In [15]:
```
import pandas as pd
import matplotlib.pyplot as plt

# Reading the CSV file
file_path = r"C:\Users\91778\Downloads\householdtask3.csv"
data = pd.read_csv(file_path)

# Strip any leading/trailing whitespace from the column names
data.columns = data.columns.str.strip()

# Printing the top 10 rows to understand its structure
display(data.head(10))
```

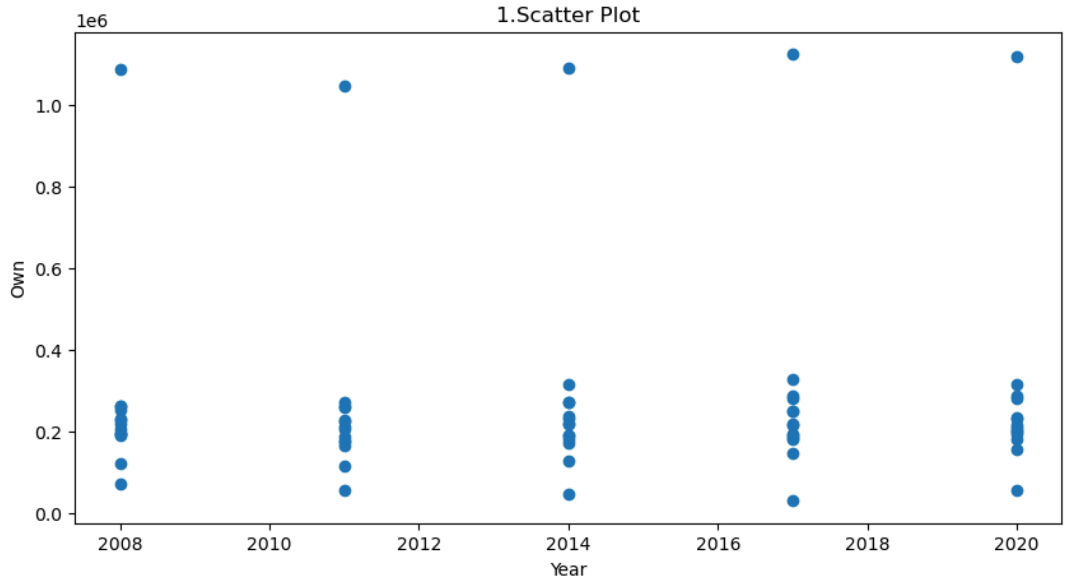
	year	tot_hhs	own	own_wm	own_prop	own_wm_prop	prop_hhs	age	size
0	2008	1560859	1087580	574406	69.7	36.8	100.0	35.9	2.7
1	2008	185965	71256	39405	38.3	21.2	11.9	29.9	2.6
2	2008	312376	191470	48424	61.3	15.5	20.0	40.0	2.3
3	2008	312333	196203	84171	62.8	26.9	20.0	34.7	2.8
4	2008	312240	217657	141318	69.7	45.3	20.0	31.5	3.0
5	2008	312336	229014	147658	73.3	47.3	20.0	35.3	2.6
6	2008	311574	253235	152835	81.3	49.1	20.0	39.3	2.5
7	2008	312761	194358	49448	62.1	15.8	20.0	38.7	2.5
8	2008	311973	206342	86390	66.1	27.7	20.0	36.1	2.7
9	2008	311840	194361	108065	62.3	34.7	20.0	33.0	2.8

In [16]:
```
# Print the column names to ensure they are correct
print(data.columns)
```

```
Index(['year', 'tot_hhs', 'own', 'own_wm', 'own_prop', 'own_wm_prop',
       'prop_hhs', 'age', 'size', 'income', 'expenditure', 'eqv_incom
e',
       'eqv_exp'],
      dtype='object')
```

