

Assignment 2

Due Monday, June 21th, 5:30 pm

Reading

Read Chapter 3, review 2.3 (Lists) in **Introduction to Computing using Python: An Application Development Focus, Second Edition** by Ljubomir Perković.

Logistics

Please document any collaboration relevant to this assignment, in the header comment of the source file, as described in the first assignment.

Assignment

Implement the functions below in the file **csc401_homework2.py** which can be found on [the D2L site](#) in the Week 2 folder. You should save the template file I provided and then modify that file by adding the bodies for the functions. When you do, make sure to remove the placeholder pass statements that are currently there.

1. Implement the function **buy_tickets(age, ticket_type)** so that it **returns** the price of a train ticket purchase, given 2 parameters:

1. **age** - the age of the purchaser
its data type is a positive integer
2. **ticket_type**- type of ticket being purchased
its data type is string with 2 legal values: “monthly” and “10-ride”

For the sake of this assignment you can assume that the parameters are always valid values.

This is the algorithm for calculating a ticket price:

- a. standard 10-ride price is \$38
- b. standard monthly price is \$159.50
- c. If the purchaser is 65 or older, they get a 10% discount

These test cases should all pass:

```

>>> buy_ticket(21, "10-ride")
38
>>> buy_ticket(21, "monthly")
159.5
>>> buy_ticket(70, "monthly")
143.55
>>> price = buy_ticket(70, "10-ride")
>>> price
34.2

```

2. Change the implementation of the function **sequences()** found in the `csc401-homework2.py` file so that the following three sequences are **printed** by the for loops found in **sequences()**. The information below shows how you would call the function and what it would display as a result:

```

>>> sequences()

9 10 11 12 13 14 15

4 8 12 16 20 24 28

30 27 24 21 18 15 12

```

3. Implement the function **shorten_text(word_list)** that takes a list of strings as a parameter and for each word in the list. **prints** the first character + "..." + the last character of each string, one word per line. If the list provided as a parameter is empty, the function prints a message to that effect. If any of the strings are empty, they are skipped in the display. The information below shows how you would call the function **shorten_text()** and what it would display for a couple of parameters:

```

>>> shorten_text(['house', 'business', 'trees'])
h...e
b...s
t...s
>>> shorten_text([])
Input is empty
>>> shorten_text(['horse', '', 'candy'])
h...e
c...y

```

4. Implement a function **find_multiples(number_list, target)** that takes as parameters a list of numbers and a numeric value. It **prints out** each value from `number_list` that is a multiple of the target number. If an empty list is

provided as the first parameter, the function prints an error message. The information below shows how you would call the function and what it would display for some example parameters:

```
>>> find_multiples([1,2,3,4,5,6], 2)
2
4
6
>>> find_multiples([1,2,3,4,5,6], 3)
3
6
>>> find_multiples([], 0)
No numbers provided
```

Submitting the assignment

Submit your just your source code (csc401_homework2.py) to the Homework folder in D2L.

Grading

The assignment is worth 100 points. Each problem is worth 25 points.