

**Question 1)** Given a string, write a routine that converts the string to a long, without using the built in functions that would do this. Describe what (if any) limitations the code has. For example:

```
long stringToLong(String s)
{
    /* code goes here to convert a string to a long */
}

void test()
{
    long i = stringToLong("123");
    if (i == 123)
        // success
    else
        // failure
}
```

**Question 2)** Implement insert and delete in a tri-nary tree. A tri-nary tree is much like a binary tree but with three child nodes for each parent instead of two -- with the left node being values less than the parent, the right node values greater than the parent, and the middle nodes values equal to the parent.

For example, suppose I added the following nodes to the tree in this order: 5, 4, 9, 5, 7, 2, 2. The resulting tree would look like this:

```
      5
     / | \
    4  5  9
   /   \ /
  2     7
   |
  2
```