**Assignment 7**

**1. Print Characters in Descending Order:**

import java.util.Arrays;

public class DescendingOrder {

public static void main(String[] args) {

char[] chars = {'a', 'd', 'x', 't', 'c', 'm'};

// Sort the array in descending order

Arrays.sort(chars);

for (int i = chars.length - 1; i >= 0; i--) {

System.out.print(chars[i] + " ");

}

}

}

**2. Print Even Index Characters:**

public class EvenIndexCharacters {

public static void main(String[] args) {

char[] chars = {'a', 'b', 'c', 'd', 'e', 'f'};

for (int i = 0; i < chars.length; i += 2) {

System.out.print(chars[i] + " ");

}

}

}

**3. Print Odd Index Characters:**

public class OddIndexCharacters {

public static void main(String[] args) {

char[] chars = {'a', 'b', 'c', 'd', 'e', 'f'};

for (int i = 1; i < chars.length; i += 2) {

System.out.print(chars[i] + " ");

}

}

}

**4. Sum of Even Index Characters and Their ASCII Values:**

public class SumEvenIndexChars {

public static void main(String[] args) {

char[] chars = {'a', 'b', 'c', 'd', 'e', 'f'};

int sum = 0;

for (int i = 0; i < chars.length; i += 2) {

sum += chars[i]; // Add the ASCII value

System.out.print(chars[i] + " ");

}

System.out.println("\nSum of even index characters: " + sum);

}

}

**5. Merge Two Character Arrays:**

public class MergeArrays {

public static void main(String[] args) {

char[] arr1 = {'a', 'b', 'c', 'd', 'e', 'f'};

char[] arr2 = {'g', 'h', 'i'};

char[] mergedArray = new char[arr1.length + arr2.length];

System.arraycopy(arr1, 0, mergedArray, 0, arr1.length);

System.arraycopy(arr2, 0, mergedArray, arr1.length, arr2.length);

System.out.println(Arrays.toString(mergedArray));

}

}

**6. Insert Element at the Beginning:**

public class InsertAtBeginning {

public static void main(String[] args) {

char[] chars = {'a', 'b', 'c', 'd', 'e', 'f'};

char newChar = 'z';

char[] newArray = new char[chars.length + 1];

newArray[0] = newChar;

System.arraycopy(chars, 0, newArray, 1, chars.length);

System.out.println(Arrays.toString(newArray));

}

}

**7. Merge Two Arrays Without Duplicates:**

import java.util.HashSet;

import java.util.Set;

public class MergeWithoutDuplicates {

public static void main(String[] args) {

char[] arr1 = {'a', 'b', 'c', 'd', 'f'};

char[] arr2 = {'a', 'd', 'x', 't', 'c', 'm'};

Set<Character> set = new HashSet<>();

for (char c : arr1) {

set.add(c);

}

for (char c : arr2) {

set.add(c);

}

char[] mergedArray = new char[set.size()];

int index = 0;

for (char c : set) {

mergedArray[index++] = c;

}

System.out.println(Arrays.toString(mergedArray));

}

}

**8. Insert Element at Index 3:**

public class InsertAtIndex {

public static void main(String[] args) {

char[] chars = {'a', 'b', 'c', 'd', 'e', 'f'};

char newChar = 'z';

int index = 3;

char[] newArray = new char[chars.length + 1];

System.arraycopy(chars, 0, newArray, 0, index);

newArray[index] = newChar;

System.arraycopy(chars, index, newArray, index + 1, chars.length - index);

System.out.println(Arrays.toString(newArray));

}

}