# **R Evaluation Exercises**

For each of the following tasks, write a piece of R code that matches the functionality based on the assumed inputs. Please provide your source code and a set of example code that runs any functions or scripts you provide. You are encouraged to document you're code to explain logic flows and assumptions made. You are free to use any of the resources provided by the R community.

1. Create a function that takes in a vector of numbers **V.Size** and a single number **N** as inputs and outputs a list object of size **N** where each entry is a vector that contains a elements of **V.Size** such that the largest element in **V.Size** is in the vector of the first list item, the second largest element in **V.Size** is in the vector of the second list item, etc. The **(N+1**) ordered value of **V.Size** should be in the first vector of the list, the **(N+2)** ordered value of **V.Size** should be in the second vector of the list as so on.
2. Given a vector of integers, **V.Ints**, of size **N**, write a function that looks for any duplicate occurrences of the set of integers and returns a vector of those unique integers with at least 2 occurrences. The output should return both the unique values and the number of occurrences in a data frame.
3. Given a vector of dates, **V.dates**, write a function that determines the time, in days, from present day for each element. Next determine the quarter, as defined by 91 day segments, from present day in reverse chronological order. Define quarter '0' to be the time between present day and (present day - 91), quarter '1' to be (present day - 91) to (present day - 182), etc. Lastly, return a data frame that contains the original date, the duration from present day, and the quarter to which the date belongs. Keep in mind that dates may be before or after present day. For example, assuming present day is '10/27/2010' and an input date of '6/20/2009', the function should return that the input date is 494 days from present day and belongs in quarter 5.
4. Given a vector of text strings, **V.text**, write a function that extracts likely dollar amounts and dates from each string and returns them as separate vector components of a list of the same length as **V.text**. Amounts and dates should be returned as *text strings* with the exact same format as the input. For example, if one of the input strings is "Listed on 1/05/2009 for 180000 and sold for $150,250 on 3/1/2009", the output for that element should be a list containing two vectors, one for amounts and one for dates. The amounts should be "180000" and "$150,250" and the dates should be "1/05/2009" and "3/1/2009".