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Section:

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## CSE 160 Summer 2024 - Midterm Exam

### Instructions:

- You have **55 minutes** to complete this exam.
- The exam is **closed book**, including no calculators, computers, phones, watches or other electronics.
- You are allowed a single sheet of notes for yourself.
- We also provide a syntax reference sheet.
- Turn in *all sheets* of this exam, together and in the same order when you are finished.
- When time has been called, you must put down your pencil and stop writing.
  - **Points will be deducted if you are still writing after time has been called.**
- You may only use parts and features of Python that have been covered in class up to this point.
- You may ask questions by raising your hand, and a TA will come over to you.

**Good luck!**

Question	Topic
Question 1	Expressions
Question 2	Loops, ifs
Question 3	Files
Question 4	ifs, Loops, Lists
Question 5	Functions



### Question 1)

All of the expressions in the left hand column are going to be printed, what value would be output to the terminal if printed. If evaluating the expression would result in an error, write "Error" in both the value and type columns. If you are writing a string please include a “\_” where a space should be.

Expression	Value After Evaluating	Type
<code>100 - (27 // 2)</code>		
<code>27 % 5 - 10</code>		
<code>'Python in CSE' + 160</code>		
<code>['hello', 1, 3, [5, 6], 22][1:4:2]</code>		
<code>my_lst = [22, 29, 23][3] [5, 4, 7, 1, 8, 9].append(my_lst)</code>		
<code>[5, 4, 7, 1, 8, 9].sort()</code>		
<code>'Good' + 'Job!'</code>		





**Question 4)** You run the code below.

```
numbers = [5, 8, 13, 20, 25]
result = []
for num in numbers:
    if num % 2 == 0:
        result.append(num * 2)
    elif num > 15 or num < 8:
        result.append(num)
    else:
        if num % 5 == 0:
            result.append(num + 5)
        else:
            result.append(num - 3)
print(result)
```

What will be output to your terminal?

### Question 5)

You are given a list of lists of integers called `temperatures`, where each list contains all the recorded temperatures of a city. You are given another list called `cities` that contains the names of all of the cities that each list in `temperatures` corresponds to. For example, index 0 of `temperatures` contains the recorded temperatures for the city in index 0 of `cities`, and so on.

Write a function `temperature_averaging` that creates a dictionary of key-value pairs where the key is the name of the city and the value is the average recorded temperature for that city.

For example, given

```
temperatures = [[78, 92, 24], [34, 12], [40, 4, 2, 67, 8]]
cities = ["Paris", "Tokyo", "Seattle"]
```

Your code should return the following dictionary:

```
{"Paris" : 64.6666667, "Tokyo": 23, "Seattle" : 38.6}
```

You should not use the built-in python function `sum`. You may assume that the lists `temperatures` and `cities` are already defined. Write your code in the provided function header below. Do not do any rounding.

```
def temperature_averaging(temperatures, cities):
```

**Extra Credit:** Draw your favorite dessert.





