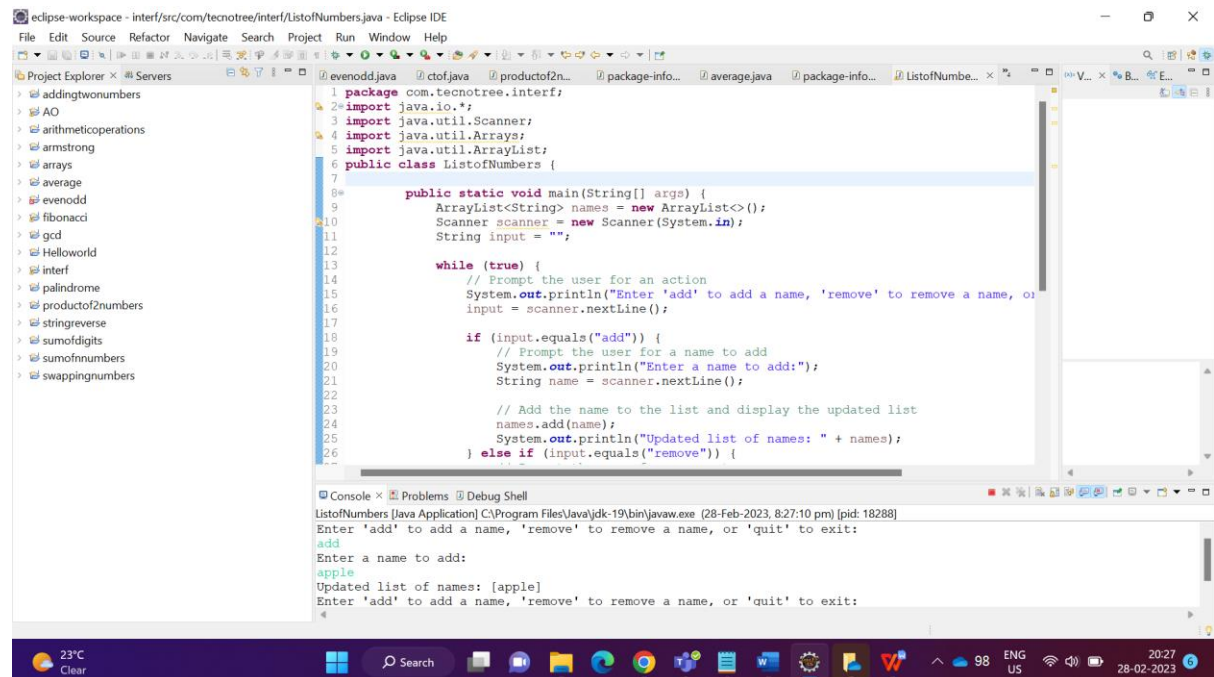


## Java Assignment -6

### Topic: The Collections framework in Java

1. Create a program that uses an ArrayList to store a list of names. The program should allow the user to add and remove names from the list, and should display the current list of names after each modification.



