LAB-4

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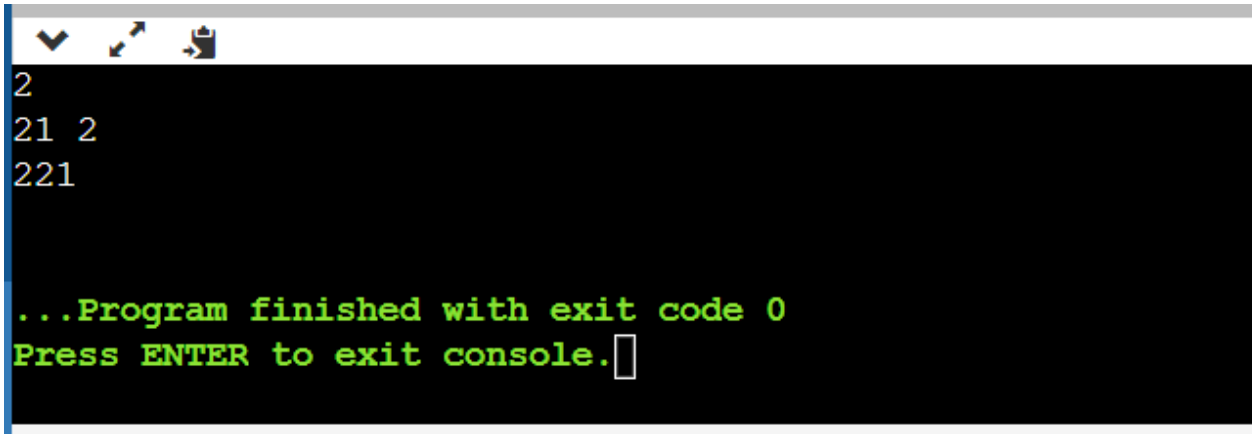
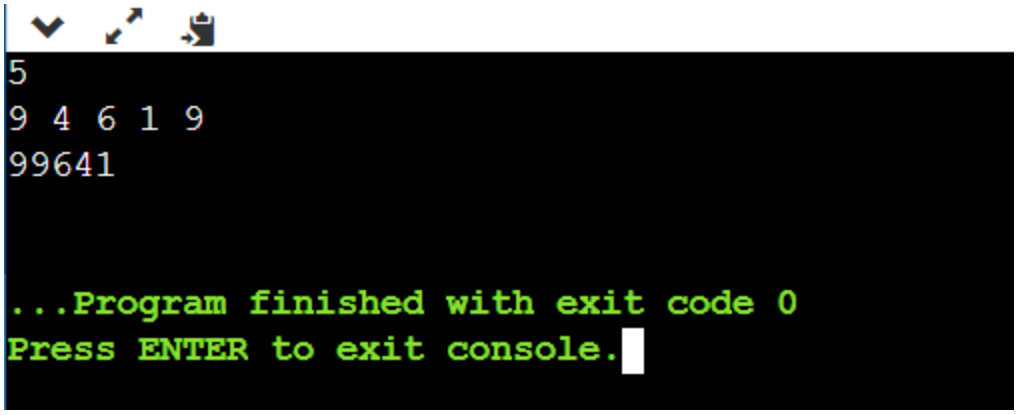
1.Maximum Salary

