Python Practice Questions

1, A shop gives a discount if a customer buys more than 3 items.
Write a program that asks the user for the number of items they want to buy and prints:
"Discount applied" if items > 3
"No discount" otherwise

2, You are given a list of product prices:
prices = [120, 45, 300, 85, 150]
Write a function get_expensive_products(prices) that returns a new list containing only the prices greater than 100.

3, Write a script that logs user activity.
When the program runs
Write "User logged in" to a file called log.txt.
Then read the file and print the full log history.

4,You are building a small student grade system.
Write a function:
get_grade(student_grades, student_name)
It should:
Try to return the student’s grade from a dictionary
If the student does not exist, catch the exception and return:
"Student not found in the system"

5,You receive a file called sales.txt where each line should contain a sales number.

Example:

200

450

abc

700

6, Write a program that:

a, Reads every line in sales.txt

b, Converts valid lines into integers

c, Skips invalid lines (like "abc") using exception handling

d, Stores the valid numbers in a list

e, Calculates and prints the total sales

7.Given an integer n, return a string array answer (**1-indexed**) where:

- answer[i] == "FizzBuzz" if i is divisible by 3 and 5.
- answer[i] == "Fizz" if i is divisible by 3.
- answer[i] == "Buzz" if i is divisible by 5.
- answer[i] == i (as a string) if none of the above conditions are true.

Example 1:

Input: n = 3

Output: ["1","2","Fizz"]

Example 2:

Input: n = 5

Output: ["1","2","Fizz","4","Buzz"]

8. Given an integer array nums, move all 0's to the end of it while maintaining the relative order of the non-zero elements.

Note that you must do this in-place without making a copy of the array.

Example 1:

Input: nums = [0,1,0,3,12]

Output: [1,3,12,0,0]

Example 2:

Input: nums = [0]

Output: [0]

9.Given an array of integers nums and an integer target, return indices of the two numbers such that they add up to target. You may assume that each input would have **exactly one solution**, and you may not use the same element twice.
You can return the answer in any order.

Example 1:

Input: nums = [2,7,11,15], target = 9

Output: [0,1]

Explanation: Because nums[0] + nums[1] == 9, we return [0, 1].

Example 2:

Input: nums = [3,2,4], target = 6

Output: [1,2]

10.Given an integer x, return true if x is a palindrome, and false otherwise.

Example 1:

Input: x = 121

Output: true

Explanation: 121 reads as 121 from left to right and from right to left.

Example 2:

Input: x = -121

Output: false

Explanation: From left to right, it reads -121. From right to left, it becomes 121-. Therefore it is not a palindrome.

11. Given a non-negative integer x, return the square root of x rounded down to the nearest integer. The returned integer should be non-negative as well.
You must not use any built-in exponent function or operator.

- For example, do not use x ** 0.5

Example 2: **Input:** x = 8 **Output:** 2

Explanation: The square root of 8 is 2.82842..., and since we round it down to the nearest integer, 2 is returned.

Example 1:

Input: x = 4

Output: 2

Explanation: The square root of 4 is 2, so we return 2.

12. A file named numbers.txt contains one number per line.

examples numbers.txt:

10
20
30
abc
40

Write a program that:

- Reads each line
- Converts valid numbers to integers
- Ignores invalid lines (use try/except)
- Prints the sum of all valid integers

Expected output:

Sum = 100 (because "abc" is skipped)

13. Read File and Convert All Text to Uppercase

Write a program that:

- Reads a file
- Converts all text to uppercase
- Displays it on the screen
- Uses try/except to handle missing file errors

Input: message.txt:

Hello World
Python is fun

output:

HELLO WORLD
PYTHON IS FUN

14. You are given a dictionary storing student scores:

scores = {"John": 85, "Sara": 92, "Fraol": 78}

Write a program that:

1. Asks the user to enter a student name.
2. Tries to print the student's score from the dictionary.
3. If the key does not exist, catch the exception and print: "Student not found!"

Example:

Input: Mark

Output: Student not found!

15. Write a program that:
    - Takes a sentence as input
    - Splits it into words
    - Stores the frequency of each word in a dictionary
    - Prints the dictionary

Example:

Input: "python is fun and python is powerful"

Output: {"python": 2, "is": 2, "fun": 1, "and": 1, "powerful": 1}

16. Create a new dictionary where the keys become values and values become keys.

Example:

Input: grades = {"John": "A", "Sara": "B", "Musa": "A"}

output: {"A": ["John", "Musa"], "B": ["Sara"]}