

CMPS 150 – Lab 10

The following is an exercise in working with Python functions. When done, be sure your Python source code runs properly and upload your completed lab to your TA on Moodle.

1. Copy/Save the lab source code file for today from the Moodle Lecture Site

Look for the files for today “lab10.py” AND “trees.py” and save the files to your machine.

2. Launch IDLE.

3. Edit the first two lines of the code to have **YOUR** name/id/section.

```
# Author:          Your-Name
# ULID/Section:    Your-ULID & lecture section-number go here
```

4. Add functions to perform several tasks, returning all results to main to be printed.

This lab will compute the cost of a tree trimming or tree removal job. Data for task will be in a file named “**trees.py**”. The file will contain an unknown amount of data, therefore you must use a sentinel-controlled while loop to process the data. Each “set” of data will consist of the following: a string on a line by itself (indicating the type of job, either “**TRIM**” or “**REMOVE**”), then an integer on the following line that indicates either the number of hours required to trim the tree or the number of trees to be removed.

Trimming of trees costs \$80 per hour. Removal of trees costs \$500 per tree.

You must read data in the main function and pass appropriate data as parameters to functions.

One function must determine/compute the cost of the job and return the cost to main.

NOTE: this function will be passed 2 parameters and return 1 value

A second function must print the data read from the file and the cost returned from the first function. This is a line in the “neat & tidy” table.

NOTE: this function will be passed 3 parameters and return no value

Since this is a sentinel-controlled loop, you must have a sentinel value to indicate when the loop must end. The sentinel value is when the integer value is 0.

A sample file can be seen at right.

```
TRIM
7
TRIM
2
REMOVE
3
TRIM
24
REMOVE
5
TRIM
5
###
0
```

REMEMBER: Your program must run properly for ANY number of “sets” of data.

When done, print the data and cost of the most expensive job.

See sample run below.

Sample Run

Job Type	Hrs/Trees	Cost

TRIM	7	560
TRIM	2	160
REMOVE	3	1500
TRIM	24	1920
REMOVE	5	2500
TRIM	5	400

Most Expensive Job

REMOVE	5	2500
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5. *When you have edited and reviewed the code, save the file, and run your code.*

6. *Debug your code (perhaps you can skip this step).*

If you have any errors in your code, the interpreter will produce an error, with a line number, where it detects there is a problem with your code. Return to the editor and correct the error. Run it through the interpreter again (step 5) until it runs with no errors.

7. *Exit Python*

Close the Python IDLE editor.

Close the Python IDLE shell.

8. *Upload to Moodle*

Get in a browser and login to Moodle.

Instead of going to the Meta Site, go to YOUR specific Upload section on the Moodle site.

Here you will see the lab submission link for today. Click on the submission link for Lab #10.

Click to “Add a Submission” then “Upload a File”

Select to “Choose a File” and go about the process of browsing/finding “lab10.py” on the computer

Select to “Upload this File”

When returned to the Upload screen, MAKE SURE to click on the “Save Changes” button.

You will be returned to the “Lab #10” screen. This time you should see your source code file listed on it.

9. *Logout of Moodle*