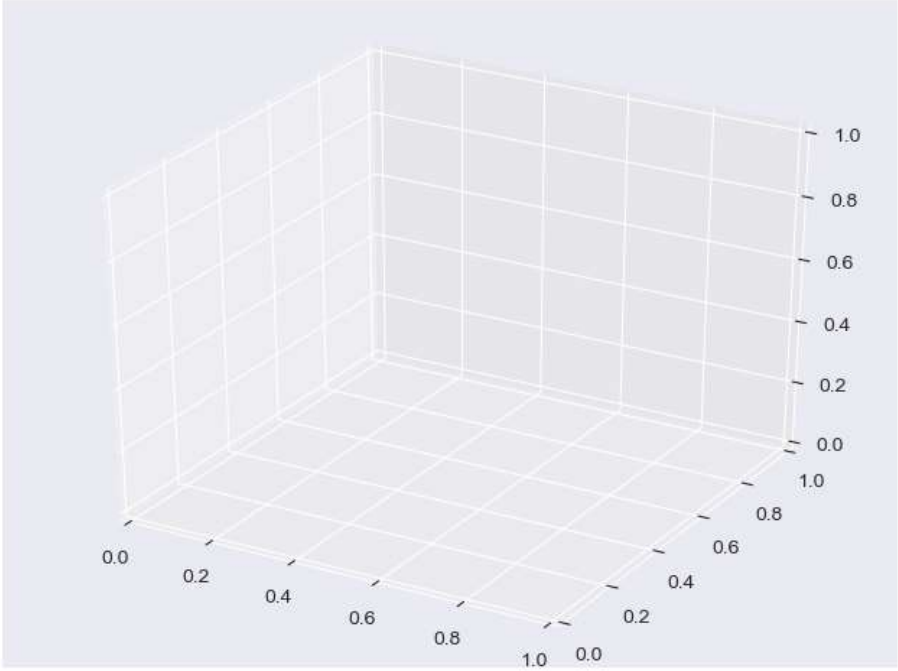
```
import matplotlib.pyplot as plt
import seaborn as sns
plt.rcParams["figure.figsize"] = [8,6]

sns.set_style("darkgrid")

titanic_data = sns.load_dataset('titanic')
titanic_data.head()
```

Out[8]:

| | survived | pclass | sex | age | sibsp | parch | fare | embarked | class | who | adult_ma |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 0 | 3 | male | 22.0 | 1 | 0 | 7.2500 | S | Third | man | Tru |
| **1** | 1 | 1 | female | 38.0 | 1 | 0 | 71.2833 | C | First | woman | Fals |
| **2** | 1 | 3 | female | 26.0 | 0 | 0 | 7.9250 | S | Third | woman | Fals |
| **3** | 1 | 1 | female | 35.0 | 1 | 0 | 53.1000 | S | First | woman | Fals |
| **4** | 0 | 3 | male | 35.0 | 0 | 0 | 8.0500 | S | Third | man | Tru |

In [9]:

