1. Write a Pandas program to create a Pivot table and find the maximum and minimum sale value of the items.(refer sales_data table)

PROGRAM:

```
import pandas as pd


# Assuming you have a DataFrame named 'sales_data'

# with the provided columns and data


# Sample data for illustration purposes

data = {

    'OrderDate': ['1-6-18', '1-23-18', '2-9-18', '2-26-18', '3-15-18', '4-1-18', '4-18-18', '5-5-18', '5-22-18', '6-8-18', '6-25-18', '7-12-18', '7-29-18', '8-15-18', '9-1-18', '9-18-18', '10-5-18', '10-22-18'],

    'Region': ['East', 'Central', 'Central', 'Central', 'West', 'East', 'Central', 'Central', 'West', 'East', 'Central', 'East', 'East', 'East', 'Central', 'East', 'Central', 'East'],

    'Manager': ['Martha', 'Hermann', 'Hermann', 'Timothy', 'Timothy', 'Martha', 'Martha', 'Hermann', 'Douglas', 'Martha', 'Hermann', 'Martha', 'Douglas', 'Martha', 'Central', 'Martha', 'Hermann', 'Martha'],

    'SalesMan': ['Alexander', 'Shelli', 'Luis', 'David', 'Stephen', 'Alexander', 'Steven', 'Luis', 'Michael', 'Alexander', 'Sigal', 'Diana', 'Karen', 'Alexander', 'John', 'Alexander', 'Sigal', 'Alexander'],

    'Item': ['Television', 'Home Theater', 'Television', 'Cell Phone', 'Television', 'Home Theater', 'Television', 'Television', 'Television', 'Home Theater', 'Television', 'Home Theater', 'Home Theater', 'Television', 'Desk', 'Video Games', 'Home Theater', 'Cell Phone'],

    'Units': [95, 50, 36, 27, 56, 60, 75, 90, 32, 60, 90, 29, 81, 35, 2, 16, 28, 64],

    'Unit_price': [1198.00, 500.00, 1198.00, 225.00, 1198.00, 500.00, 1198.00, 1198.00, 1198.00, 500.00, 1198.00, 500.00, 500.00, 1198.00, 125.00, 58.50, 500.00, 225.00],

    'Sale_amt': ['1,13,810.00', '25,000.00', '43,128.00', '6,075.00', '67,088.00', '30,000.00', '89,850.00', '1,07,820.00', '38,336.00', '30,000.00', '1,07,820.00', '14,500.00', '40,500.00', '41,930.00', '250.00', '936.00', '14,000.00', '14,400.00']

}
```

```
sales_data = pd.DataFrame(data)


# Clean up the 'Sale_amt' column by removing commas and converting to float
sales_data['Sale_amt'] = sales_data['Sale_amt'].replace(',', '', regex=True).astype(float)


# Create a Pivot table
pivot_table = pd.pivot_table(sales_data, values='Sale_amt', index='Item', aggfunc=['min', 'max'])


# Display the Pivot table
print("Pivot Table:")
print(pivot_table)


# Find the maximum and minimum sale values
max_sale_value = sales_data['Sale_amt'].max()
min_sale_value = sales_data['Sale_amt'].min()


print("\nMaximum Sale Value:", max_sale_value)
print("Minimum Sale Value:", min_sale_value)
```

OUTPUT:

```
Pivot Table:
                 min        max
             Sale_amt   Sale_amt
Item
Cell Phone     6075.0    14400.0
Desk            250.0      250.0
Home Theater  14000.0    40500.0
Television    38336.0   113810.0
Video Games     936.0      936.0

Maximum Sale Value: 113810.0
Minimum Sale Value: 250.0
```