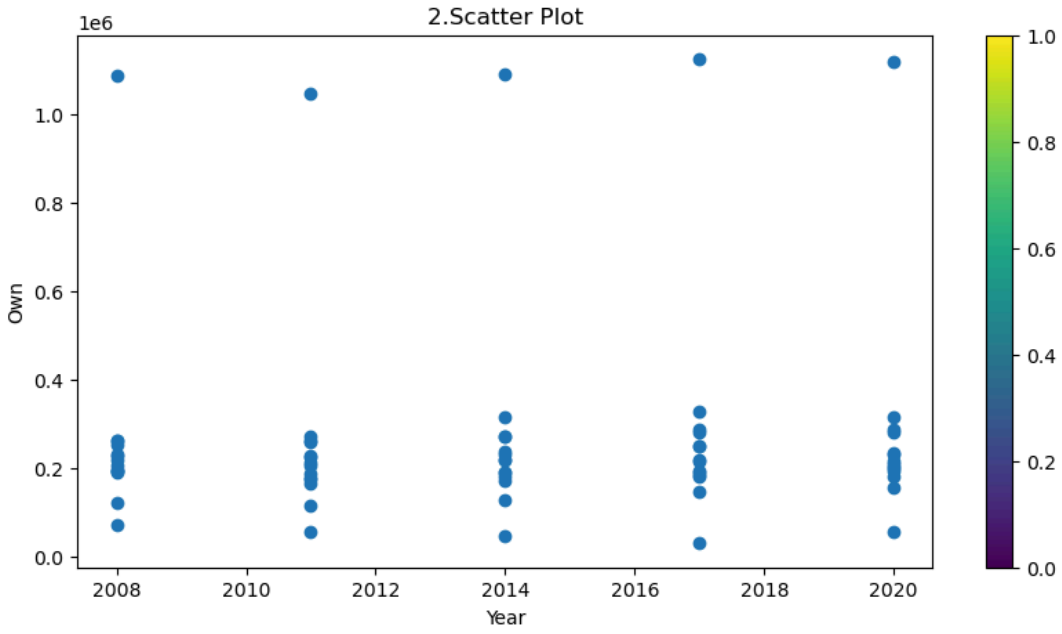
In [17]:

```
# Scatter Plot
plt.figure(figsize=(10, 5))
plt.scatter(data['year'], data['own'])

# Adding Title to the Plot
plt.title("1.Scatter Plot")

# Setting the X and Y labels
plt.xlabel('Year')
plt.ylabel('Own')

# Display the plot
plt.show()
```