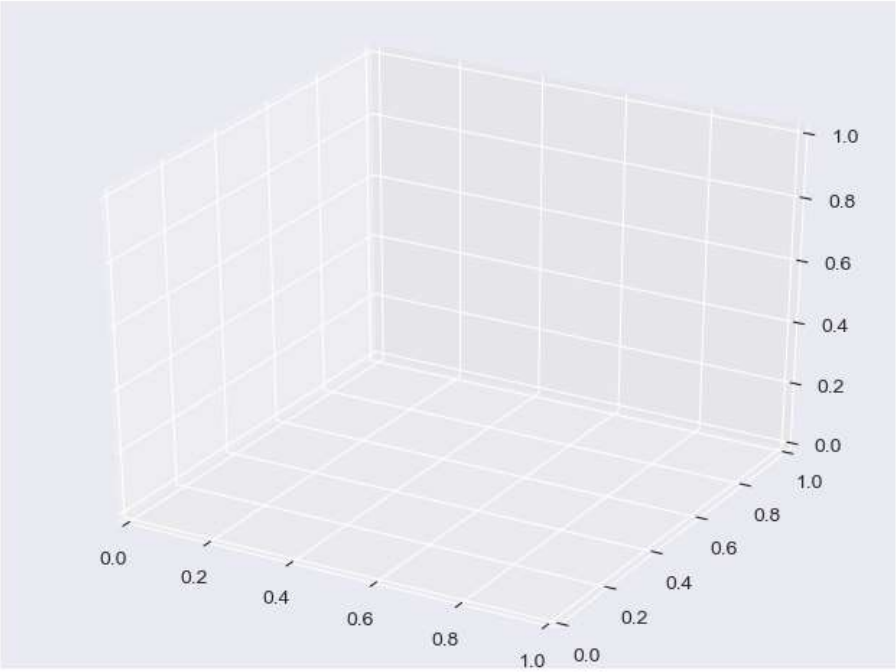
```
from mpl_toolkits.mplot3d import axes3d
import matplotlib.pyplot as plt
%matplotlib notebook


figure2 = plt.figure()
axis2 = figure2.add_subplot(projection='3d')

axis2.scatter(pclass, age, fare)

axis2.set_xlabel('pclass')
axis2.set_ylabel('age')
axis2.set_zlabel('fare')

plt.show()
```




```
---------------------------------------------------------------------------
-
NameError                                 Traceback (most recent call las
t)
<ipython-input-9-056aa65a697e> in <module>
      7 axis2 = figure2.add_subplot(projection='3d')
      8
----> 9 axis2.scatter(pclass, age, fare)
     10
     11 axis2.set_xlabel('pclass')

NameError: name 'pclass' is not defined
```

In [10]:

```
from mpl_toolkits.mplot3d import axes3d
import matplotlib.pyplot as plt
%matplotlib notebook


figure2 = plt.figure()
axis2 = figure2.add_subplot(projection='3d')

axis2.scatter (fare, age, pclass)

axis2.set_xlabel('fare')
axis2.set_ylabel('age')
axis2.set_zlabel('pclass')

plt.show()
```




```
---------------------------------------------------------------------------
-
NameError                                 Traceback (most recent call las
t)
<ipython-input-10-d874e117f8b9> in <module>
      7 axis2 = figure2.add_subplot(projection='3d')
      8
----> 9 axis2.scatter(fare, age, pclass)
     10
     11 axis2.set_xlabel('fare')

NameError: name 'fare' is not defined
```

In [11]:

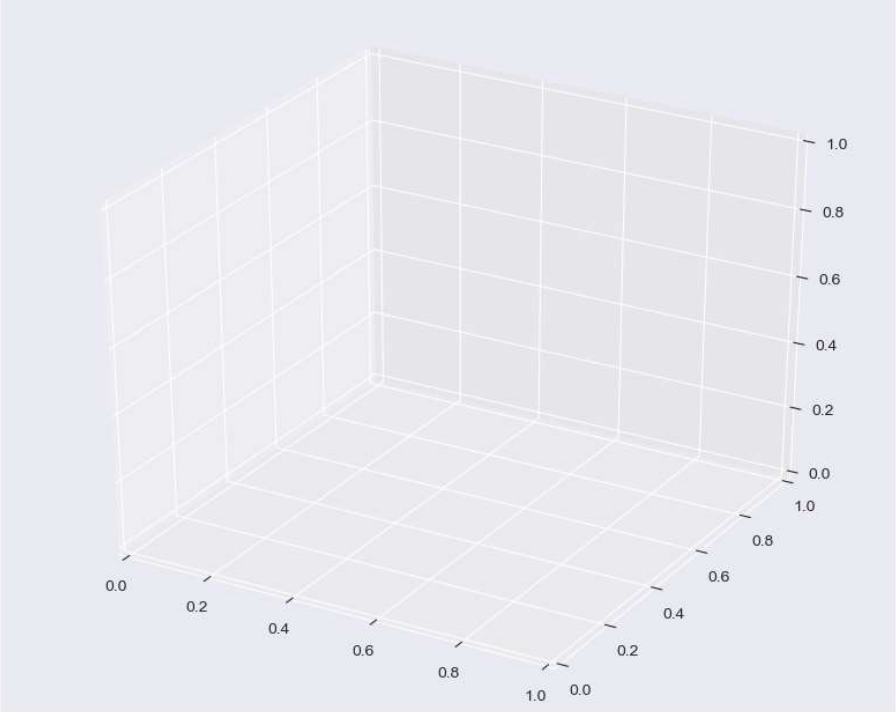
```
import matplotlib.pyplot as plt
import seaborn as sns

plt.rcParams["figure.figsize"] = [10,8]

titanic_data = sns.load_dataset('titanic')
titanic_data.head()
```

