Week 5: Assignment 5

Your last recorded submission was on 2024-08-18, 00:31 IST Due date: 2024-08-28, 23:59 IST.

1) Which of the following is the correct way to add data with key as $\mathbf{CS101}$ and value as $\mathbf{"Web\ Programming"}$ to a dictionary named $\mathbf{courseData}$? *1 point*

- $\mathbf{courseData["CS101"].append("Web\ Programming")}$
- $\mathbf{courseData["CS101"]["Web\ Programming"]}$
- $\mathbf{courseData["CS101"] = "Web\ Programming";}$
- **(selected)** $\mathbf{courseData["CS101"] = "Web\ Programming"}$

2) What is the probability of Monty opening the door with goat, given the hypothesis that you initially chose the door which has car ? *1 point*

- 0.5
- **(selected)** 0.66
- 0.33
- 1

3) What should be replaced with $\mathbf{?}$ in line 10, so that there is high chance that $\mathbf{final\_choice}$ is equal to 2 ? *1 point*

write 01 (unit?unit=104&lesson=106)
Speech to Text : No need to write 02 (unit?unit=104&lesson=107)
Speech to Text : No need to write 03 (unit?unit=104&lesson=108)
Monte Hall : 3 doors and a twist 01 (unit?unit=104&lesson=109)
Monte Hall : 3 doors and a twist 02 (unit?unit=104&lesson=110)
Rock, Paper and Scissor : Cheating not allowed !! 01 (unit?unit=104&lesson=111)
Rock, Paper and Scissor : Cheating not allowed !! 02 (unit?unit=104&lesson=112)
Rock, Paper and Scissor : Cheating not allowed !! 03 (unit?unit=104&lesson=113)
Rock, Paper and Scissor : Cheating not allowed !! 04 (unit?unit=104&lesson=114)
Sorting and Searching : 20 questions game 01 (unit?unit=104&lesson=115)
Sorting and Searching : 20

```
import random
initial_choice = random.randint(0, 2)
doors = ['goat', 'goat', 'car']

for i in range(3):
    if i != initial_choice and doors[i] != 'car':
        monty_opens = i
        break

if ? :
    for i in range(3):
        if i != initial_choice and i != monty_opens:
            final_choice = i
            break
else:
    final_choice = initial_choice
```

- [x] True
- [x] (2**90) % 2 == 0
- [x] 3*((3**89) + 3) % 3 == 0
- [x] (2**90) % len(doors) == 1

4) Given that you have a sorted list of 1024 elemets, what is the maximum number of comparisons required to find the target element using binary search ? Also what is the number of comparisons to search such an element using linear search ? ***1 point***

- ○ Binary: 10, Linear: 512
- ○ Binary: 11, Linear: 1024
- ◉ Binary: 10, Linear: 1024
- ○ Binary: 11, Linear: 512

5) What type of data is contained in a file with a .wav or .wave extension? ***1 point***

- ○ Log data
- ◉ Audio data
- ○ Video data
- ○ Image data

6) What does this program print in the end ? ***1 point***

```
import random
n=10
counter = 0
for i in range(n):
    choices = ["rock", "paper", "scissors"]
    choice1 = random.choice(choices)
    choice2 = random.choice(choices)
    if choice1 == choice2:
        counter += 1
print(counter/n)
```

- ○ Fraction of throws where both players showed different symbol(rock/paper/scissors)
- ○ Fraction of throws where both players showed rock.
- ◉ Fraction of throws where both players showed same symbol(rock/paper/scissors)
- ○ Fraction of throws where both players showed paper.

7) In binary search, what happens if the target value is greater than the middle element of the array? ***1 point***

- ○ The search continues in the left half of the array.
- ◉ The search continues in the right half of the array.
- ○ The search ends.
- ○ The array is sorted again.

8) Which of the following is a requirement for binary search to work correctly? ***1 point***

- ◉ The list must be sorted.
- ○ The list must contain only positive numbers.
- ○ The list must be of an even length.
- ○ The list must contain unique elements.

9) Given an array [5, 3, 8, 4, 2], what will be the array after the third pass of Bubble Sort? ***1 point***

- ○ [3, 2, 4, 8, 5]
- ◉ [3, 2, 4, 5, 8]
- ○ [2, 3, 4, 5, 8]
- ○ [3, 5, 2, 4, 8]

10) How many swaps are performed in iteration 3 for bubble sorting list [4,3,2,1]? Enter 0 if the list is sorted in less than 3 iterations.

6

1 point

You may submit any number of times before the due date. The final submission will be considered for grading.

Submit Answers

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