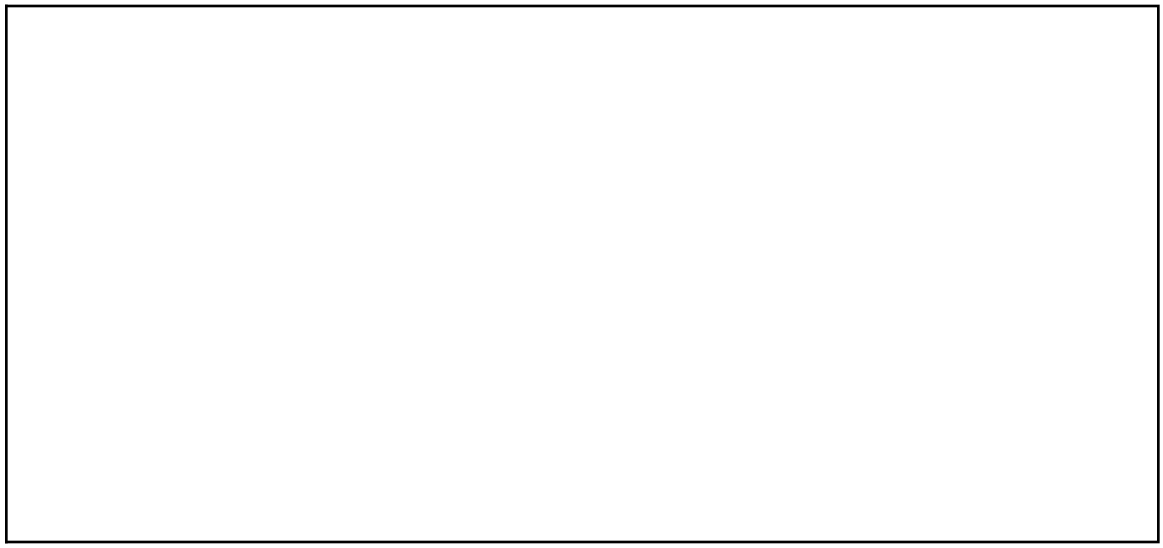
Week 2 Discussion Worksheet

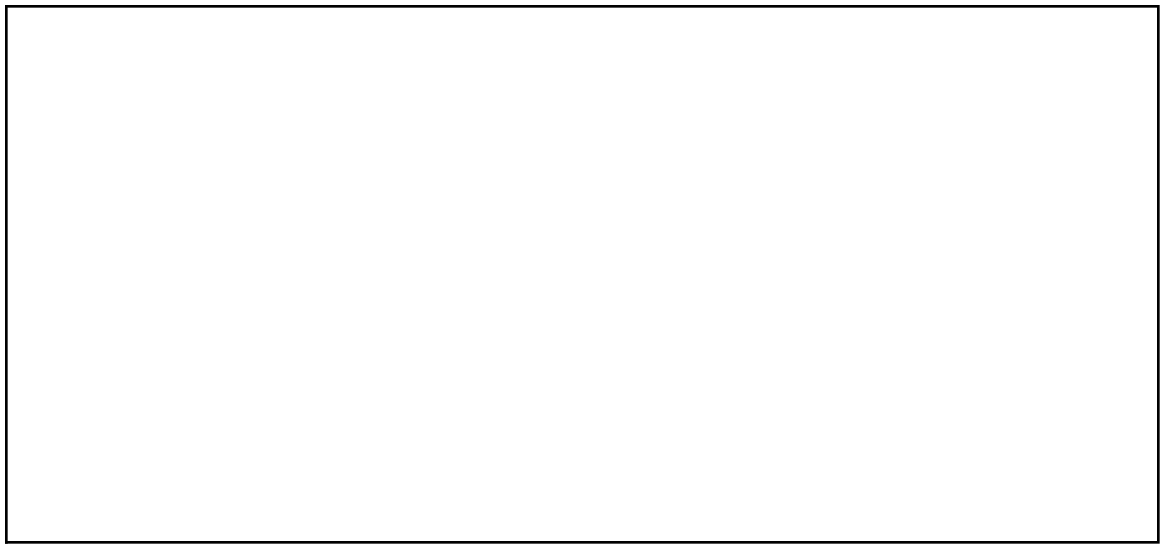
1. Write a function that takes in a list of integers and returns a new list containing only the numbers that are in increasing order. Numbers should appear in the same order in the input and output list.

```
def increasing(lst):
    """
    >>> increasing([1, 3, 2, 4, 5, 8, 7, 6, 9])
    [1, 3, 4, 5, 8, 9]
    """
```



2. Suppose you are given a dictionary that contains information about students and their grades for different classes. Write a function that takes in such a dictionary and returns a new dictionary that contains the average grade for each student. The output dictionary should have student names as keys and their average grades as values.

```
def avg_grade(grades):
    """
    >>> avg_grade({"Alice": {"math": 85, "dsc": 90, "english": 80},
        "Bob": {"math": 92, "dsc": 88, "english": 95}})
    {"Alice": 85.0, "Bob": 91.67}
    """
```



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3. You go grocery shopping and note down the name, quantity, and price per unit of each item you buy in the variable *shopping*. What does the following code do and what will be printed after running it?

```
1  shopping = [('banana', 5, 0.75),
2              ('avocado', 4, 1.5),
3              ('soda', 8, 0.5),
4              ('peach', 10, 1.70)]
5
6  total = 0
7  item_cost = {}
8  for item in shopping:
9      name = item[0]
10     quantity = int(item[1])
11     price = float(item[2])
12     cost = quantity * price
13     item_cost[name] = cost
14     total += cost
15
16 print(item_cost)
17 print(total)
18
```

4. For each of the following sections, name the error type (KeyError, IndexError, SyntaxError, TypeError):

   a.

```
def send_email(to, message):
    tutors = {'Ben': 'bhc001@ucsd.edu', 'Charisse': 'chao@ucsd.edu',
     'Nicole': 'nwzhang@ucsd.edu', 'Jessica': 'yuhung@ucsd.edu'}
    return "Email sent to " + tutors[to] + ": " + message

send_email("Marina", "There's too many types of errors")
```

   b.

```
def send_email(info):
    tutors = {'Ben': 'bhc001@ucsd.edu', 'Charisse': 'chao@ucsd.edu',
     'Nicole': 'nwzhang@ucsd.edu', 'Jessica': 'yuhung@ucsd.edu'}

    recipient = info[0]
    message = info[1]
    return "Email sent to " + recipient + ": " + message

send_email(["There's too many types of errors"])
```