Java Interview Cheat Sheet

# 1. Coding Questions

## 1.1 Find Second Largest in Array

public static int findSecondLargest(int[] arr) {  
 if (arr == null || arr.length < 2) return -1;  
 int first = Integer.MIN\_VALUE, second = Integer.MIN\_VALUE;  
 for (int num : arr) {  
 if (num > first) {  
 second = first;  
 first = num;  
 } else if (num > second && num != first) {  
 second = num;  
 }  
 }  
 return second == Integer.MIN\_VALUE ? -1 : second;  
}

## 1.2 Detect Loop in Linked List

public static boolean hasLoop(Node head) {  
 Node slow = head, fast = head;  
 while (fast != null && fast.next != null) {  
 slow = slow.next;  
 fast = fast.next.next;  
 if (slow == fast) return true;  
 }  
 return false;  
}

## 1.3 Check Duplicate in Array

public static boolean hasDuplicate(int[] arr) {  
 HashSet<Integer> set = new HashSet<>();  
 for (int num : arr) {  
 if (!set.add(num)) return true;  
 }  
 return false;  
}

# 2. Java Interview Topics

Java 8 Features:  
- Lambda Expressions  
- Stream API  
- Optional  
- Method References  
- Default & Static methods in interfaces

hashCode() and equals():  
- Override both in custom objects used in HashMap or HashSet.  
- Ensure consistent equality logic.

Threads and Multithreading:  
- Create threads using Thread class or Runnable interface.  
- Use ExecutorService for pooling.  
- Synchronization for critical sections.

Inter-thread Communication:  
- Use wait(), notify(), notifyAll() within synchronized blocks.  
- Useful for producer-consumer problems.

Spring Boot:  
- @SpringBootApplication for entry point  
- Embedded Tomcat  
- REST APIs with @RestController  
- Auto-configuration with Spring Boot starters.