

## 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 based on their performance rating, years of service, and job level.

- ❖ If the performance rating is A, and years of service are more than 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 = 57500.0

Test Case 2:

Input:

Salary = 20000,  
Performance Rating = B,  
Job level = Junior

Output: Bonus = 1600

Final Salary = 21600.0

Q5. If  $n = 5$

		!		
	!	!	!	
!	!	!	!	!
		!		
		!		

Q6. If  $n = 7$

*						*
*	*				*	*
*		*		*		*
*			*			*
*		*		*		*
*	*				*	*
*						*

Q7. If  $n = 7$

			*			
		*		*		
	*				*	
*	*	*	*	*	*	*
*						*
*						*
*	*	*	*	*	*	*

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

*				*
*	*		*	*
*		*		*
*				*
*				*
*				*
*		*		*
*	*		*	*
*				*

OR

*						*
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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. 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]