



# Aror University of Art, Architecture, Design & Heritage Sukkur.

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Department of Artificial Intelligence and Multimedia Gaming

Object-Oriented Programming(Spring 2025)

## LAB No. 3

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Lab Exercises:

- 1. Write Java code to generate prime numbers in a given range**
- 2. Write a Java program to check whether a string is Palindrome or not (Hint: use `string.charAt()` method)**
- 3. Create a matrix like shown below:**  
12 13 15 16  
11 110 121 17  
17 18 100 21
  - a. Divide each even number from the matrix by 2 and store the updated value in the same matrix.
  - b. Now use any loop to iterate over the matrix and display the Odd Numbers from the matrix.
  - c. Use for loop to do the sum of updated even numbers from the matrix
- 4. Write a Java program to do the following:**
  - a. Populate an array having size 10 using a do while loop with the following sequence:  
1, 4, 9, 16, 25, 36, 49, 64, 81, 0.
  - b. Now use a while loop to do the sum of odd numbers from this array and skip the even numbers.
  - c. Break the loop as soon as 81 is encountered.

**5. Design a simple seat reservation system for a theatre, the Algorithm for the program is given below:**

- a. Create theatre structure by determining the number of rows and a number of columns, rows and columns will determine the total number of seats.
- b. Use a do while loop to display the following messages, loop will be terminated when user presses 3:
  - i. Display available seats: 1
  - ii. Reserve a seat: 2
  - iii. Exit: 3
  - iv. Enter your choice:
- c. Now use a switch case statement inside the do while loop
  - i. If user presses 1 then display the available seats, available seats are represented by false and unavailable seats are represented by true.
  - ii. If user presses two, then ask the user row number and column number
  - iii. Check if the seat is not reserved already then reserve the seat, otherwise display seat is already reserved.
  - iv. If row number and column number are out of the range then display invalid range.
- d. Default choice of switch will display invalid choice, if the user provides any number which is out of the given range (1-3)