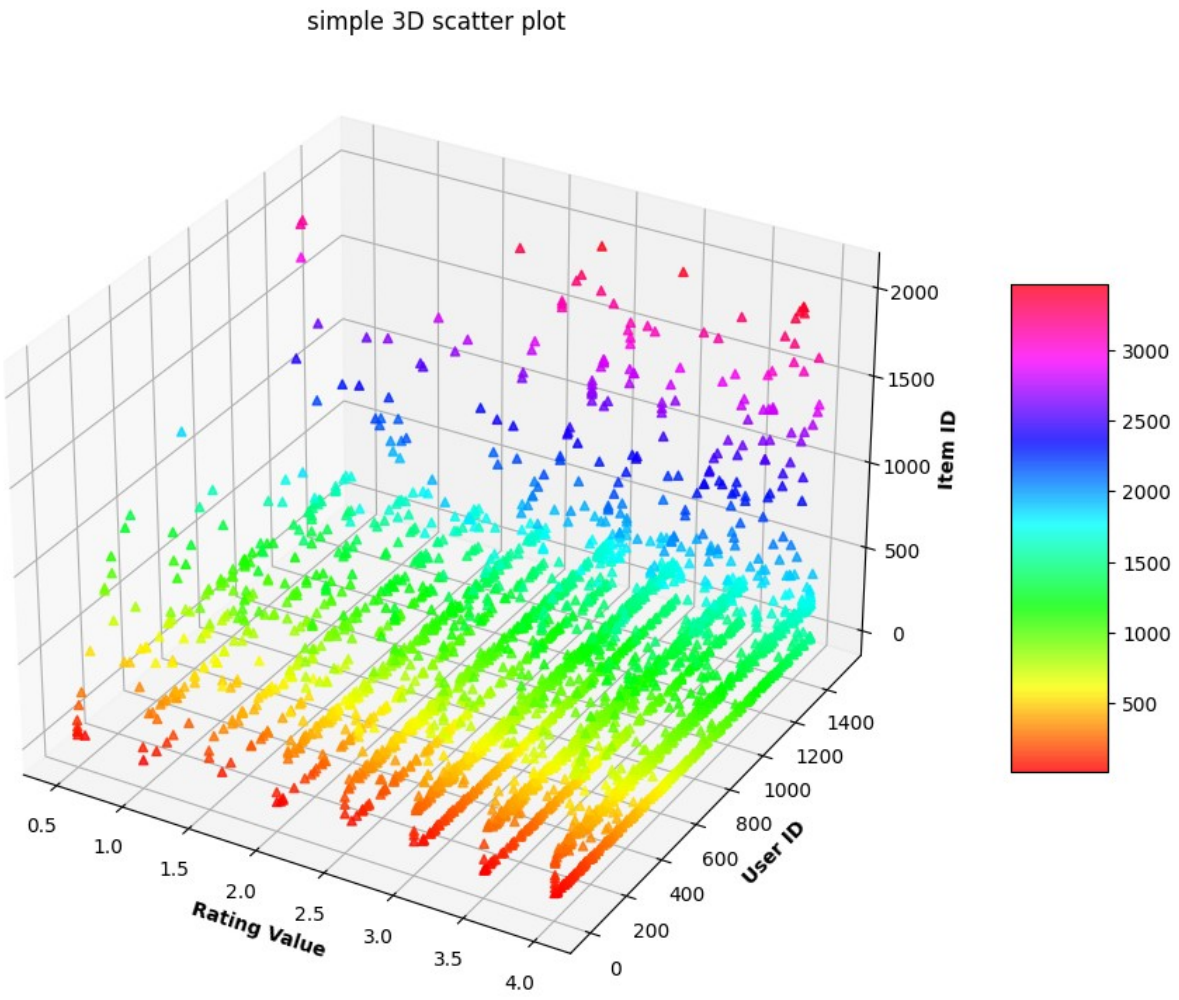
```
from mpl_toolkits import mplot3d
import numpy as np
import matplotlib.pyplot as plt

df = pd.read_csv('dataset/raiting.csv')

df.head()
```

	user-id	item-id	rating-value
0	1	1	2.0
1	1	2	4.0
2	1	3	3.5
3	1	4	3.0
4	1	5	4.0

```
df_percent = df.sample(frac=0.1)

user = df_percent['user-id']
item = df_percent['item-id']
rate = df_percent['rating-value']

fig = plt.figure(figsize = (16, 9))
ax = plt.axes(projection ="3d")

ax.grid(b = True, color ='grey',
    linestyle ='-.', linewidth = 0.3,
    alpha = 0.2)


# Creating color map
my_cmap = plt.get_cmap('hsv')

# Creating plot

sctt = ax.scatter3D(rate, user, item,
    alpha = 0.8,
    c = (user + item + rate),
    cmap = my_cmap, marker=m)



plt.title("simple 3D scatter plot")
ax.set_xlabel('Rating Value', fontweight ='bold')
ax.set_ylabel('User ID', fontweight ='bold')
ax.set_zlabel('Item ID', fontweight ='bold')
fig.colorbar(sctt, ax = ax, shrink = 0.5, aspect = 5)

# show plot
plt.show()
```

```
/tmp/ipykernel_15668/2182588567.py:4: MatplotlibDeprecationWarning:
The 'b' parameter of grid() has been renamed 'visible' since
```

```
Matplotlib 3.5; support for the old name will be dropped two minor
releases later.
  ax.grid(b = True, color ='grey',
```




```
fig, ax = plt.subplots()

rate_list = []
user_number = []
for i in rate:
    if i not in rate_list:
        rate_list.append(i)
        curr_df = df_percent.loc[df_percent['rating-value'] == i]
        user_number.append(curr_df.shape[0])

bar_colors = []
for i in user_number:
    if i > 550:
        bar_colors.append("#121972")
```

```
    if i > 250 and i <= 550:
        bar_colors.append("#222BA0")
    if i <= 250:
        bar_colors.append("#4D56CF")


ax.bar(rate_list, user_number, color=bar_colors)

ax.set_ylabel('Numer of Rates')
ax.set_title('Number of Rates given')
ax.legend(title='Numer of Rates')

plt.show()
```

```
No artists with labels found to put in legend.  Note that artists
whose label start with an underscore are ignored when legend() is
called with no argument.
```