

Homework #9 – List Operations in Scheme

CSCI 450

Preparation

You will need to finish a program using the programming language Scheme.
Check Course Information on Bb for detailed instructions on Racket installation.

Problem Statement

Write a program with the following functions defined:

- **countAtomInList**. This function should take an integer and an integer list as parameters and returns the occurrences of the integer in the list.
- **squareTheList**. This function accepts an integer list as a parameter and squares each element in the list.
- **evenInList**. This function accepts an integer list as a parameter and returns the even numbers in the list.

Save and run your program, demonstrate each of the above functions. (Check sample output on next page)

Requirements & Considerations

1. Name your program **list_yourLastName.scm**
2. Include **header** comments (at the beginning of your program, I used Java comments below, what is the comment symbol for Scheme?) formatted as shown below, using your name and student ID, etc. instead. Be sure to include the Honor Code statement and program description. Your electronic submission of the program file will represent your endorsement of the Honor Code Statement.

```
/* Course: CSCI 450, Section 1
Student Name: Jane Doe
Student ID: 12345678
Homework #9
Due Date:
```

```
In keeping with the Honor Code of UM, I have neither given nor received any
inappropriate assistance from anyone other than the TA or the instructor.
```

```
Program Description: .....
*/
```

3. Before each significant step, provide a comment explaining the step (do not comment every line of code).
4. Submit your finished program (**list_yourLastName.scm**) on Blackboard using the **Homework #9** link under Homework Assignments button.

Check Sample Output on next page →

Sample Output

```
> (countAtomInList '2 '(1 2 3 4 2 2 2))  
4  
> (squareTheList '(1 2 3 4 5))  
'(1 4 9 16 25)  
> (evenInList '(1 2 3 4 5))  
'(2 4)
```