CSE 160 - Midterm Exam

Autumn 2023

Name: _____

UW Email: _____@uw.edu

- You have 50 minutes to complete this exam.

- You are allowed a 8.5" x 11" cheat sheet.

Question	Points	Score
1	8	
2	6	
3	5	
4	5	
5	5	
6	6	
Total:	35	

1. (a) (4 points) For each of the expressions below, write what it evaluates to and the type of that value (float, int, string, or bool). You should specify any floating point values only to one decimal point (e.g., 0.5). Remember to add quotation marks if the expression evaluates to a string.

   If an error is produced, write "Error" under the Evaluation column and leave the Type column blank.

Expression	Evaluation	Type
`int(3 + 1.5)`		
`lst = [1, 3, 5, 7]` `lst[-2] ** 2`		
`"NCT " + 127`		
`"A" in "man" or 2 < 1`		

   (b) (4 points) Given the following dictionary, write what each expression evaluates to.

   `random_dict = {"purple": 1, 2: "blue", "three": 3, "hello": "world", 1: 100}`

Expression	Evaluation	Type
`random_dict["hello"]`		
`random_dict[100]`		
`random_dict[purple]`		
`random_dict["three"]`		

2. (5 points total) Given the following function, what will print out when the below code is run?

   If nothing will be printed, write "Nothing" in the corresponding text box.

   ```python
   def mystery(n):
       if n < 0:
           print("Invalid input!")
       else:
           for i in range(1, n + 1):
               result = ""
               for j in range(i):
                   result += "*"
               print(result)
   ```

   (a) (1 point) `mystery(-1)`

   (b) (1 point) `mystery(0)`
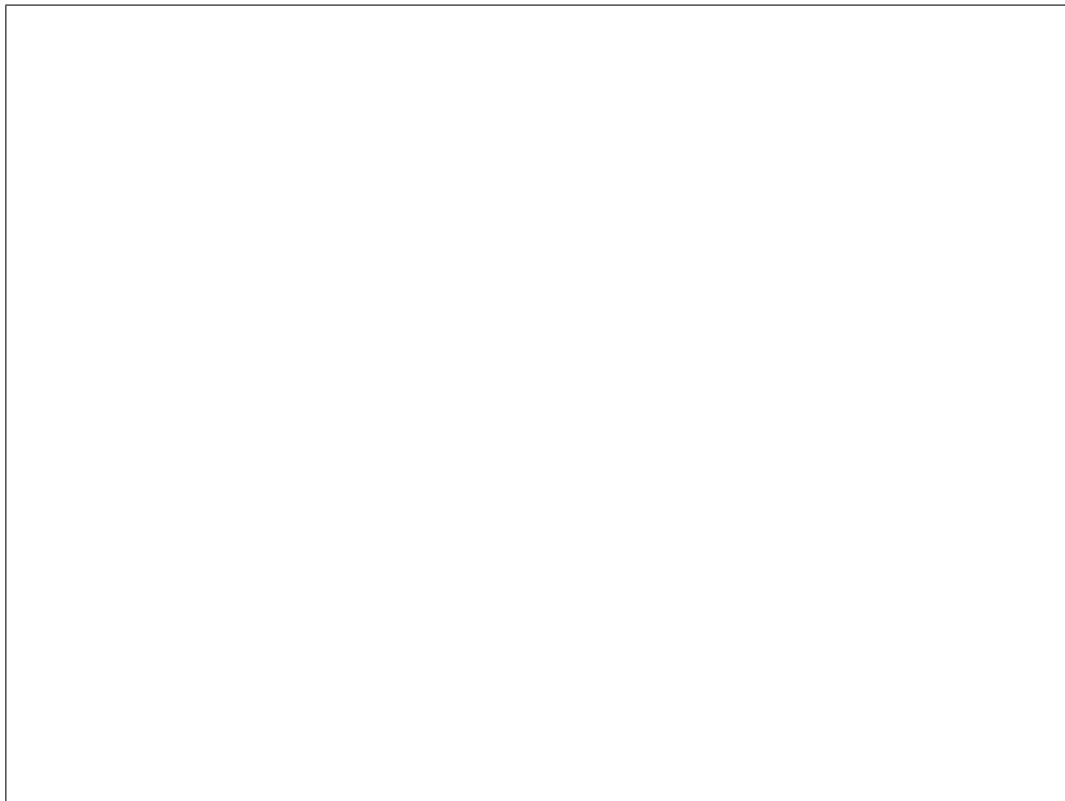
   (c) (4 points) `mystery(5)`

3. (5 points) You want to start a small flower garden at your house but don't know the right time to plant your seeds.

Write a function `plant_time()` that takes in two parameters:

- `season` - string which represents current season (can be only one of the values `"spring"`, `"summer"`, `"autumn"`, `"winter"`)
- `temp` - integer which represents temperature in Fahrenheit

Behavior:

- If the season is `"spring"` or `"autumn"` you should print `"You can plant"` regardless of the temperature.
- If the season is `"summer"` and the temperature is between 50 (inclusive) and 80 (inclusive), you should print `"You can plant"`, otherwise print `"Do not plant"`.
- If the season is `"winter"` you should print `"Do not plant"`.