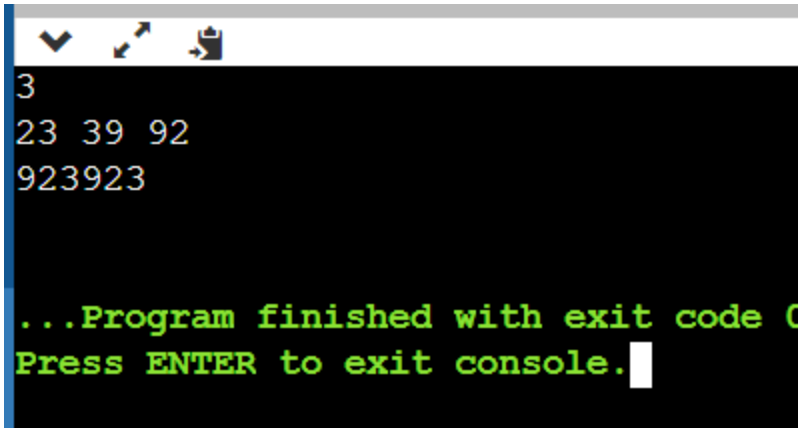
```
import java.util.*;


public class Main {
   private static String largestNumber(String[] salaryParts) {
      int numParts = salaryParts.length;
      if (salaryParts == null || numParts == 0)
         return "";

      String[] maxSalary = new String[numParts];
      for (int i = 0; i < numParts; ++i) {
         maxSalary[i] = String.valueOf(salaryParts[i]);
      }

      Arrays.sort(maxSalary, (s1, s2) -> (s2 + s1).compareTo(s1 + s2));
```

```
        StringBuilder sb = new StringBuilder();
        for (String salaryPart : maxSalary) {
            sb.append(salaryPart);
        }
        return sb.toString();
    }

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int n = scanner.nextInt();
        String[] salaryParts = new String[n];
        for (int i = 0; i < n; i++) {
            salaryParts[i] = scanner.next();
        }
        System.out.println(largestNumber(salaryParts));
    }
}
```

Output:







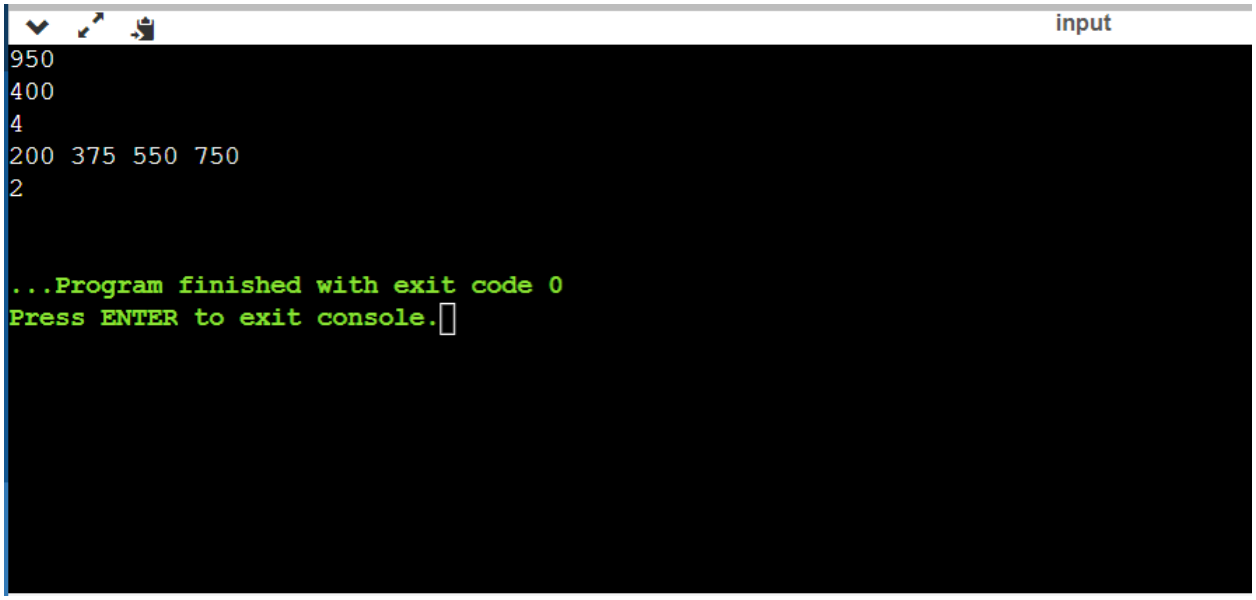
2.Car fuelling problem:

