

Theory and Understanding

Question 1



What would this code output?

```
scores = [1, 4, 2, 6, 2, 6]
```

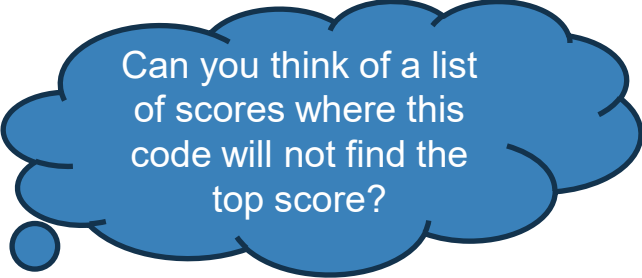
```
top_score = 0
```

```
for score in scores:
```

```
    if score > top_score:
```

```
        top_score = score
```

```
print(top_score)
```



Can you think of a list of scores where this code will not find the top score?



Question 2

What does the following code output if the input is 3?

```
gpa = int(input("GPA: "))
if gpa >= 3:
    print("You have a " + str(gpa) + " GPA!")
if gpa > 3:
    print("Good job!")
else:
    print("Hmm...")
```

Question 3



What would this code output?

```
scores = [3, 8, 9, 8, 2]
mystery = 0
for score in scores:
    if score >= mystery:
        mystery = score
print(mystery)
```

Question 4



What would this code output?

```
scores = [3, 8, 9, 8, 2]
mystery = 10
for score in scores:
    if score <= mystery:
        mystery = score
print(mystery)
```

Question 5



After 3 iterations of the loop, what is the value of letters?

```
words = ["Ho", "Hi", "Hello", "Hey", "Hiya"]
letters = ""
for i in range(len(words)):
    letters += words[i][-1]
print(letters)
```

Coding

Question 6

Use the paradigm learned in class to find the smallest number in a list entered by the user, separated by commas. You may assume the user enters the list correctly with numbers only between 1-100 (inclusive).

You may NOT use the built-in Python min function.

Here is a sample run:

```
Enter 5 numbers between 1-100, separated by commas: 25,4,90,59,100
The min number is 4
> |
```



Question 7



Write a program that calculates the Similarity score between two people's hobbies. A similarity score is defined as the number of common interests.

The program should take as input 2 strings with hobbies separated with spaces. It should be robust to upper/lowercase, e.g.

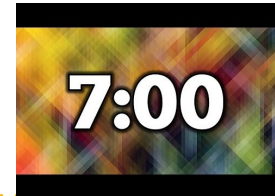
- Skiing Drawing coding
- Knitting skating Coding

It should output the number of common interests, as shown in the example.

Here are 2 sample runs:

```
Please enter hobbies, separated by spaces.  
Person 1:  skiing rockclimbing drawing  
Person 2:  drawing skiing pumpkins  
You have 2 hobbies in common!
```

```
Please enter hobbies, separated by spaces.  
Person 1:  Snowboarding Rockclimbing TV  
Person 2:  RockClimbing tv snowboarding  
You have 3 hobbies in common!
```



Question 8

Write a ParentBot that asks 4 questions.
Every time you say yes, then your points increase. The questions are:

- Did you eat?
- Did you study?
- Did you do your laundry?
- Did you call grandma?

At the end, ParentBot will reply to you as follows.

0 points: I'm coming over.

1-2 points: Ok.

3-4 points: Good!

Your code should use a loop and at least one comparison operator `<` `>` `<=` `>=` `==`

Here are 3 sample runs:

```
> Did you eat? no
Did you study? no
Did you do your laundry? no
Did you call grandma? no
I'm coming over.
> █
```

```
> Did you eat? yes
Did you study? yes
Did you do your laundry? yes
Did you call grandma? yes
Good!
> █
```

```
> Did you eat? yes
Did you study? no
Did you do your laundry? yes
Did you call grandma? umm
Ok.
> █
```

7:00

