**Optimal Storage on a tape**

import java.util.\*;

public class OptimalStorageOnTape {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

// Input number of programs

System.out.print("Enter number of programs: ");

int n = sc.nextInt();

int[] programs = new int[n];

// Input lengths of programs

System.out.println("Enter lengths of programs:");

for (int i = 0; i < n; i++) {

programs[i] = sc.nextInt();

}

// Sort programs by length (ascending)

Arrays.sort(programs);

// Calculate retrieval times

int[] retrievalTime = new int[n];

retrievalTime[0] = programs[0];

for (int i = 1; i < n; i++) {

retrievalTime[i] = retrievalTime[i - 1] + programs[i];

}

// Calculate Mean Retrieval Time (MRT)

int total = 0;

for (int time : retrievalTime) {

total += time;

}

double mrt = (double) total / n;

// for printing Output

System.out.println("\nOptimal Program Order (by length): " + Arrays.toString(programs));

System.out.println("Retrieval Times: " + Arrays.toString(retrievalTime));

System.out.printf("Mean Retrieval Time (MRT): %.2f\n", mrt);

}

}