Java Cheat Sheet

Java Cheat Sheet: Array and String Manipulation + I/O

1. Input and Output

```java
import java.util.Scanner;

Scanner sc = new Scanner(System.in);


// Integer input
int x = sc.nextInt();


// String input (word)
String s1 = sc.next();


// String input (line)
String s2 = sc.nextLine();


// Array input
int[] arr = new int[n];
for (int i = 0; i < n; i++) arr[i] = sc.nextInt();


// Output
System.out.println("Hello");
System.out.print("Hello");
System.out.printf("Number: %d", 5);
```

2. Arrays

```java
int[] arr = new int[5];
int[] arr2 = {1, 2, 3, 4, 5};
```

```java
// Traversal
for (int i = 0; i < arr.length; i++) System.out.println(arr[i]);
for (int val : arr2) System.out.println(val);


// Sorting
import java.util.Arrays;
Arrays.sort(arr);


// Searching
int idx = Arrays.binarySearch(arr, 3);
```

3. 2D Arrays

```java
int[][] matrix = new int[3][3];


// Input
for (int i = 0; i < 3; i++)
    for (int j = 0; j < 3; j++)
        matrix[i][j] = sc.nextInt();


// Output
for (int i = 0; i < 3; i++) {
    for (int j = 0; j < 3; j++)
        System.out.print(matrix[i][j] + " ");
    System.out.println();
}
```

4. String Handling

```java
String s = "Hello";
String s2 = new String("World");
String result = s + s2;
int len = s.length();
```

```java
char ch = s.charAt(0);

String sub = s.substring(1, 4);

s.equals(s2);

s.equalsIgnoreCase(s2);

s.compareTo(s2);


// StringBuilder

StringBuilder sb = new StringBuilder("Hello");

sb.append(" World");

sb.insert(2, "!!");

sb.delete(1, 3);

String result = sb.toString();
```

5. Utilities

```java
int x = Integer.parseInt("123");

String str = String.valueOf(123);

String[] parts = s.split(" ");

char ch = '5';

int digit = ch - '0';
```