CS21 Practice QUIZ 4, Swarthmore College Fall 2008

1. Start a top-down design for the following problem. Complete at least the `main` program as well as another function that requires additional sub-functions.

   Design a program that plays the game Rock-Paper-Scissors. This is a two-player game. Each player simultaneously chooses Rock, Paper, or Scissors. If both players choose the same thing, it's a tie. If not, Paper beats Rock, Rock beats Scissors, and Scissors beats Paper. In your game, have the computer be one player and have a human user be the other player. Play multiple games until the user wants to quit, then report how many times each player won.

2. Trace through the following program and show the final output of the program. Also draw the stack before the first call to `helper` returns.

   ```
   def helper(x, y):
       z = 0
       while x > y:
           x = x - y
           z = z + 1
       return z

   def main():
       n1 = 18
       n2 = 4

       ans1 = helper(n1, n2)
       ans2 = helper(n2, n1)

       print ans1, ans2

   main()
   ```

3. Write a function that, given a file name, opens the file and stores the first character of each line in a list. The function should also close the file when done reading it and return the list of first characters. Show how your function would be called from `main`.

4. Write a function that asks the user to enter test scores, and then returns the test scores in a list. The function should continue asking for test scores until the user enters a value of -1.