HW4: Lists, Debugging

Due February 28, 2024 at 11:59pm

1 Debugging

Throughout this homework, whenever you encounter an error, we would like you to explain in a comment what it was and how you fixed it. You can write all these errors at any place in the file.

2 List slicing and striding

2.1 Part 1

Create a variable (name it anything you want but make it descriptive!) that is assigned to a list with the numbers 0 to 50. You should not have to write each number manually.

2.2 Part 2

Create a function that takes in a list and squares each element in the list.

```
>>> lis = [2, 3, 4]
>>> square(lis)
[4, 9, 16]
```

2.3 Part 3

You are given two lists: listA and listB. listA contains the integers 1 through 10 while listB contains the integers 20 through 30. Return a single, new list containing only the odd integers of both lists in sorted order.

```
Expected output: [1, 3, 5, 7, 9, 21, 23, 25, 27, 29]
```

3 2D Lists

3.1 Part 1

Using nested for loops, create and print a 5x5 2D list with the numbers 1 to 25.

```
Expected output: [[1, 2, 3, 4, 5],
                  [6, 7, 8, 9, 10],
                  [11, 12, 13, 14, 15],
                  [16, 17, 18, 19, 20],
                  [21, 22, 23, 24, 25]]
```

3.2 Part 2

Now with your completed 2D list, replace all multiples of 3 with '?' character and print the resulting list.

```
Expected output: [[1, 2, ?, 4, 5],
                  [?, 7, 8, ?, 10],
                  [11, ?, 13, 14, ?],
                  [16, 17, ?, 19, 20],
                  [?, 22, 23, ?, 25]]
```

4 More list practice

Write a function that takes in a list and returns a copy of that list with duplicate values removed.

```
>>> lis = [1, 1, 2, 3, 4, 4]
>>> removeDuplicates(lis)
[1, 2, 3, 4]
```