**SRM INSTITUTE OF SCIENCE AND TECHNOLOGY, Kattankulathur**





**School of Computing**

**21CSC201J – Data Structures and Algorithms**

**Topic: Advantages and Disadvantages of an Array**

**Activity: Fill in the blanks**

**Advantages of an Array**

**Advantages of Arrays**

1. Arrays allow **direct (random)** access to elements using an index.
2. Arrays store elements in **contiguous** memory locations.
3. Arrays are useful for storing a **fixed** number of similar data types.
4. The size of an array is **fixed** once declared.
5. Arrays make it easy to perform **traversal** operations using loops.
6. Arrays reduce the **overhead** of declaring multiple variables.
7. Memory usage is efficient if the array size is **exactly required**.
8. Arrays provide better performance in terms of **constant-time (O(1))** lookup time.

**Disadvantages of Arrays**

1. The size of an array must be known at **compile** time.
2. Arrays have a **fixed** size, which cannot be changed at runtime.
3. Inserting an element in the middle of an array requires **shifting** other elements.
4. Deleting an element in an array also involves **shifting** elements.
5. Wastage of memory can occur if the declared array size is **too large**.
6. Arrays can only store data of the **same** type.
7. Searching in an unsorted array takes **O(n)** time in the worst case.