Out[11]:

| | survived | pclass | sex | age | sibsp | parch | fare | embarked | class | who | adult_ma |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 0 | 3 | male | 22.0 | 1 | 0 | 7.2500 | S | Third | man | Tru |
| **1** | 1 | 1 | female | 38.0 | 1 | 0 | 71.2833 | C | First | woman | Fals |
| **2** | 1 | 3 | female | 26.0 | 0 | 0 | 7.9250 | S | Third | woman | Fals |
| **3** | 1 | 1 | female | 35.0 | 1 | 0 | 53.1000 | S | First | woman | Fals |
| **4** | 0 | 3 | male | 35.0 | 0 | 0 | 8.0500 | S | Third | man | Tru |

In [12]:

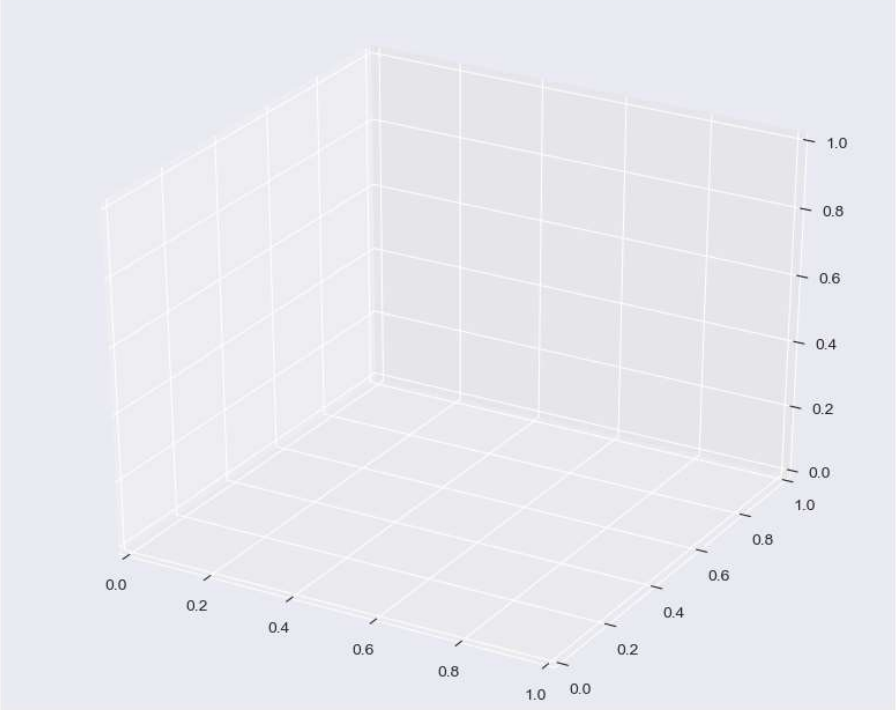
```
from mpl_toolkits.mplot3d import axes3d
import matplotlib.pyplot as plt
%matplotlib notebook


figure2 = plt.figure()
axis2 = figure2.add_subplot(projection='3d')

axis2.scatter (fare, age, pclass)

axis2.set_xlabel('fare')
axis2.set_ylabel('age')
axis2.set_zlabel('pclass')

plt.show()
```




```
---------------------------------------------------------------------------
-
NameError                                 Traceback (most recent call las
t)
<ipython-input-12-ed40e2755ee2> in <module>
      7 axis2 = figure2.add_subplot(projection='3d')
      8
----> 9 axis2.scatter (fare, age, pclass)
     10
     11 axis2.set_xlabel('fare')

NameError: name 'fare' is not defined
```

