**SCHOOL OF ELECTRONICS ENGINEERING**

**Digital Assignment-2 (Winter 2024-25)**

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| **Programme: B.Tech**<br>**Course: BCSE103E, Computer Programming:Java**<br>**Faculty: Dr. Tanmaya Kumar Das (Emp ID: 19523)** | **Marks: 10 marks**<br>**Due Date: 28.02.25** |

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| 1. | Write a Java program using nested loops that display the following pattern.<br>  |
| 2. | Write a program to print the following pattern using nested loops:<br>  |
| 3. | Write a Java program to find the second largest element in an array. Create the array with user input. |
| 4. | Write a Java program to reverse a given string without using built-in functions.<br>**Note: With user input enter the string.** |
| 5. | Write a Java program to count the occurrence of each character in a given string.<br>**Example: "apple" → a:1, p:2, l:1, e:1**<br>**Note: With user input enter the string.** |
| 6. | Write a Java program to find the transpose of a 2D matrix.<br>**Note: With user input create the 2D matrix.** |
| 7. | Write a Java program to check if two strings are anagrams (contain the same characters in a different order).<br>**Example: "listen" and "silent" → Anagram**<br>**Note: With user input enter the strings.** |
| 8. | Write a Java program to sort an array in ascending order using nested loops<br>**Note: Create the array with user input** |
| 9. | Write a Java program to find duplicate elements in an array.<br>**Note: Create the array with user input** |
| 10. | Write a Java program to find all pairs in an array that sum up to a given target value.<br>**Example: Array = [1, 4, 6, 2, 5, 3], Target = 7**<br>**Output: (1,6), (4,3), (2,5)**<br>**Note: Create the array with user input** |
| 11. | Write a Java program to check if a square matrix is symmetric.<br>A symmetric matrix is one where matrix[i][j] == matrix[j][i].<br>**Note: With user input create the matrix.** |