4. (5 points) In each of the following code snippets, how many times is the line `"CSE 160"` (as one string on the same line) printed?

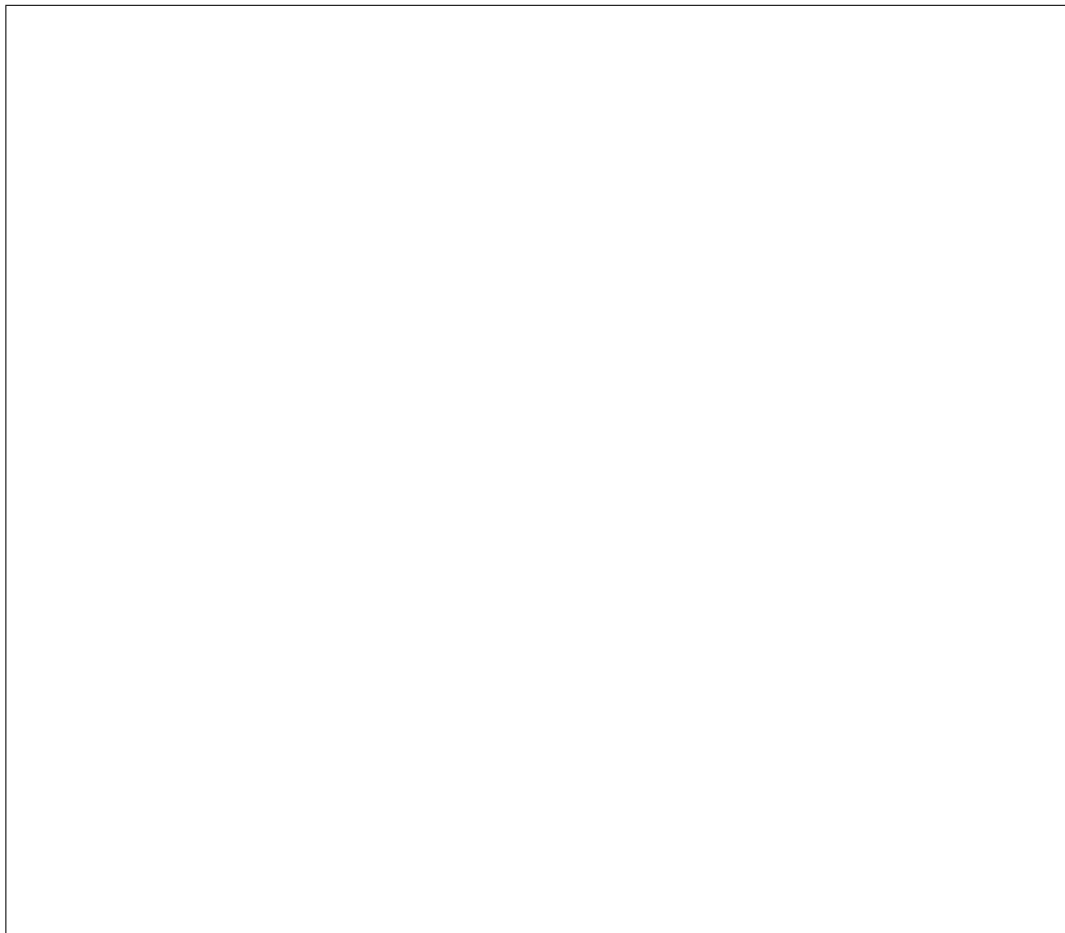| Code	# times

```for i in range(10):```
 	
    ```print("CSE 160")```	

```for i in range(0, 9, 3):```
 	
    ```print("CSE 160")```	

```for i in [1, 3, 5]:```
 	
    ```print("CSE 160")```
 	
    ```print("CSE 160")```	

```for i in range(5, 0):```
 	
    ```print("CSE 160")```	

```for i in "hello world":```
 	
    ```print("CSE 160")```	

5. (5 points) Given a list of strings that contains the names of TV shows `tv_shows` and a list of integers that contains the respective number of episodes per show `episodes`, write to a file `"shows.txt"` that contains a line `<show_name> has <episode_number> episodes` for each show.

   For example, given:

   ```
   tv_shows = ["Stranger Things", "Summer Strike", "Alice in Borderland"]
   episodes = [34, 12, 16]
   ```

   The file `shows.txt` will contain the content:

   ```
   Stranger Things has 34 episodes
   Summer Strike has 12 episodes
   Alice in Borderland has 16 episodes
   ```

6. Suppose we have the following list:

```
fruits = ["cherry", "strawberry", "elderberry", "raspberry"]
```

(a) (2 points) What is the printed output after running the following code?

```
ans = []
for i in range(len(fruits):
    if i % 2 == 0:
        ans.append(fruits[i])
print(ans)
```

(b) (2 points) What is the printed output after running the following code?

```
ans = []
for i in range(3):
    ans.append(fruits[i][0])
ans.extend(["160"])
print(ans)
```

(c) (2 points) Write one line of code that modifies the original `fruits` list so that it contains the following:

```
fruits = ["cherry", "raspberry"]
```

Hint: list slicing will need to be used.

7. (1 point) Extra Credit