**U19EC046 | OS | LAB 9**

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**//scan.java**

**import java.util.\*;**

**class scan {**

**static int disk\_size = 200;**

**static final Boolean LEFT = false;**

**static final Boolean RIGHT = true;**

**static void SCAN(int arr[], int head, Boolean direction) {**

**int seek\_count = 0;**

**int distance, cur\_track;**

**int size = arr.length;**

**Vector<Integer> left = new Vector<>(), right = new Vector<>();**

**Vector<Integer> seek\_sequence = new Vector<Integer>();**

**if (direction == LEFT)**

**left.add(0);**

**else if (direction == RIGHT)**

**right.add(disk\_size - 1);**

**for (int i = 0; i < size; i++) {**

**if (arr[i] < head)**

**left.add(arr[i]);**

**if (arr[i] > head)**

**right.add(arr[i]);**

**}**

**Collections.sort(left);**

**Collections.sort(right);**

**int run = 2;**

**while (run-- > 0) {**

**if (direction == LEFT) {**

**for (int i = left.size() - 1; i >= 0; i--) {**

**cur\_track = left.get(i);**

**seek\_sequence.add(cur\_track);**

**distance = Math.abs(cur\_track - head);**

**seek\_count += distance;**

**head = cur\_track;**

**}**

***// reached left most position now reverse direction***

**direction = RIGHT;**

**} else if (direction == RIGHT) {**

**for (int i = 0; i < right.size(); i++) {**

**cur\_track = right.get(i);**

**seek\_sequence.add(cur\_track);**

**distance = Math.abs(cur\_track - head);**

**seek\_count += distance;**

**head = cur\_track;**

**}**

***// reached left most position now reverse direction***

**direction = LEFT;**

**}**

**}**

**System.out.print("Total number of seek operations = " + seek\_count + "\n");**

**System.out.print("Seek Sequence is" + "\n");**

**for (int i = 0; i < seek\_sequence.size(); i++) {**

**System.out.print(seek\_sequence.get(i) + "\n");**

**}**

**}**

***// Driver code***

**public static void main(String[] args) {**

**int arr[] = { 55,58,39,18,90,160,150,38,184 };**

**int head = 100;**

***// starting from left***

**SCAN(arr, head, RIGHT);**

**}**

**}**

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**OUTPUT**

