Q1.Given a string, check whether it is a palindrome (reads the same forwards and backwards). Ignore case

Input: "Madam"

Output:true

Hint for Students:
👉 Use two pointers (left, right) moving from both ends of the string.
👉 Compare characters while moving inward.
👉 If all match → Palindrome. Otherwise, not.

Q2.Given an array of integers, find the second largest element. Assume array length ≥ 2.

Input: [10, 20, 4, 45, 99]

Output: 45

Hint for Students:
👉 Keep track of two variables: first (largest) and second (second largest).
👉 Update them while scanning the array once.
👉 Make sure second does not equal first.

Q3.You are given two sorted arrays. Merge them into a single sorted array.

Input: arr1 = [1,3,5], arr2 = [2,4,6]

Output: [1,2,3,4,5,6]

Hint for Students:
👉 Use two indexes i and j for both arrays.
👉 Compare elements → insert smaller one into result.
👉 Continue until one array is exhausted.
👉 Copy remaining elements.

Q4.Implement a stack data structure using an array. Support push, pop, and peek.

Input (sequence of operations):
push 10
push 20
peek
pop
pop
pop

Output:
20
20
10
Stack Underflow

Hint for Students:
👉 Use an array to store stack elements.
👉 Keep a top pointer for the current position.
👉 On push, increment top and insert.
👉 On pop, return element at top and decrement.
👉 Handle overflow and underflow cases.