■ Java Basic Implementation Workbook

1. Input/Output Practice

- Read an integer, a string (word), and a full sentence. Print them separately.
- Take N integers as input and print their sum.
- Read a line and print the number of words in it.
- Practice difference between sc.next() and sc.nextLine().

2. String Handling

- Convert a string to a char array and print each character.
- Check if two strings are equal using equals() (not ==).
- Extract substring from index 2 to 5 of a string.
- Split a sentence into words using split().
- Reverse a string manually using loop.

3. Array Basics

- Find maximum and minimum element in an array.
- Sort an array using Arrays.sort().
- Check if two arrays are equal using Arrays.equals().
- Copy one array into another using Arrays.copyOf().
- Convert an array into a List using Arrays.asList().

4. Collections Framework Basics

- Create an ArrayList, insert elements, and print them.
- Use HashSet to store unique numbers from an array.
- Use HashMap to store student roll number → name mapping and print them.
- Iterate over a HashMap using entrySet().

5. Loop Variations

- Print array elements using for-each loop.
- Print array elements using normal for loop (with index).
- Find sum of array using for-each loop.
- Find index of a given element using normal for loop.

■ Notes & Tips

- Use sc.next() for single word input, sc.nextLine() for full sentence input.
- Always use equals() to compare strings, never ==.
- Prefer for-each when you don't need index, normal for when you do.
- Arrays utility class (sort, copyOf, equals) saves time in interviews.
- Collections (HashMap, HashSet, ArrayList) are must-know for placements.