In [13]:

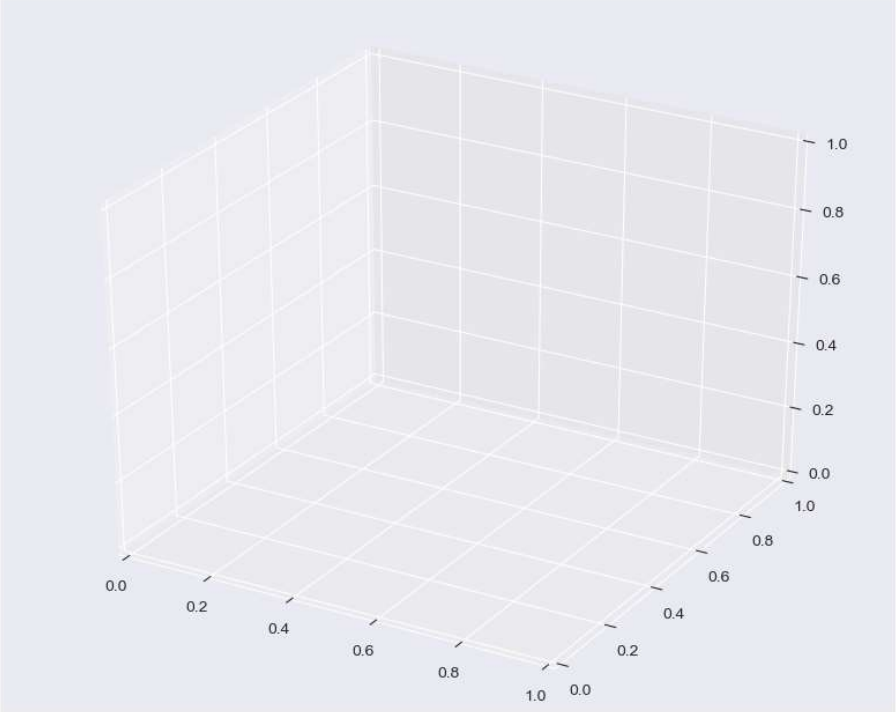
```
from mpl_toolkits.mplot3d import axes3d
import matplotlib.pyplot as plt
%matplotlib notebook


figure2 = plt.figure()
axis3 = figure2.add_subplot(projection='3d')

axis3.scatter (fare, age, pclass)

axis3.set_xlabel('fare')
axis3.set_ylabel('age')
axis3.set_zlabel('pclass')

plt.show()
```




```
---------------------------------------------------------------------------
-
NameError                                 Traceback (most recent call las
t)
<ipython-input-13-7917593e1fa1> in <module>
      7 axis3 = figure2.add_subplot(projection='3d')
      8
----> 9 axis3.scatter (fare, age, pclass)
     10
     11 axis3.set_xlabel('fare')

NameError: name 'fare' is not defined
```

In [14]:

