

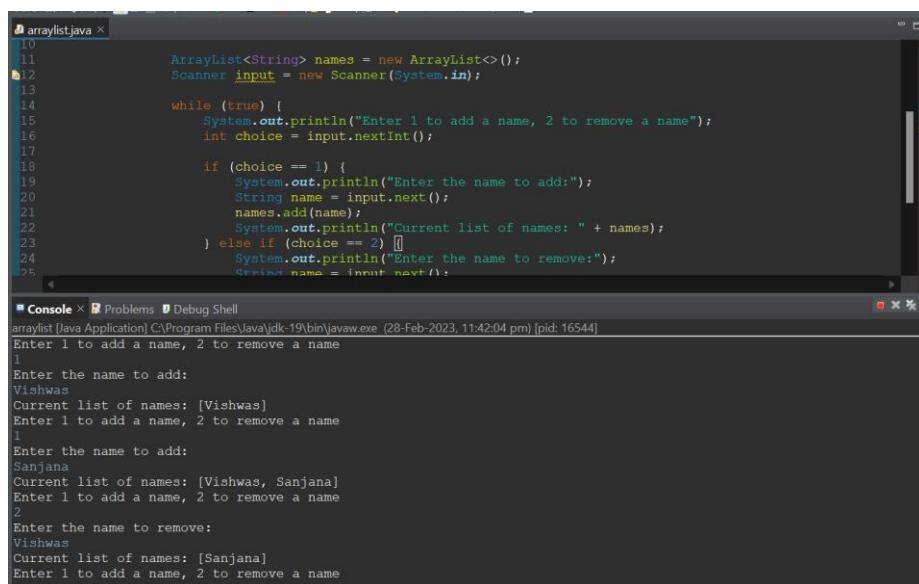
# Java Assignment – 6

Vishwas Cp

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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.

<https://codeshare.io/9OLxZ0>

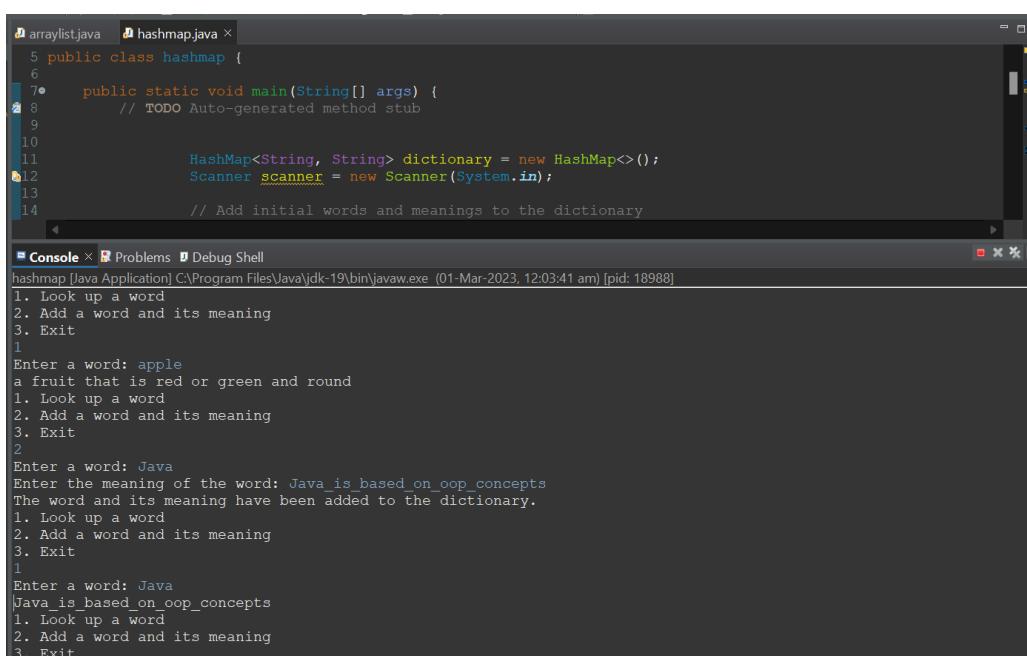


```
arraylist.java
10
11     ArrayList<String> names = new ArrayList<>();
12     Scanner input = new Scanner(System.in);
13
14     while (true) {
15         System.out.println("Enter 1 to add a name, 2 to remove a name");
16         int choice = input.nextInt();
17
18         if (choice == 1) {
19             System.out.print("Enter the name to add:");
20             String name = input.next();
21             names.add(name);
22             System.out.print("Current list of names: " + names);
23         } else if (choice == 2) {
24             System.out.print("Enter the name to remove:");
25             String name = input.next();
}
}
}

Console x Problems Debug Shell
arraylist [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe [28-Feb-2023, 11:42:04 pm] [pid: 16544]
Enter 1 to add a name, 2 to remove a name
1
Enter the name to add:
Vishwas
Current list of names: [Vishwas]
Enter 1 to add a name, 2 to remove a name
1
Enter the name to add:
Sanjana
Current list of names: [Vishwas, Sanjana]
Enter 1 to add a name, 2 to remove a name
2
Enter the name to remove:
Vishwas
Current list of names: [Sanjana]
Enter 1 to add a name, 2 to remove a name
```

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.

