

Objectives:

- Understand the selection statements: if, if-else, and if-elif-else
- Understand the count-controlled loop: for statement
- Understand the conditional iteration loop: while statement

Part A: if-elif-else statements

Write a Python program that prompts the user for a package weight and prints the total shipping charge for the package. Use the following table to determine the rate per pound:

Weight of Package	Rate per Pound
2 pounds or less	\$1.10
Over 2 pounds, but not more than 6 pounds	\$2.20
Over 6 pounds, but not more than 10 pounds	\$3.70
Over 10 pounds	\$3.80

A sample interaction with your program might look like:

```
Welcome to the Shipping Charge Program!

Enter the package weight in pounds: 4

The rate per pound was $2.20 so your total shipping charge is $8.80.
```

Test your program thoroughly to make sure that it works correctly. Record the package weights you used to test your program and their corresponding shipping charges in the following table:

Weight of Package (input)	Shipping Charge (output)

After you have your program working correctly (“debugged your program”), raise your hand and demonstrate your program.

Part B: for-loop

Download and extract the following file to your desktop: <http://www.cs.uni.edu/~fienu/cs051f10/labs/lab3.zip>

The file lab3/averageWithFor.py contains a “count-controlled” for loop using the xrange function to average the scores for a class. The code is given below:

```
''' File: averageWithFor.py
   Description: Calculates the average score using a counter-controlled for-loop'''

numberOfScores = input("Enter the number of scores to average: ")

total = 0.0;
for counter in xrange(numberOfScores):
    score = input("Enter score #" + str(counter+1) + ": ")
    total = total + score

if numberOfScores > 0:
    print "The average score is", total / numberOfScores
```

To practice a “count-controlled” for loop using the `xrange` function, write a program that calculates the amount of money a person would earn over a user-specified number of days if their salary is one penny the first day, two pennies the second day, and continues to double each day. The program should prompt the user for the number of days, and then displays a (well formatted) table showing the day #, the salary for that day, and total salary paid from day 1 through that day.

A sample interaction with your program might look like:

```

Your salary is one penny the first day, two pennies the second day, and
continues to double each day.

Enter the number of days you would like to trace your salary: 10

Day #      Salary for this day      Total salary paid
      (in dollars)           (in dollars)
-----
1          0.01                0.01
2          0.02                0.03
3          0.04                0.07
4          0.08                0.15
5          0.16                0.31
6          0.32                0.63
7          0.64                1.27
8          1.28                2.55
9          2.56                5.11
10         5.12                10.23

```

After you have your program working correctly (“debugged your program”), raise your hand and demonstrate your program.

Part C: while loops

“Count-controlled” for loops work great if we know how many times we’d like to loop before we start the loop, but often we don’t. Often we want to use a “condition-controlled” while-loop to continue looping while some condition is met. The syntax of a while statement is:

```

while <condition>:
    statement1
    statement2
    statement3

```

A while statement repeatedly executes the statements in the body of the loop as long as the `condition` evaluates to `True`.

To practice a “condition-controlled” while loop, write a program to determine how many days a person would need to work before their daily salary exceeds one million dollars if their salary is one penny the first day, two pennies the second day, and continues to double each day. A sample interaction with your program might look like:

```

Your salary is one penny the first day, two pennies the second day, and
continues to double each day.

It will take 28 days before your daily salary exceeds a million dollars.

```

After you have your program working correctly (“debugged your program”), raise your hand and demonstrate your program.

If you complete all parts of the lab, nothing needs to be turned in for this lab. If you do not get done today, then show me the completed lab in next week’s lab period.

Make sure that you take your USB-drive out of the computer and log off before you leave.