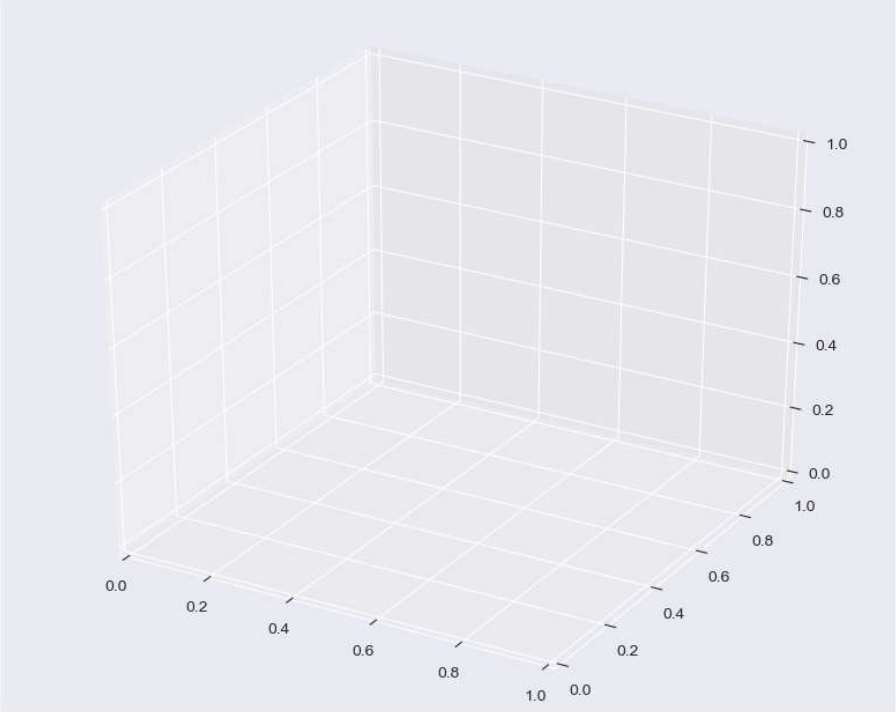
```
from mpl_toolkits.mplot3d import axes3d
import matplotlib.pyplot as plt
import numpy as np
%matplotlib notebook

figure2 = plt.figure()
axis3 = figure2.add_subplot(projection='3d')

x3 = age
y3 = fare
z3 = np.zeros(titanic_data.shape[0])

dx = np.ones(titanic_data.shape[0])
dy = np.ones(titanic_data.shape[0])
dz = pclass

axis3.bar3d(x3,y3,z3,dx,dy,dz)

axis3.set_xlabel('age')
axis3.set_ylabel('fare')
axis3.set_zlabel('pclass')

plt.show()
```




```
---------------------------------------------------------------------------
-
NameError                                 Traceback (most recent call las
t)
<ipython-input-14-a37a67fb8efb> in <module>
      7 axis3 = figure2.add_subplot(projection='3d')
      8
----> 9 x3 = age
     10 y3 = fare
     11 z3 = np.zeros(titanic_data.shape[0])

NameError: name 'age' is not defined
```

In [15]:

