BAHRIA UNIVERSITY (KARACHI CAMPUS)

CSC 221 - Data Structures & Algorithms - Assignment 3	
CLO-4	Deadline: 1ˢᵗ February , 22
Class: BSE-3A/B	Total Marks 10

1. A database contains information about all trains leaving the Washington Union station on Monday. Each train is assigned a departure time, a destination, and a unique 8-digit train ID number. Examine which data structures you can use to solve each of the following scenarios.

   a) The schedule contains 200 trains with 52 destinations.
   b) Trains with the same destination should further be sorted by departure time.

   Depending on scenario, you may need to either (a) use multiple data structures or (b) modify the implementation of some data structure. Justify your choice.

2. You are playing a game. The game consists of 10 questions which helps to guess the name of famous people. The rules of this game are:

   - Your opponent will think of the name of a famous person
   - You ask a question with Yes or No
   - Your opponent gives you the answer to that question
   - Based on your opponent answer, you will ask another yes-or-no question, so on
   - You cannot ask more than 10 yes-or-no questions
   - If you guess the name of the person, you win; otherwise, you lose.

   Compare which data structure can help you to implement the above strategy.