

PART-B

- Q1.** Write a Java program to open a text document file and to do the following: **[3X3]**
- a) count the occurrences of each word in a large text file
 - b) Allow the user to type a word and report how many times that word appeared in the document.
 - c) Report all words that appeared in the document at least 500 times, in alphabetical order.

Hint: Use Collection framework to simplify your task.

- Q2.** Design and write an application program using Java that plays “guess the number” as follows: **[7]**

Your application chooses the number to be guessed by selecting an integer at random in the range 1–1000. The application then displays the following in a label: I have a number between 0 and 1000. Can you guess my number? Please enter your first guess.

A **JTextField** should be used to input the guess. As each guess is input, the background color should change to either **red** or **blue**. Red indicates that the user is getting “close to the number,” and blue, “far from the number.” A **JLabel** should display either “**Too High**” or “**Too Low**” to help the user zero in. When the user gets the correct answer, “Correct!” should be displayed, and the **JTextField** used for input should be changed to be **uneditable**. A **JButton** should be provided to allow the user to play the game again. When the **JButton** is clicked, a new random number should be generated and the input **JTextField** changed to be editable.

Help: *nextInt(int n)* method of *Random* class generates a number between 0 and n-1

Methods of *JTextField*: *setBackground(Color)*, *setEditable(Boolean)*

Methods of *JLabel*: *setText(String)*

- Q3.** A **Phone Directory** holds a list of names and associated phone numbers. Write a phone directory program that keeps its list of names and phone numbers in a database. The user of the program should be able to look up a name in the directory to find the associated phone number. The user should also be able to make changes to the data in the directory. Every time the program starts up, it should read the data from the database and keep in some efficient data structure (Collection Framework). Before the program terminates, if the data has been changed while the program was running, the database should be updated with the new data. Design a proper user interface using either **Swings or Servlet/JSP**. **[7]**

- Q4.** Explain the following with suitable programming examples **[3X3]**

- a) Multithreading in Java
- b) Servlet and its life cycle