Assignment 5 - AKICS Python Classes

Q1. Given an array `temperatures = [22, 20, 'null', 21, 20, 18, 'null', 15, 17, 20, 'null']`

Replace the null values with the average of its left and right values for example:

```
temperatures[2] = (temperatures[1] + temperatures[3]) / 2
```

Hint: You need to find a way to store previous value while traversing through current value in the loop

Q2. Given a multi-dimensional list make it a diagonal matrix

```
matrix = [
    [4, 2, 6],
    [9, 7, 3],
    [4, 6, 7]
]
```

Hint: Diagonal matrix is one that has all zero entries except the diagonal elements. You need to use two loops as we did last time and then use if-else to check if it is a diagonal entry (how to do that? j == j) if yes do nothing otherwise replace entry matrix[i][j] = 0

Q3. Given below three lists add the corresponding elements of list_1 with list_2 and save the result of each addition operation in the result matrix

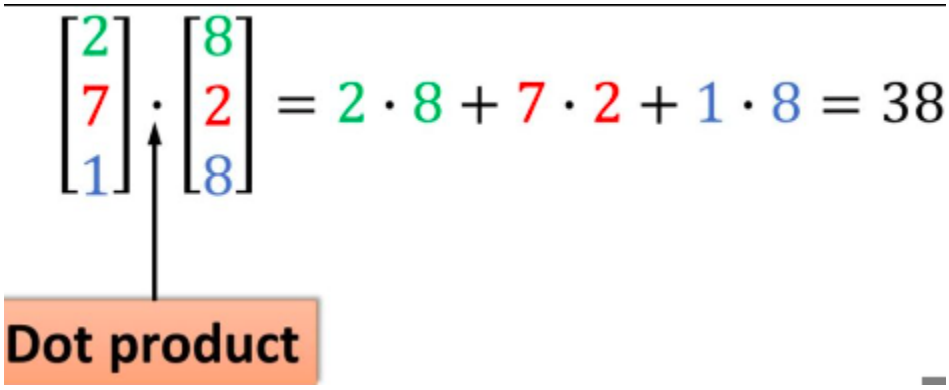
```
list_1 = [2, 9, 10, 4, 7, 99, 19]
list_2 = [9, 3, 10, 22, 7, 0, 0]
result = [0, 0, 0, 0, 0, 0, 0]
```

Hint: `result[0] = list_1[0] + list_2[0]` (you may use just one loop and using i you can access elements of both the lists at same time)

Q4. Given below three lists calculate dot product between these two vectors

```
list_1 = [2, 9, 10, 4, 7, 99, 19]
list_2 = [9, 3, 10, 22, 7, 0, 0]
```

Hint: please see below image



Q5. Find the minimum and maximum element in the given list. Suppose min could not be less than 0 and maximum could not exceed 100

```
student_marks = [80, 75, 63, 90, 84, 99, 59]
```

Hint: Use two variables min = 100 and max = 0 initially then use two if else (at the same level) in first compare every element with minimum if current element is less than minimum then update minimum to current element otherwise don't replace in other if-else statement do same with max but this time check if current element is greater than max