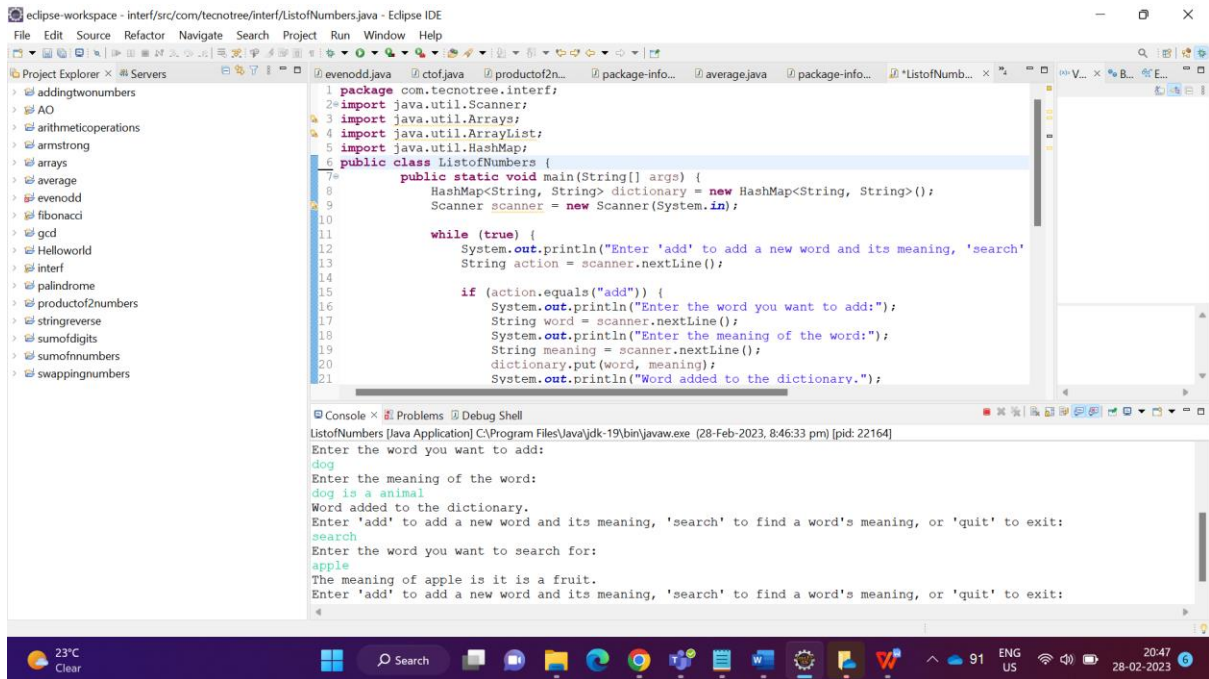
```
1 package com.tecnotee.interf;
2 import java.io.*;
3 import java.util.Scanner;
4 import java.util.Arrays;
5 import java.util.ArrayList;
6 public class ListofNumbers {
7
8     public static void main(String[] args) {
9         ArrayList<String> names = new ArrayList<>();
10        Scanner scanner = new Scanner(System.in);
11        String input = "";
12
13        while (true) {
14            // Prompt the user for an action
15            System.out.println("Enter 'add' to add a name, 'remove' to remove a name, or 'quit' to exit:");
16            input = scanner.nextLine();
17
18            if (input.equals("add")) {
19                // Prompt the user for a name to add
20                System.out.println("Enter a name to add:");
21                String name = scanner.nextLine();
22
23                // Add the name to the list and display the updated list
24                names.add(name);
25                System.out.println("Updated list of names: " + names);
26            } else if (input.equals("remove")) {
27                // Prompt the user for a name to remove
28                System.out.println("Enter a name to remove:");
29                String name = scanner.nextLine();
30
31                // Remove the name from the list and display the updated list
32                names.remove(name);
33                System.out.println("Updated list of names: " + names);
34            } else if (input.equals("quit")) {
35                break;
36            }
37        }
38    }
39 }
```

Console Output:

```
ListofNumbers [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 8:27:10 pm) [pid: 18288]
Enter 'add' to add a name, 'remove' to remove a name, or 'quit' to exit:
add
Enter a name to add:
apple
Updated list of names: [apple]
Enter 'add' to add a name, 'remove' to remove a name, or 'quit' to exit:
quit
```

CODESHARE LINK: <https://codeshare.io/gL9xBR>

2. Create a program that uses a HashMap to store a dictionary of words and their meanings. The program should allow the user to add new words and meanings, and should display the meaning of a word when the user enters the word.



