1 Administrative Topics

• Time for Quiz 2

2 For Loops

The syntax of a for loop is

\[
\text{for [item] in [list]:}
\]

\[
\text{block of code “in the loop”}
\]

Item is the loop control variable. It is just a variable. It can have any name. list is a list of values.

Python executes a for loop by setting the loop control variable to the first item in the list, then executing the block of code. Then, Python sets the loop control variable to the second item in the list, then executes the block of code. This process is repeated until there are no more elements in the list.

How does execution of the for loop affect the memory? First, Python determines what the list is and puts it into memory in a hidden place. We will draw this as a variable named _hidden_ in the appropriate symbol table. Then python adds the loop control variable to the symbol table (or just updates it if it is already there). It sets its value to the first item in list. Then,
Python executes the block of code in the loop. This may affect the symbol table. The process is repeated for each item in the loop. Once the loop has finished execution, the loop control variable remains in the table with the last value from the list.

In class we stepped through this example:

```python
for i in range(4):
    print(i)
    turtle.forward(50)
    turtle.left(90)
    raw_input()
```

Then, we moved on to drawing trees. I am not going to put any more about that in the notes. Please refer to the code for the drawing of the trees.