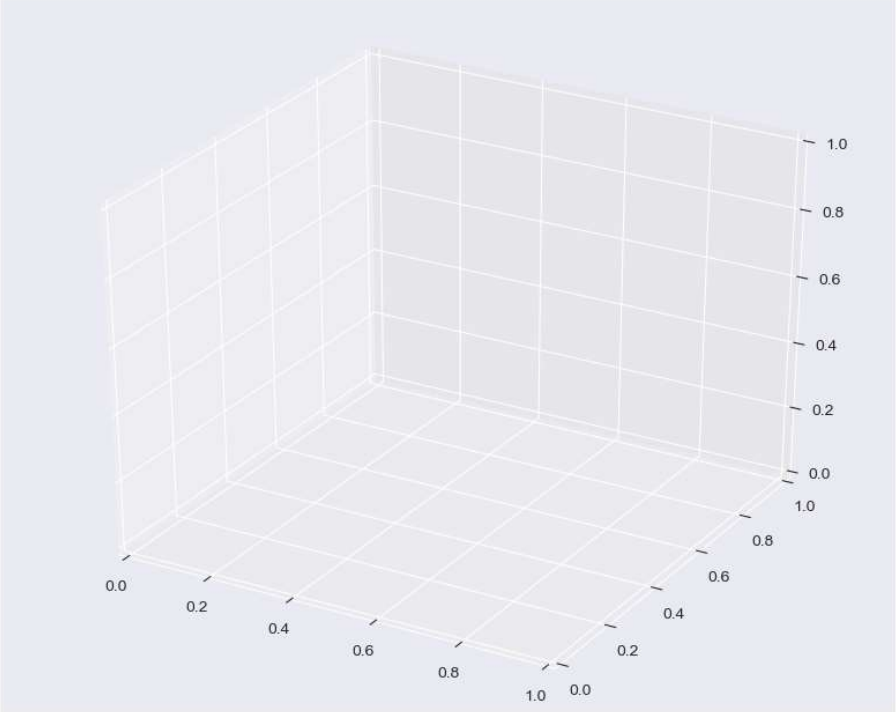
```
from mpl_toolkits.mplot3d import axes3d
import matplotlib.pyplot as plt
import numpy as np
%matplotlib notebook

figure3 = plt.figure()
axis3 = figure3.add_subplot(projection='3d')

x3 = age
y3 = fare
z3 = np.zeros(titanic_data.shape[0])

dx = np.ones(titanic_data.shape[0])
dy = np.ones(titanic_data.shape[0])
dz = pclass

axis3.bar3d(x3,y3,z3,dx,dy,dz)

axis3.set_xlabel('age')
axis3.set_ylabel('fare')
axis3.set_zlabel('pclass')

plt.show()
```




```
---------------------------------------------------------------------------
-
NameError                                 Traceback (most recent call las
t)
<ipython-input-15-60edaf6ecb8e> in <module>
      7 axis3 = figure3.add_subplot(projection='3d')
      8
----> 9 x3 = age
     10 y3 = fare
     11 z3 = np.zeros(titanic_data.shape[0])

NameError: name 'age' is not defined
```

In [17]:

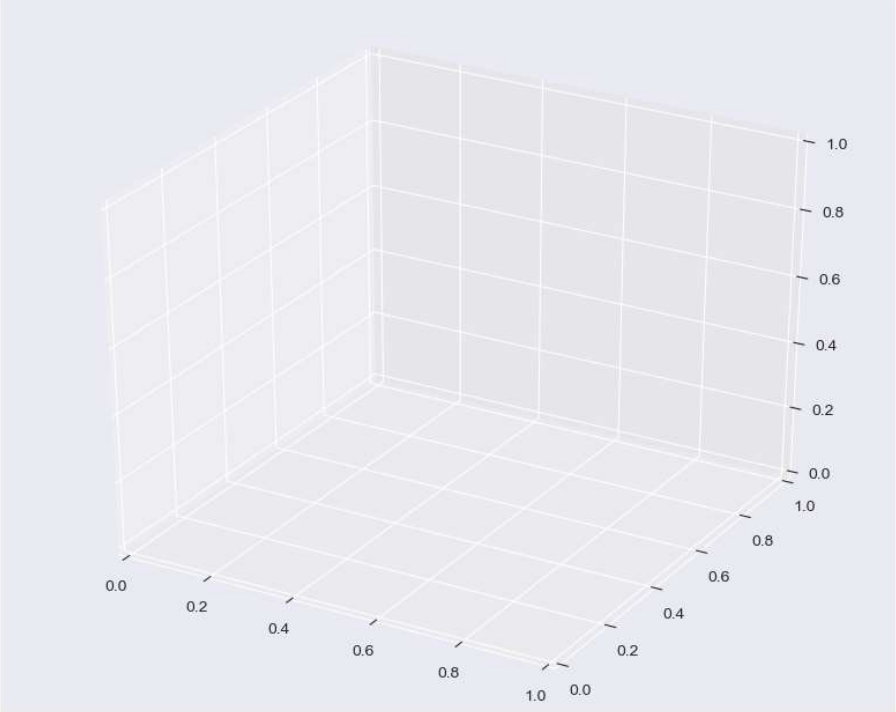
```
from mpl_toolkits.mplot3d import axes3d
import matplotlib.pyplot as plt
import numpy as np
%matplotlib notebook

figure3 = plt.figure()
axis3 = figure3.add_subplot(projection='3d')

x3 = age.reshape
y3 = fare.reshape
z3 = np.zeros(titanic_data.shape[0])

dx = np.ones(titanic_data.shape[0])
dy = np.ones(titanic_data.shape[0])
dz = pclass

axis3.bar3d(x3,y3,z3,dx,dy,dz)

axis3.set_xlabel('age')
axis3.set_ylabel('fare')
axis3.set_zlabel('pclass')
```




```
---------------------------------------------------------------------------
-
NameError                                 Traceback (most recent call las
t)
<ipython-input-17-277719beacd5> in <module>
      7 axis3 = figure3.add_subplot(projection='3d')
      8
----> 9 x3 = age.reshape
     10 y3 = fare.reshape
     11 z3 = np.zeros(titanic_data.shape[0])

NameError: name 'age' is not defined
```

