

CS 110 – Creative Problem Solving  
in Computer Science  
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Homework 3

Instructor: Adriana Compagnoni

**Due on Friday September 23, 2016 at 11:55PM**

This homework is about if, elif, and else in Python.

1. (25 points) Write a function called `head` that returns the first element of a list and the message “Error: the empty list has no head”, if the list is empty.

```
>>> head([])
Error: the empty list has no head
>>> head([23, 4, 66])
23
```

2. (25 points) Write a function `tail(lst)` that returns a new list obtained from `lst` by removing its first element and the message “Error: the empty list has no tail”, if the list is empty.

```
>>> tail([])
Error: the empty list has no tail
>>> tail([23, 4, 66])
[4, 66]
```

3. (50 points) Write a function `replace_and_triple(x, y, z, lst)` that returns the result of replacing every `x` by `y` and every `z` by `3*z` in `lst`, if `z≠x`, and if `z=x` it returns `lst`.

```
>>> replace_and_triple(1, 7, 5, [1, 4, 3, 1, 5, 20, 5])
[7, 4, 3, 7, 15, 20, 15])

>>> replace_and_triple(21, 4, 7, [])
[]
```