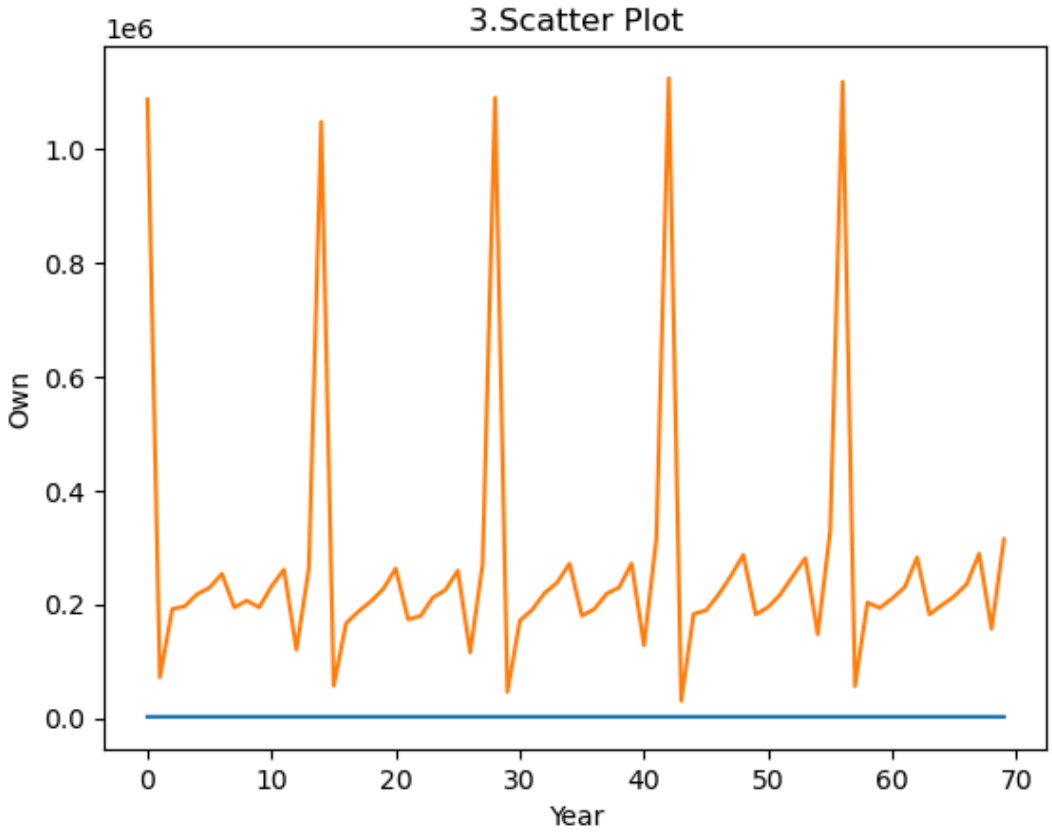


In [18]:

```
# Scatter Plot
plt.figure(figsize=(10, 5))
plt.scatter(data['year'], data['own'])

# Adding Title to the Plot
plt.title("2.Scatter Plot")

# Setting the X and Y labels
plt.xlabel('Year')
plt.ylabel('Own')

# Display the plot
plt.colorbar ()
plt.show()
```

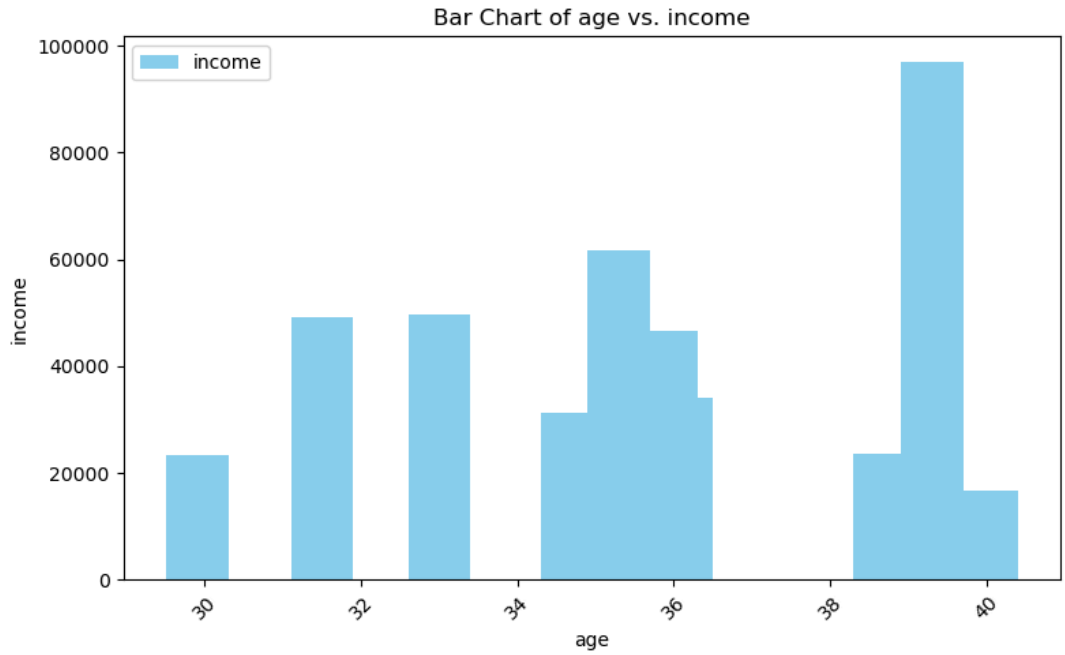


In [19]:
```
# Scatter Plot
plt.plot (data['year'])
plt.plot (data['own'])
# Adding Title to the Plot
plt.title("3.Scatter Plot")

# Setting the X and Y labels
plt.xlabel('Year')
plt.ylabel('Own')

# Display the plot
plt.show()
```