In [18]:

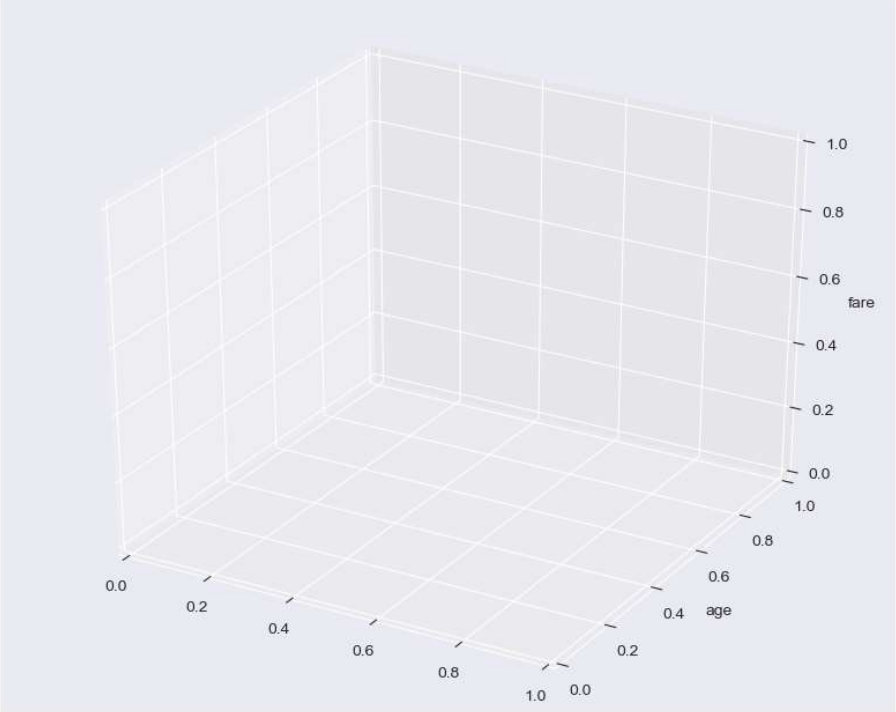
```
from mpl_toolkits.mplot3d import axes3d
import matplotlib.pyplot as plt
import numpy as np
%matplotlib notebook

figure3 = plt.figure()
axis3 = figure3.add_subplot(projection='3d')

x3 = age
y3 = fare
z3 = np.zeros(titanic_data.shape[0])

dx = np.ones(titanic_data.shape[0])
dy = np.ones(titanic_data.shape[0])
dz = pclass

axis3.bar3d(x3,y3,z3,dx,dy,dz)

axis3.set_xlabel('age')
axis3.set_ylabel('fare')
axis3.set_zlabel('pclass')

x = data[:,0].reshape(4,4)
y = data[:,1].reshape(4,4)
z = data[:,2].reshape(4,4)
fig = plt.figure()
ax = fig.gca(projection='3d')
ax.plot_surface(X=x,Y=y,Z=z)
plt.show()
```




```
---------------------------------------------------------------------------
-
NameError                                 Traceback (most recent call las
t)
<ipython-input-18-c1caca8c4f37> in <module>
      7 axis3 = figure3.add_subplot(projection='3d')
      8
----> 9 x3 = age
     10 y3 = fare
     11 z3 = np.zeros(titanic_data.shape[0])

NameError: name 'age' is not defined
```