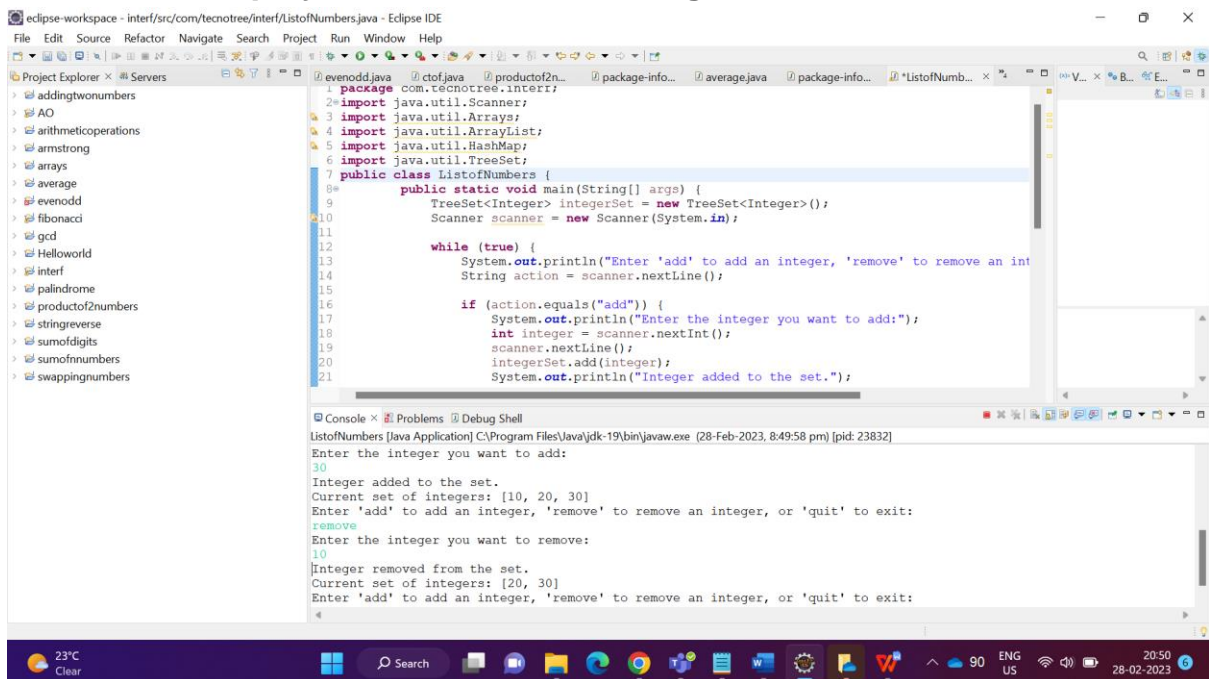
```
1 package com.tecnotee.interf;
2 import java.util.Scanner;
3 import java.util.ArrayList;
4 import java.util.HashMap;
5 import java.util.Scanner;
6 public class ListofNumbers {
7     public static void main(String[] args) {
8         HashMap<String, String> dictionary = new HashMap<String, String>();
9         Scanner scanner = new Scanner(System.in);
10
11         while (true) {
12             System.out.println("Enter 'add' to add a new word and its meaning, 'search' to find a word's meaning, or 'quit' to exit:");
13             String action = scanner.nextLine();
14
15             if (action.equals("add")) {
16                 System.out.println("Enter the word you want to add:");
17                 String word = scanner.nextLine();
18                 System.out.println("Enter the meaning of the word:");
19                 String meaning = scanner.nextLine();
20                 dictionary.put(word, meaning);
21                 System.out.println("Word added to the dictionary.");
22             }
23         }
24     }
25 }
```

Console Output:

```
ListofNumbers [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 8:46:33 pm) [pid: 22164]
Enter the word you want to add:
dog
Enter the meaning of the word:
dog is a animal
Word added to the dictionary.
Enter 'add' to add a new word and its meaning, 'search' to find a word's meaning, or 'quit' to exit:
search
Enter the word you want to search for:
apple
The meaning of apple is it is a fruit.
Enter 'add' to add a new word and its meaning, 'search' to find a word's meaning, or 'quit' to exit:
```

CODESHARE LINK: <https://codeshare.io/78mLNj>

**3.Create a program that uses a TreeSet to store a list of integers. The program should allow the user to add and remove integers from the set, and should display the current set of integers after each modification.**