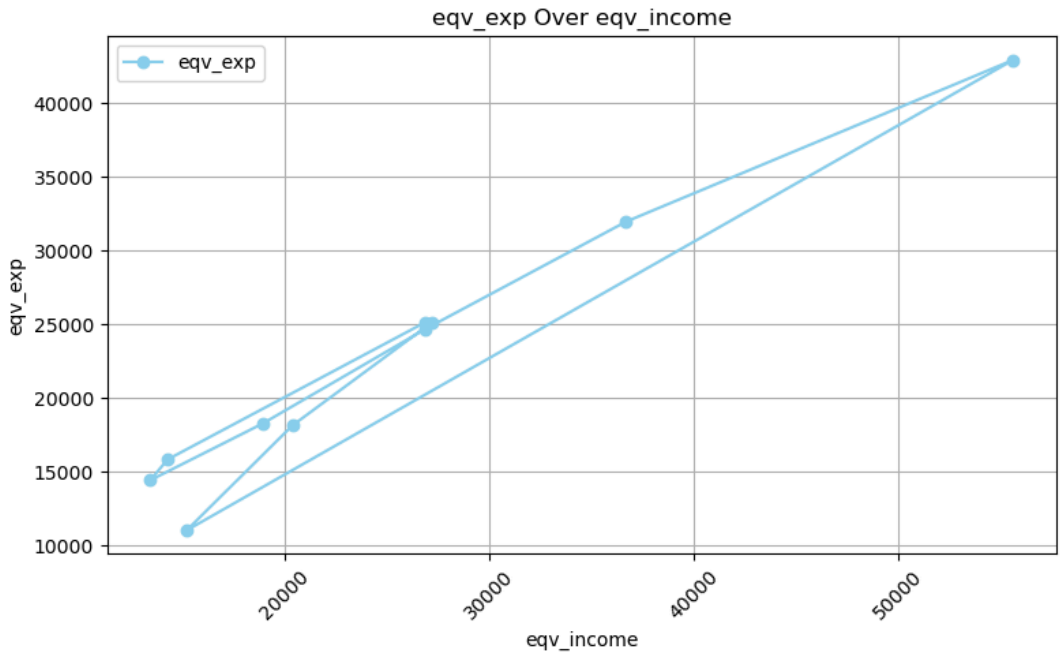


In [20]:

```
# Reduce the figure size to a reasonable value
plt.figure(figsize=(8, 5))
dt=data.head(10)
# Plotting with corrected column name
plt.bar(dt['age'], dt['income'], color='skyblue', label='income')

# bargraph plot
# Add labels and title
plt.xlabel('age')
plt.ylabel('income')
plt.title('Bar Chart of age vs. income')

# Add legend
plt.legend()

# Rotate x-axis labels if necessary
plt.xticks(rotation=45)

# Adjust layout to prevent clipping of labels
plt.tight_layout()

# Show plot
plt.show()
```



In [21]:
```
#line chart plot
plt.figure(figsize=(8, 5))
plt.plot(dt['eqv_income'], dt['eqv_exp'], marker='o', color='skyblue',

# Add labels and title
plt.title('eqv_exp Over eqv_income')
plt.xlabel('eqv_income')
plt.ylabel('eqv_exp')

# Add legend
plt.legend()

# Add gridlines
plt.grid(True)

# Rotate x-axis labels for better readability
plt.xticks(rotation=45)

# Adjust layout
plt.tight_layout()

# Show plot
plt.show()
```



In [ ]:

In [ ]: