**Assignment Week 2 Strings**

**Program 1: Write a program that computes your initials from your full name and displays them**

import java.util.Scanner;

public class Program1\_NameInitials {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.println("Enter your name:");

        String s = scanner.nextLine();

        String[] name = s.split(" ");

        String nameInitials = "";

        for (String n : name) {

            nameInitials += n.charAt(0);

        }

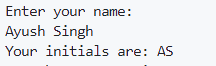
        System.out.println("Your initials are: " + nameInitials);

        scanner.close();

    }

}

**Output**



**Program 2: Show two ways to concatenate the following two strings together to get the string “Incture Tech"**

**• String str1 = “Incture”**

**• String str2 = “Tech"**

public class Program2\_Concatenate2Strings {

    public static void main(String[] args) {

        String str1 = "Incture", str2 = "Tech";

        String str3 = str1 + str2;

        System.out.println("Using '+': " + str3);

        String str4 = str1.concat(str2);

        System.out.println("Using concat: " + str4);

    }

}

**Output-**

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**Program 3: String sam = "Did Sam see bees? Sam did.";**

**Q: What is the value displayed by the expression sam.length()?**

**Q: What is the value returned by the method call sam.charAt(12)?**

**Q: Write an expression that refers to the letter b in the string referred to by sam.**

public class Program3\_StringFuncs {

    public static void main(String[] args) {

        String sam = "Did Sam see bees? Sam did.";

        System.out.println("The length of the string is: " + sam.length());

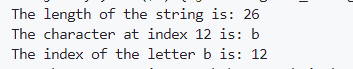
        System.out.println("The character at index 12 is: " + sam.charAt(12));

        System.out.println("The index of the letter b is: " + sam.indexOf("b"));

    }

}

**Output-**

****

**Program 4: Write a small program to find if a string is palindrome.e.g. Amma, 1221**

import java.util.Scanner;

public class Program4\_PalindromeString {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.println("Enter a string: ");

        String string = scanner.nextLine();

        scanner.close();

        if (isPalindrome(string)) {

            System.out.println(string + " is a palindrome");

        } else {

            System.out.println(string + " is not a palindrome");

        }

    }

    private static boolean isPalindrome(String string) {

        int start = 0, end = string.length() - 1;

        while (start < end) {

            if (string.charAt(start) != string.charAt(end)) {

                return false;

            }

            start++;

            end--;

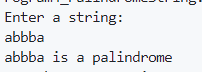
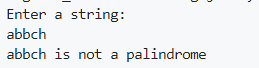
        }

        return true;

    }

}

**Output-**

** **

**Program 5: Print duplicate characters from a string**

import java.util.Scanner;

import java.util.HashMap;

import java.util.Map;

public class Program5\_PrintDuplicateCharacters {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.println("Enter a string: ");

        String string = scanner.nextLine();

        scanner.close();

        // print duplicate characters in the string

        printDuplicateCharacters(string);

    }

    private static void printDuplicateCharacters(String string) {

        // using hashmap, print duplicate characters

        HashMap<Character, Integer> map = new HashMap<>();

        int n = string.length();

        for (int i = 0; i < n; i++) {

            char ch = string.charAt(i);

            map.put(ch, map.getOrDefault(ch, 0) + 1);

        }

        System.out.println("Duplicate characters are: ");

        for (Map.Entry<Character, Integer> entry : map.entrySet()) {

            if (entry.getValue() > 1) {

                System.out.print(entry.getKey() + " ");

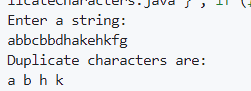
            }

        }

    }

}

**Output-**

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