DSE 2144– Advanced Programming Language Lab
Week 4 – Date: 30th August 2024

Exercise 1: Customer Directory Management System

Objective

The goal of this case study is to develop a Python program that manages customer information for a telecommunications company. This involves creating a function to handle customer data, extracting relevant information, and printing the data in various formats.

Requirements

1. **Function Definition:**
   A. Define a function named *tel_directory* that takes a list of dictionaries representing customer information. Each dictionary contains:
      a. customer_id (Unique identifier for the customer)
      b. customer_name (Name of the customer)
      c. Subscription_type (Type of subscription: "prepaid" or "postpaid")
2. **Data Input:**
   B. Input at least 10 customer records using the *tel_directory* function.
3. **Data Extraction:**
   C. Extract data from the list of dictionaries and create a list of lists. Each list should be structured based on different key combinations.
4. **Output:**
   D. Print the extracted data in three different combinations of key fields:
      a. Combination 1: A list containing [customer_id, customer_name, Subscription_type]
      b. Combination 2: A list containing [customer_id, customer_name]
      c. Combination 3: A list containing [customer_name, Subscription_type]

Exercise 2: Enhancing the Customer Directory Management System

Add a new function named *Search_Customer* to the existing Customer Directory Management System. This function should:

1. **Function Purpose:**
   A. Search for a customer by their name within the directory.
2. **Function Details:**
   A. The function should take the customer_name as input.
   B. If the customer is found in the directory, display their information.
   C. If the customer is not found, print a message indicating that the customer is not in the directory.

Exercise 3: Enhancing the Customer Directory Management System

Add a new function named *Search_subscription* to the existing Customer Directory Management System. This function should:

1. **Function Purpose:**
   A. Search for customers based on their subscription type.

2. **Function Details:**
   A. The function should take the Subscription_type ("prepaid" or "postpaid") as input.
   B. Display the information of all customers who have the specified subscription type.
   C. If no customers have the given subscription type, print appropriate message.