

Chapter 4 Assignment

This assignment consists of a series of five problems, each worth 20 points, that can be solved by writing a computer program. For each problem, design an algorithm using a series of comments and then implement the program using the Ruby language. Use RubyMine to create a project named `Asg4` and, for each problem, add a file to the project named `Asg4Ex $n$ .rb`, where n is the problem number. For example, the filename of the first problem should be `Asg4Ex1.rb`. Within each file, add a comment block at the top that contains the program's name, your name, date, the course title, your instructor's name, the assignment number, the problem number, and a brief description of the program's purpose.

Problem #1

Serendipity Booksellers needs a program to determine the cost to ship a package based on its weight. Using the rates shown in the table to the right, write a program to ask the user for the weight of a package and display the shipping cost to the user.

If the user enters a value of zero or less for the package weight, inform the user that the weight is invalid and do not show a cost.

Weight	Per Pound
< 2	\$1.10
2 to 6	\$2.20
6+ to 10	\$3.70
10+	\$3.80

Problem #2

At Serendipity Booksellers, some books can be purchased in bulk at a discount as determined by the table below. Write a program that asks the user how many books to purchase. If the user

Quantity	Discount
10 – 19	20%
20 – 49	30%
50 – 99	40%
100 +	50%

provides a value less than 10, no discounts apply. Inform the user and end. If the user enters a value of 0 or less, have the program inform him that the value is invalid and end. Otherwise, have the program ask for the price of a single book. Then, using the table above, have the program display the discount percentage. Have the program calculate and display the cost if no discount were applied, the actual amount of money saved, and the cost after applying the discount.

Problem #3

Many companies pay time-and-a-half for employees who work more than forty hours in a given week. Write a function that asks the user to input the number of hours worked and the hourly rate, and then calculates and displays the total wages for the week.

Problem #4

The City of Jerkwater has a policy for drivers cited for speeding within city limits. Violators are charged \$50 plus \$5 additional for every mile over the speed limit. If a violator exceeds 90 mph, an additional \$200 is imposed upon the violator. Write a program that asks for the violator's speed and the speed limit. The program should then display whether a speeding ticket should be issued and, if so, the amount of money the violator must pay the city.

Problem #5

Summerdale Condominiums offers properties with various amenities and different costs. The sales office needs an program to determine the price of a condo depending on the type of view and parking desired. A condo with a **park** view has a base price of \$150,000. For a **golf course** view, the price jumps to \$170,000. For a **lake** view, you have to shell out \$210,000. Parking is free unless the buyer wants an awning, which adds \$3,000 to the cost; or an enclosed garage, which increases the amount by \$6,000.

Write a program that asks the user for the type of view they prefer. Then, ask the user if they want to park in a lot, in a lot with an awning, or an enclosed garage. Based on the user's choices, calculate the cost for a condo that meets those conditions. Display a summary to the user that shows the choices made along with the total cost of the condo based on those choices.

Submitting Your Work

Open Windows Explorer and find the project folder that contains your programs. Compress the entire folder into a single zip file. Attach the file to your assignment when submitting it.