In [19]:

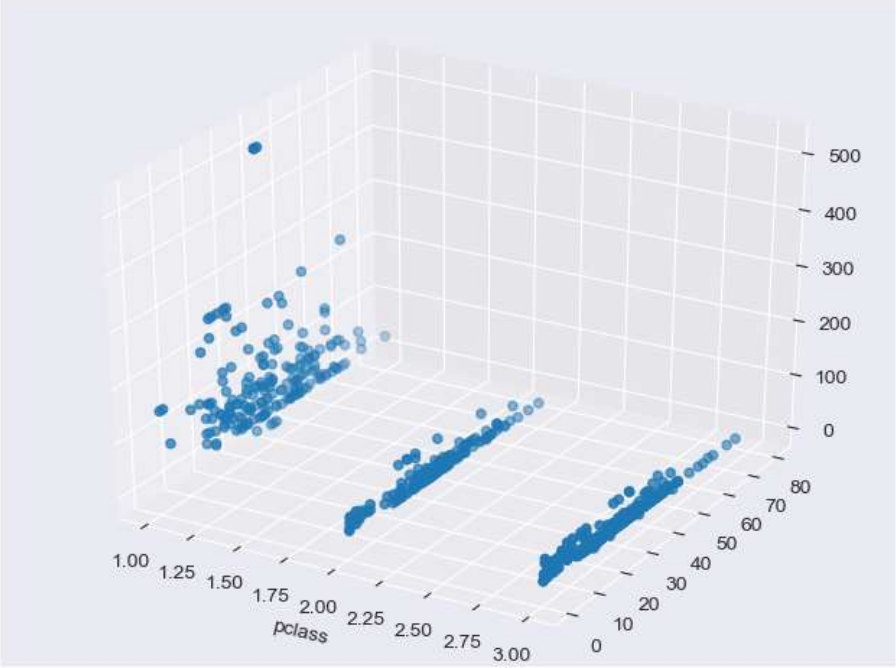
```
from mpl_toolkits.mplot3d import axes3d
import matplotlib.pyplot as plt
import numpy as np
%matplotlib notebook

figure3 = plt.figure()
axis3 = figure3.add_subplot(projection='3d')

x3 = age
y3 = fare
z3 = np.zeros(titanic_data.shape[0])

dx = np.ones(titanic_data.shape[0])
dy = np.ones(titanic_data.shape[0])
dz = pclass

axis3.bar3d(x3,y3,z3,dx,dy,dz)

axis3.set_xlabel('age')
axis3.set_ylabel('fare')
axis3.set_zlabel('pclass')

plt.show
```




```
---------------------------------------------------------------------------
-
NameError                                 Traceback (most recent call las
t)
<ipython-input-19-b63f9d0da930> in <module>
      7 axis3 = figure3.add_subplot(projection='3d')
      8
----> 9 x3 = age
     10 y3 = fare
     11 z3 = np.zeros(titanic_data.shape[0])

NameError: name 'age' is not defined
```

In [20]:

```
import matplotlib.pyplot as plt
import seaborn as sns
plt.rcParams["figure.figsize"] = [8,6]

sns.set_style("darkgrid")

titanic_data = sns.load_dataset('titanic')
pclass = titanic_data['pclass'].tolist()
age = titanic_data['age'].tolist()
fare = titanic_data['fare'].tolist()

figure4 =plt.figure()
axis4 = figure4.add_subplot(projection='3d')

axis4.scatter(pclass,age,fare)

axis4.set_xlabel('pclass')
axis3.set_ylabel('age')
axis3.set_zlabel('fare')

plt.show
```




Out[20]:

```
<function matplotlib.pyplot.show(*args, **kw)>
```

In [ ]: