Coding Test – 1

Instructions:

1. **In all the below questions there should be at least one user defined function (def func())**
2. **Inputs are dynamic, can be change.**
3. **Create a new separate file on desktop and open it in Vs code.**
4. **You cannot open any folder in Vs code.**
5. **There will be no negative marking, so all questions are mandatory to attempt.**
6. **Time: 120 minutes**

Q1. Write a Python program to calculate the final price of a product after applying a series of discounts based on the following conditions:

• If the product price is above Rs1000, apply a 10% discount.

• If the customer is a member, apply an additional 5% discount.

• If the purchase is made during a sale period, apply an additional 7% discount.

Note: Discount should be applicable on resultant price of previous discount.

Test Case:

Input: Product price = 1500

Is Customer member = Yes

Sale period = No

Output: Final Price = 1282.5

Q2. Write a Python program to find the sum of all prime digits in a given number.

Test Case:

Input: 437529

Output: 17 (because 2, 3, 5, 7 are prime numbers in that number (437529) and 2 + 3 + 5 + 7 = 17)

Q3. Write a Python program to rearrange the digits of a given number to form the largest possible number.

Test Case 1:

Input: 34219

Output: 94321

Test Case 2:

Input: 564

Output: 654

Q4.Write a Python program to calculate the bonus for employees bas ed on their performance rating, years of service, and job level.

- If the performance rating is A, and years of service are more tha n 10, bonus is 20%.
- If the performance rating is A, and years of service are between 5 and 10, bonus is 15%.

- If the performance rating is B, and job level is Senior, bonus is 12%.
- If the performance rating is B, and job level is Junior, bonus is 8%.
- If the performance rating is C, no bonus.

Test Case 1:

Input:

Salary = 50000,

Performance Rating = A,

Years of Service = 8,

Output: Bonus = 7500

Final Salary = 57500

Test Case 2:

Input:

Salary = 20000,

Performance Rating = B,

Job level = Junior

Output: Bonus = 1600

Final Salary = 21600

Q5. If n = 5

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Q6. If n = 7

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*		*		*		*
*	*				*	*
*						*

Q7. If n = 7

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	*				*	
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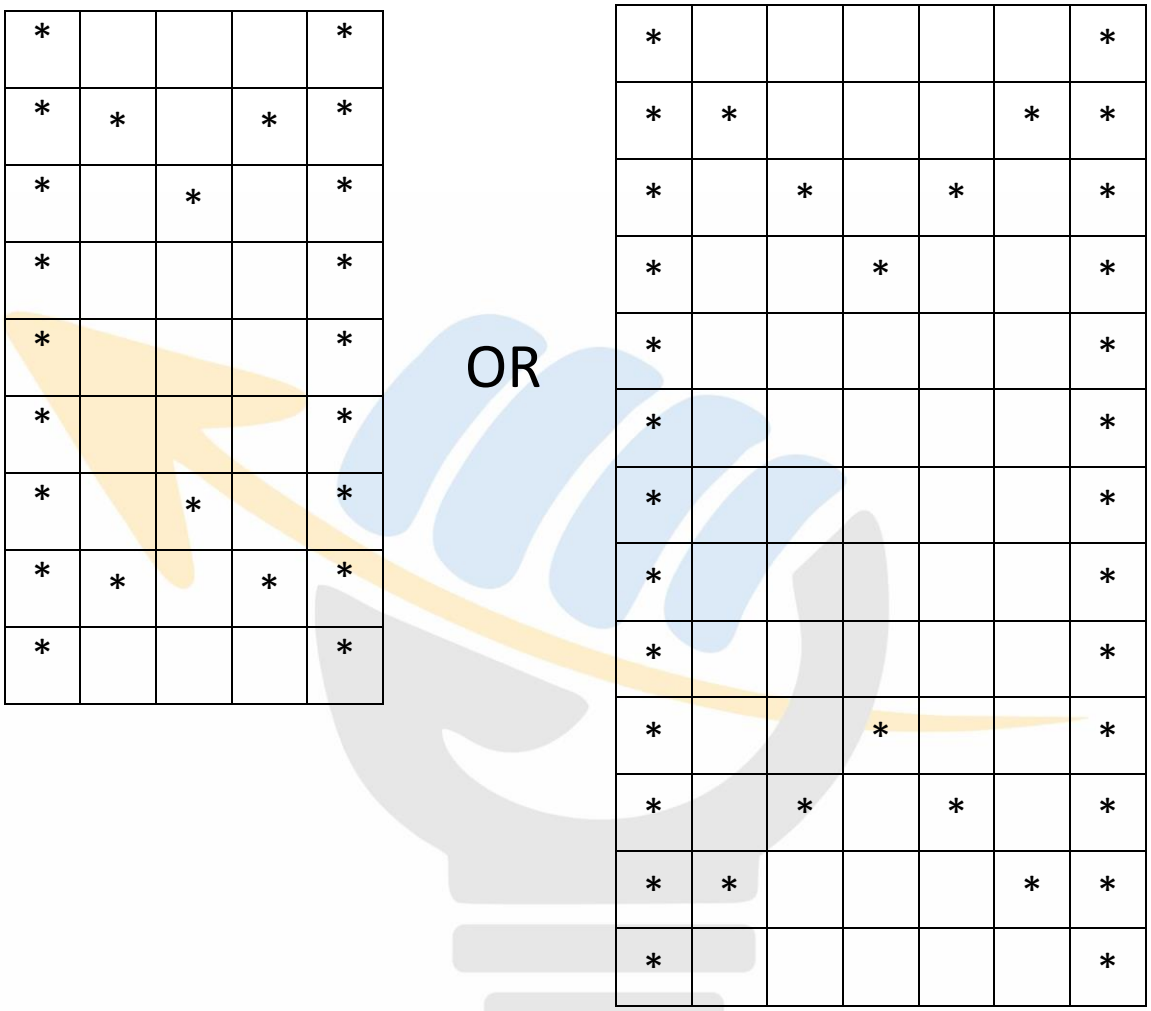
Q8. If n = 5 OR n = 7.



Q9. Write a python program to find **second minimum number** of a given list without using min() and sort().

List = [20,49,39,30,28,59]

Expected Output: 28

Q10. Using list comprehension, create a list of **squares of those numbers which are divisible by '2'** from the given list.

List = [[2, 3, 5], [6, 7, 9], [10, 11, 13]]

Expected Output: [4, 36, 100]

Q11. Write a Python program that repeatedly divides a given number **by 3 if it is divisible by 3, or by 2 if it is not divisible by 3**, until the result is less than 1. Print both the count of divisions and the total sum of all intermediate results.

Input: 50

Expected Output: Total divisions required: 6

Sum of intermediate results: 98.4375

50 + 25 + 12.5 + 6.25 + 3.125 + 1.5625

Q12. Write a python program using list comprehension to create a list which has the **average of elements of list** of given list.

lst = [[1,2,3],[3,4,5],[3,4,5],[5,7,3,2]]

Expected Output: [2.0, 4.0, 4.0, 4.25]