Department of Computer Science

420-201-VA Programming 2

Recursion - Exercises

1. Write a method that uses recursion to raise a number to a power. The method should accept two arguments: the number to be raised and the exponent. Assume that the exponent is a nonnegative integer. Demonstrate the method in a program.

2. Write a method that accepts an integer argument and returns the sum of all the integers from 1 up to the number passed as an argument. For example, if 50 is passed as an argument, the method will return the sum of 1, 2, 3, 4, . . . 50. Use recursion to calculate the sum. Demonstrate the method in a program.

3. Write a recursive function that accepts two arguments into the parameters x and y. The function should return the value of x times y. Multiplication can be performed as repeated addition as follows:

   7 * 4 = 4 + 4 + 4 + 4 + 4 + 4 + 4.

4. Write a recursive Boolean method named isMember. The method should search an array for a specified value and return true if the value is found in the array, or false if the value is not found in the array. Demonstrate the method in a program.