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Part 1: Coding Problem

Instructions:

- Solve the given coding problem(s). You can write code in the doc file or in any IDE you prefer. If you are writing code on an external editor, please copy the solution in the document below
- If you encounter difficulties, you may ask for hints.

Problem # 1 - Group Anagram:

Given an array of strings “**strs**”, group the anagrams together. You can return the answer in any order. An Anagram is a word or phrase formed by rearranging the letters of a different word or phrase, typically using all the original letters exactly once.

Input: strs = ["eat","tea","tan","ate","nat","bat"]

Output: [["bat"],["nat","tan"],["ate","eat","tea"]]

Write your code here

Problem # 2:

Encode and Decode TinyURL

TinyURL is a URL shortening service where you enter a URL such as

<https://kisaangroup.pk/problems/design-tinyurl> and it returns a short URL such as

<http://tinyurl.com/4e9iAk>.

Write two functions that encode a URL and decode a tiny URL.

- **function encode(longUrl):** Returns a tiny URL for the given longUrl.
- **function decode(shortUrl):** Returns the original long URL for the given shortUrl. It is guaranteed that the given shortUrl was encoded by the same object.

Write your code here

Part 2: Database Concepts (DB)

Question: Design a schema for an employee management system. The schema should include tables for Employees and Departments. Describe the relationships between these tables and any constraints. Additionally, include the manager relationship within the Employees table.

Query # 1:

Write a query to find the names of all employees along with the names of their managers.

Query # 2:

Write a query to find employees who earn more than their managers.

Query # 3:

Write a query to find the total salary expenditure for each department.

Additional Notes:

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