Chapter 9 – Extra Practice

Extra Practice

Extra practice is for those who would like to do some extra practice projects to further hone their skills learned in each assignment. There are no additional points to be gained by completing these projects.

Monthly Payment Calculator

Create a program that calculates monthly payments on a loan.

```
Monthly Payment Calculator

DATA ENTRY
Loan amount:           500000
Yearly interest rate: 5.6
Years:                 30

FORMATTED RESULTS
Loan amount:                $500,000.00
Yearly interest rate:              5.6%
Number of years:                     30
Monthly payment:             $2,870.39

Continue? (y/n): y

DATA ENTRY
Loan amount:           500000
Yearly interest rate: 4.3
Years:                 30

FORMATTED RESULTS
Loan amount:                $500,000.00
Yearly interest rate:              4.3%
Number of years:                     30
Monthly payment:             $2,474.36

Continue? (y/n): n

Bye!
```

Specifications

- The interest rate should only have 1 decimal place for both the calculation and the formatted results.
- The formula for calculating monthly payment is:

```
monthly_payment = loan_amount * monthly_interest_rate /
                  (1 - 1 / (1 + monthly_interest_rate) ** months)
```

- Assume that the user will enter valid data.

Sales Report

Create a program that displays a report of sales by quarter for a company with four sales regions (Region 1, Region 2, Region 3, Region 4)..

```
Sales Report

Region             Q1          Q2          Q3          Q4
1           1,540.00    2,010.00    2,450.00    1,845.00
2           1,130.00    1,168.00    1,847.00    1,491.00
3           1,580.00    2,305.00    2,710.00    1,284.00
4           1,105.00    4,102.00    2,391.00    1,576.00

Sales by region:
Region 1: 7,845.00
Region 2: 5,636.00
Region 3: 7,879.00
Region 4: 9,174.00

Sales by quarter:
Q1: 5,355.00
Q2: 9,585.00
Q3: 9,398.00
Q4: 6,196.00

Total annual sales, all regions: $30,534.00
```

Specifications

- The quarterly sales numbers for each region should be hard-coded at the beginning of the program as a list of lists like this:

```
sales = [[1540.0, 2010.0, 2450.0, 1845.0],    # Region 1
         [1130.0, 1168.0, 1847.0, 1491.0],    # Region 2
         [1580.0, 2305.0, 2710.0, 1284.0],    # Region 3
         [1105.0, 4102.0, 2391.0, 1576.0]]    # Region 4
```