**Projects for Chapter 09**

## Project 9-1: Interest Calculator

Create a program that calculates the interest on a loan.

## Console

Interest Calculator

Enter loan amount: 520000

Enter interest rate: 5.375

Loan amount: $520,000.00

Interest rate: 5.375%

Interest amount: $27,950.00

Continue? (y/n): y

Enter loan amount: 4944.5

Enter interest rate: 1.3

Loan amount: $4,944.50

Interest rate: 1.300%

Interest amount: $64.28

Continue? (y/n): n

Bye!

## Specifications

* Use the Decimal class to make sure that all calculations are accurate. It should round the interest that’s calculated to two decimal places, rounding up if the third decimal place is five or greater.
* The interest rate that’s displayed can have up to 3 decimal places.
* Assume that the user will enter valid decimal values for the loan amount and interest rate.

## 

# Project 9-2: 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, and Region 4).

## Console

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

## 

# Project 9-3: Aircraft Fuel Calculator

Create a program that calculates the amount of time and fuel for a 1980 Cessna 172N to fly a specified distance.

## Console

Aircraft Fuel Calculator

Distance in nautical miles: 180

Flight time: 1 hour(s) and 30 minute(s)

Required fuel: 16.8 gallons

Continue? (y/n): y

Distance in nautical miles: 121

Flight time: 1 hour(s) and 0 minute(s)

Required fuel: 12.7 gallons

Continue? (y/n): n

Bye!

## Specifications

* Assume that a 1980 Cessna 172N can fly 120 nautical miles (knots) per hour.
* Assume that a 1980 Cessna 172N burns 8.4 gallons of gas per hour.
* For safety, add a half hour to the flight time when calculating the amount of required fuel.
* Round the amount of required fuel to 1 decimal place. For safety, always round up, never down.
* Assume that the user will enter valid data.