SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

FACULTY OF ENGINEERING AND TECHNOLOGY

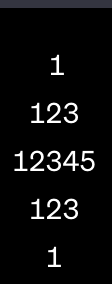
SCHOOL OF COMPUTING

DEPARTMENT OF COMPUTATIONAL INTELLIGENCE

**21CSC203P ADVANCED PROGRAMMING PRACTICE**

**Week 10 – Tutorial Assignment**

**PYTHON PROGRAM USING CONTROL STRUCTURES AND ARRAYS**

1. Implement a python program to find the first largest and second largest numbers in an Array. Note: should not use any built-in sorting functions or libraries.
2. Write a Python program to calculate the sum of even numbers and the sum of odd numbers in an array.
3. Write a python program to count the Occurrences of a Specific Element in an Array.
4. Write a Python program that takes a sentence as input and identifies and prints all the palindromic words in the sentence. Use an array to store the palindromic words.
5. Write a Python program that takes a list of numbers and removes all duplicates from the list, preserving the original order of elements.
6. Write a Python program that performs matrix multiplication. Ask the user to input two matrices as lists of lists (2D arrays) and then multiply them if possible. Make sure to check if the matrices are compatible for multiplication and handle errors gracefully.
7. Write a python program to print diamond number pattern using Nested Loops.
8. Write a Python program that simulates a simple guessing game. Generate a random number and have the user guess it. Provide hints like "too high" or "too low" until they guess correctly.
9. Write a Python program that checks the strength of a password entered by a user. The program should assess the password based on criteria like length, use of uppercase and lowercase letters, digits, and special characters. Use control structures and arrays to provide a detailed evaluation.
10. Write a Python program that generates the Fibonacci sequence up to a specified number of terms using a loop and stores it in an array.

**HACKERRANK**

<https://www.hackerrank.com/challenges/iterables-and-iterators/problem?isFullScreen=true>

<https://www.hackerrank.com/challenges/compress-the-string/problem?isFullScreen=true>

<https://www.hackerrank.com/challenges/validating-credit-card-number/problem?isFullScreen=true>