

CS119 – Lab 2C

Due Date: February 20

Purpose: There is a form of recursion, called tail recursion, that feels more like iteration (loops). There are times when this type of recursion may be more natural for solving a problem.

Knowledge: This lab will help you become familiar with the following content knowledge:

- How to write tail recursive functions

Task: Follow the steps in this lab carefully to complete the assignments. Write all of your functions in the file `Example2.hs`.

Assignment 1:

You previously wrote a function `countdups` which takes a sentence and returns the number of words in the sentence that are immediately followed by the same word:

```
> countdups (sent "y a b b a d a b b a d o o")
3
```

```
>countdups (sent "yeah yeah yeah")
2
```

Write a tail recursive function `countdupsTail`.

Criteria for Success: The function uses tail recursion and behaves properly for the examples given above.

Assignment 2:

You previously wrote a function `explode` which behaves as follows:

```
> explode (word "dynamite")
[dynamite]
```

Write a tail recursive function `explodeTail`.

Criteria for Success: The function uses tail recursion for the task and returns the correct type, which is a **sentence rather than a word**.

Submit your `Example2.hs` file in Canvas for grading.