<https://codeshare.io/MNEznQ>



```
arraylist.java hashmap.java
5 public class hashmap {
6
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9
10
11         HashMap<String, String> dictionary = new HashMap<>();
12         Scanner scanner = new Scanner(System.in);
13
14         // Add initial words and meanings to the dictionary
}
}

Console x Problems Debug Shell
hashmap [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe [01-Mar-2023, 12:03:41 am] [pid: 18988]
1. Look up a word
2. Add a word and its meaning
3. Exit
1
Enter a word: apple
a fruit that is red or green and round
1. Look up a word
2. Add a word and its meaning
3. Exit
2
Enter a word: Java
Enter the meaning of the word: Java_is_based_on_oop_concepts
The word and its meaning have been added to the dictionary.
1. Look up a word
2. Add a word and its meaning
3. Exit
1
Enter a word: Java
Java_is_based_on_oop_concepts
1. Look up a word
2. Add a word and its meaning
3. Exit
```

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.

<https://codeshare.io/9OLxxX>

The screenshot shows an IDE interface with a code editor and a terminal window.

**Code Editor:**

```
treerset.java x
4
5 public class treeset {
6
7•   public static void main(String[] args) {
8     // TODO Auto-generated method stub
9
10
11        // create a new TreeSet object to store the set of integers
12        TreeSet<Integer> intSet = new TreeSet<Integer>();
13
14        // create a new Scanner object to read input from the user
```

**Console Tab:**

Console x Problems Debug Shell

treeset [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (01-Mar-2023, 12:08:14 am) [pid: 9392]

```
1. Add an integer
2. Remove an integer
3. Display the set
4. Exit
Enter your choice:
1
Enter an integer to add:
10
10 added to the set.
Welcome to the integer set!
1. Add an integer
2. Remove an integer
3. Display the set
4. Exit
Enter your choice:
3
Current set: [10]
Welcome to the integer set!
1. Add an integer
2. Remove an integer
3. Display the set
4. Exit
```

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.

<https://codeshare.io/78m33k>

The screenshot shows an IDE interface with two tabs: "linkedlist.java" and "Console".

**linkedlist.java:**

```
1 package linkedlist;
2
3 import java.util.Scanner;
4
5 public class linkedlist {
6
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9
10
11         Queue<String> queue = new LinkedList<>();
12         Scanner scanner = new Scanner(System.in);
13
14         while (true) {
15
16             System.out.println("Enter 1 to add item to queue, 2 to remove item from queue, or 3 to exit:");
17
18             int choice = scanner.nextInt();
19
20             if (choice == 1) {
21                 System.out.print("Enter item to add to queue: ");
22                 String item = scanner.nextLine();
23                 queue.add(item);
24                 System.out.println("Current contents of queue: " + queue);
25             } else if (choice == 2) {
26                 if (queue.isEmpty()) {
27                     System.out.println("Queue is empty");
28                 } else {
29                     System.out.println("Removed item from queue: " + queue.remove());
30                     System.out.println("Current contents of queue: " + queue);
31                 }
32             } else if (choice == 3) {
33                 System.out.println("Exiting program");
34                 break;
35             } else {
36                 System.out.println("Invalid choice");
37             }
38         }
39     }
40 }
```

**Console:**

```
linkedlist [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (01-Mar-2023, 12:14:50 am) [pid: 21792]
Enter 1 to add item to queue, 2 to remove item from queue, or 3 to exit:
1
Enter item to add to queue:
10
Current contents of queue: [10]
Enter 1 to add item to queue, 2 to remove item from queue, or 3 to exit:
1
Enter item to add to queue:
30
Current contents of queue: [10, 30]
Enter 1 to add item to queue, 2 to remove item from queue, or 3 to exit:
1
Enter item to add to queue:
20
Current contents of queue: [10, 30, 20]
Enter 1 to add item to queue, 2 to remove item from queue, or 3 to exit:
2
Removed item from queue: 10
Current contents of queue: [30, 20]
Enter 1 to add item to queue, 2 to remove item from queue, or 3 to exit:
3
Exiting program
```

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.

<https://codeshare.io/dwQWyy>

The screenshot shows a Java IDE interface with two tabs open: 'linkedlist.java' and 'hashset.java'. The 'hashset.java' tab is active, displaying the following code:

```
1 package assignment6;
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 hashset {
9
10    public static void main(String[] args) {
11        // TODO Auto-generated method stub
12
13
14        Set<String> wordSet = new HashSet<>();
15        Scanner scanner = null;
16
17        try {
18            scanner = new Scanner(new File("C:\\\\Users\\\\chandvs\\\\OneDrive - Tecnotree\\\\Documents\\\\Assignment 6\\\\file.txt"));
19        } catch (FileNotFoundException e) {
20            System.out.println("File not found!");
21            System.exit(0);
22        }
23
24        while (scanner.hasNext()) {
25            String word = scanner.next().toLowerCase();
26            wordSet.add(word);
27        }
28
29        scanner.close();
30    }
31}
```

The 'Console' tab at the bottom shows the output of the program:

```
<terminated> hashset [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (01-Mar-2023, 12:20:20 am - 12:20:21 am) [pid: 6496]
Number of unique words in file: 4
```