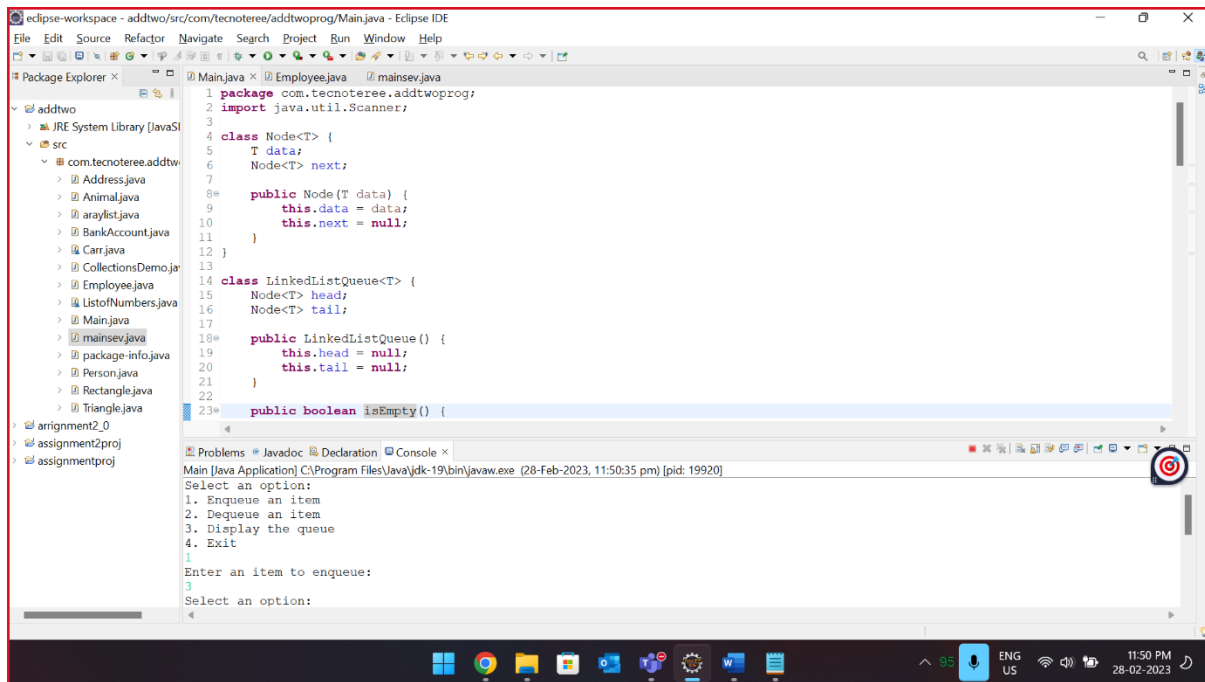
```
1 package com.tecnotee.interf;
2 import java.util.Scanner;
3 import java.util.ArrayList;
4 import java.util.HashMap;
5 import java.util.Scanner;
6 import java.util.TreeSet;
7 public class ListofNumbers {
8     public static void main(String[] args) {
9         TreeSet<Integer> integerSet = new TreeSet<Integer>();
10        Scanner scanner = new Scanner(System.in);
11
12        while (true) {
13            System.out.println("Enter 'add' to add an integer, 'remove' to remove an integer, or 'quit' to exit:");
14            String action = scanner.nextLine();
15
16            if (action.equals("add")) {
17                System.out.println("Enter the integer you want to add:");
18                int integer = scanner.nextInt();
19                scanner.nextLine();
20                integerSet.add(integer);
21                System.out.println("Integer added to the set.");
22            }
23        }
24    }
25 }
```

Console Output:

```
ListofNumbers [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 8:49:58 pm) [pid: 23832]
Enter the integer you want to add:
30
Integer added to the set.
Current set of integers: [10, 20, 30]
Enter 'add' to add an integer, 'remove' to remove an integer, or 'quit' to exit:
remove
Enter the integer you want to remove:
10
Integer removed from the set.
Current set of integers: [20, 30]
Enter 'add' to add an integer, 'remove' to remove an integer, or 'quit' to exit:
```

CODESHARE LINK: <https://codeshare.io/ZJEWNV>

**4.Create a program that uses a LinkedList to implement a queue. The program should allow the user to add and remove items from the queue, and should display the current contents of the queue after each modification.**

