**Assignment – 8**

1. **Let's create a program that calculates the average of different ages:**
2. *import* java**.**util**.**Scanner**;**
3. *public* class **AverageAge** {
4. *public* *static* *void* main(String[] **args**) {
5. Scanner scanner **=** **new** Scanner(System**.***in*)**;**
7. System**.***out***.**print("Enter the number of ages: ")**;**
8. *int* n **=** scanner**.**nextInt()**;**
9. *int*[] ages **=** **new** *int*[n]**;**
10. *int* sum **=** 0**;**
12. **for** (*int* i **=** 0**;** i **<** n**;** i**++**) {
13. System**.***out***.**print("Enter age " **+** (i **+** 1) **+** ": ")**;**
14. ages[i] **=** scanner**.**nextInt()**;**
15. sum **+=** ages[i]**;**
16. }
18. *double* average **=** (*double*) sum **/** n**;**
19. System**.***out***.**println("The average age is: " **+** average)**;**
20. }
21. }

**Output:**

**A computer screen with text on it

Description automatically generated**

1. **Java Program to copy all elements of one array into another array.**
2. *import* java**.**util**.**Arrays**;**
3. *public* class **ArrayCopy** {
4. *public* *static* *void* main(String[] **args**) {
5. *int*[] originalArray **=** {1**,** 2**,** 3**,** 4**,** 5}**;**
6. *int*[] copiedArray **=** **new** *int*[originalArray**.***length*]**;**
8. **for** (*int* i **=** 0**;** i **<** originalArray**.***length***;** i**++**) {
9. copiedArray[i] **=** originalArray[i]**;**
10. }
12. System**.***out***.**println("Original Array: " **+** Arrays**.**toString(originalArray))**;**
13. System**.***out***.**println("Copied Array: " **+** Arrays**.**toString(copiedArray))**;**
14. }
15. }

**Output:**

**A computer screen shot of a computer code

Description automatically generated**

1. **Java Program to Find Largest Number in an array.**
2. *public* class **LargestNumber** {
3. *public* *static* *void* main(String[] **args**) {
4. *int*[] numbers **=** {5**,** 7**,** 2**,** 8**,** 1**,** 9**,** 3}**;**
5. *int* largest **=** numbers[0]**;**
7. **for** (*int* i **=** 1**;** i **<** numbers**.***length***;** i**++**) {
8. **if** (numbers[i] **>** largest) {
9. largest **=** numbers[i]**;**
10. }
11. }
13. System**.***out***.**println("The largest number is: " **+** largest)**;**
14. }
15. }

**Output:**

**A black screen with text on it

Description automatically generated**

1. **Java Program to Remove Duplicate Element in an array.**
2. *import* java**.**util**.**Arrays**;**
3. *public* class **RemoveDuplicates** {
4. *public* *static* *void* main(String[] **args**) {
5. *int*[] array **=** {1**,** 2**,** 2**,** 3**,** 4**,** 4**,** 5}**;**
6. *int*[] result **=** Arrays**.**stream(array)**.**distinct()**.**toArray()**;**
8. System**.***out***.**println("Array without duplicates: " **+** Arrays**.**toString(result))**;**
9. }
10. }

**Output:**

**A black screen with orange and white text

Description automatically generated**

1. **Java Program to Find second Largest Number in an array.**
2. *public* class **SecondLargest** {
3. *public* *static* *void* main(String[] **args**) {
4. *int*[] numbers **=** {5**,** 7**,** 2**,** 8**,** 1**,** 9**,** 3}**;**
6. **if** (numbers**.***length* **<** 2) {
7. System**.***out***.**println("Array should have at least two elements.")**;**
8. **return;**
9. }
11. *int* firstLargest**,** secondLargest**;**
12. **if** (numbers[0] **>** numbers[1]) {
13. firstLargest **=** numbers[0]**;**
14. secondLargest **=** numbers[1]**;**
15. } **else** {
16. firstLargest **=** numbers[1]**;**
17. secondLargest **=** numbers[0]**;**
18. }
20. **for** (*int* i **=** 2**;** i **<** numbers**.***length***;** i**++**) {
21. **if** (numbers[i] **>** firstLargest) {
22. secondLargest **=** firstLargest**;**
23. firstLargest **=** numbers[i]**;**
24. } **else** **if** (numbers[i] **>** secondLargest **&&** numbers[i] **!=** firstLargest) {
25. secondLargest **=** numbers[i]**;**
26. }
27. }
29. System**.***out***.**println("The second largest number is: " **+** secondLargest)**;**
30. }
31. }

**Output:**

**A screenshot of a computer screen

Description automatically generated**