1. Write a Pandas program to create a Pivot table and find the total sale amount region wise, manager wise, sales man wise. .(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 for total sale amount region-wise, manager-wise, and salesperson-wise
pivot_table_region_manager_salesman = pd.pivot_table(sales_data, values='Sale_amt', index=['Region', 'Manager', 'SalesMan'], aggfunc='sum')


# Display the Pivot table for total sale amount region-wise, manager-wise, and salesperson-wise
print("Total Sale Amount:")
print(pivot_table_region_manager_salesman)
```

OUTPUT:

```
Total Sale Amount:
                          Sale_amt
Region  Manager SalesMan
Central Central John         250.0
        Hermann Luis       150948.0
                Shelli      25000.0
                Sigal      121820.0
        Martha  Steven       89850.0
        Timothy David         6075.0
East    Douglas Karen        40500.0
        Martha  Alexander  231076.0
                Diana        14500.0
West    Douglas Michael      38336.0
        Timothy Stephen      67088.0
|
```