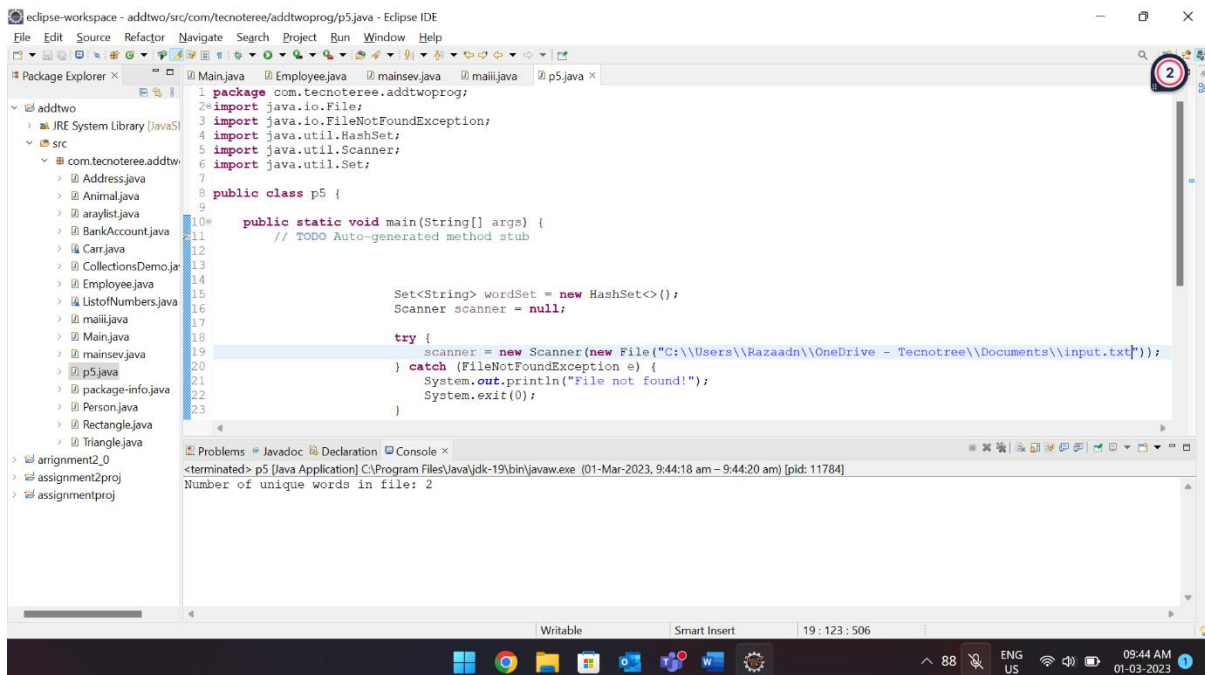


```
1 package com.tecnotree.addtwo;
2 import java.util.Scanner;
3
4 class Node<T> {
5     T data;
6     Node<T> next;
7
8     public Node(T data) {
9         this.data = data;
10        this.next = null;
11    }
12 }
13
14 class LinkedListQueue<T> {
15     Node<T> head;
16     Node<T> tail;
17
18     public LinkedListQueue() {
19         this.head = null;
20         this.tail = null;
21     }
22
23     public boolean isEmpty() {
```

Problems Javadoc Declaration Console  
Main [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (28-Feb-2023, 11:50:35 pm) [pid: 19920]  
Select an option:  
1. Enqueue an item  
2. Dequeue an item  
3. Display the queue  
4. Exit  
1  
Enter an item to enqueue:  
3  
Select an option:  
3

CODESHARE LINK: <https://codeshare.io/9OLxKX>

**5.Create a program that uses a HashSet to store a set of strings. The program should read in a text file, and should add each word in the file to the set of strings. After all words have been added, the program should display the number of unique words in the file.**



```
1 package com.tecnotree.addtwo;
2 import java.io.File;
3 import java.io.FileNotFoundException;
4 import java.util.HashSet;
5 import java.util.Scanner;
6 import java.util.Set;
7
8 public class p5 {
9
10     public static void main(String[] args) {
11         // TODO Auto-generated method stub
12
13         Set<String> wordSet = new HashSet<>();
14         Scanner scanner = null;
15
16         try {
17             scanner = new Scanner(new File("C:\\Users\\Razaadn\\OneDrive - Tecnoree\\Documents\\input.txt"));
18         } catch (FileNotFoundException e) {
19             System.out.println("File not found!");
20             System.exit(0);
21         }
22     }
23 }
```

Problems Javadoc Declaration Console  
<terminated> p5 [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (01-Mar-2023, 9:44:18 am - 9:44:20 am) [pid: 11784]  
Number of unique words in file: 2

CODESHARE LINK: <https://codeshare.io/OdE0l7>

