

Practice Quiz 5

1. Draw the stack for the following program. What will be printed?

```
def main():
    myls = [8,3,1,5,2]
    print myls
    doubleList(myls)
    print myls

def doubleList(ls):
    for i in range(len(ls)):
        ls[i] = ls[i] * 2
    # draw stack at this point
    return

main()
```

2. Draw the stack for the following program. What will be printed? In general, what does the mystery function compute?

```
def main():
    test = 8
    result = mystery(test)
    print "Answer is:", result

def mystery(n):
    if n == 1:
        # draw stack at this point
        return 0
    else:
        return 1 + mystery(n/2)

main()
```

3. Write an iterative function, `sumEvenIter(n)`, that returns the the sum of the even integers between 2 and n inclusive. For example, `sumEvenIter(8)` would return 20, which is $2 + 4 + 6 + 8$.

4. Write a recursive function, `sumEvenRecur(n)`, that returns the sum of the even integers between 2 and n inclusive.

5. Suppose you were going to sort the following list using selection sort:

[12, 3, 7, 1, 8, 2, 5, 4, 10, 9]

Show how the list would be changed after one iteration through selection sort:

Explain in your own words the key idea of selection sort.