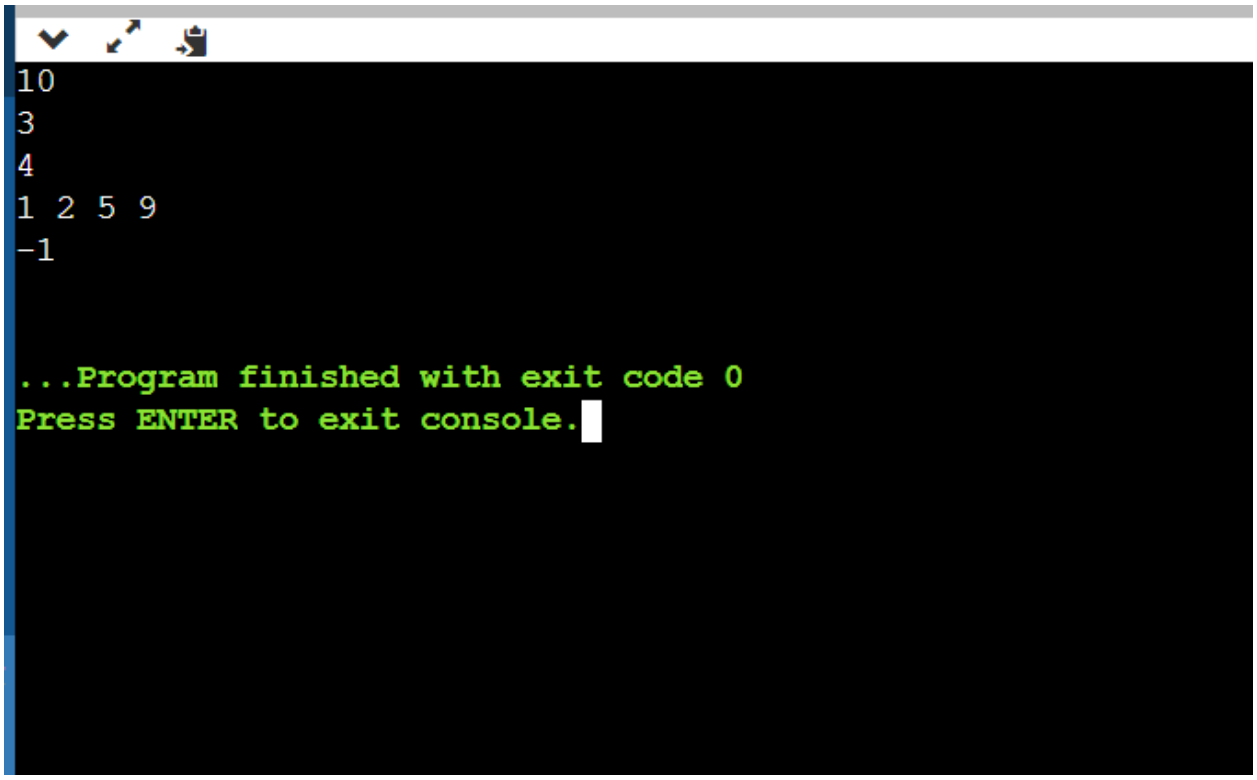
```
import java.util.*;

import java.lang.*;
```

```
import java.io.*;



class Main
{
   static int compute_refills(int dist,int tank,int stops[],int n){
      int current_refills=0;
      int num_refills=0;
      int last_refill=0;
      while(current_refills<=n) {
         last_refill = current_refills;
         while ((current_refills <= n) && (stops[current_refills + 1] -
stops[last_refill]) <= tank) {
            current_refills = current_refills + 1;
         }


         if (current_refills == last_refill)
            return -1;
         if (current_refills <= n)
            num_refills = num_refills + 1;
      }
      return num_refills;
   }
```

```
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int dist = scanner.nextInt();
        int tank = scanner.nextInt();
        int n = scanner.nextInt();
        int stops[] = new int[n+2];
        stops[0] = 0;
        stops[n+1] = dist;
        for (int i = 1; i <= n; i++) {
            stops[i] = scanner.nextInt();
        }

        System.out.println(compute_refills(dist,tank,stops,n));
    }
}
```

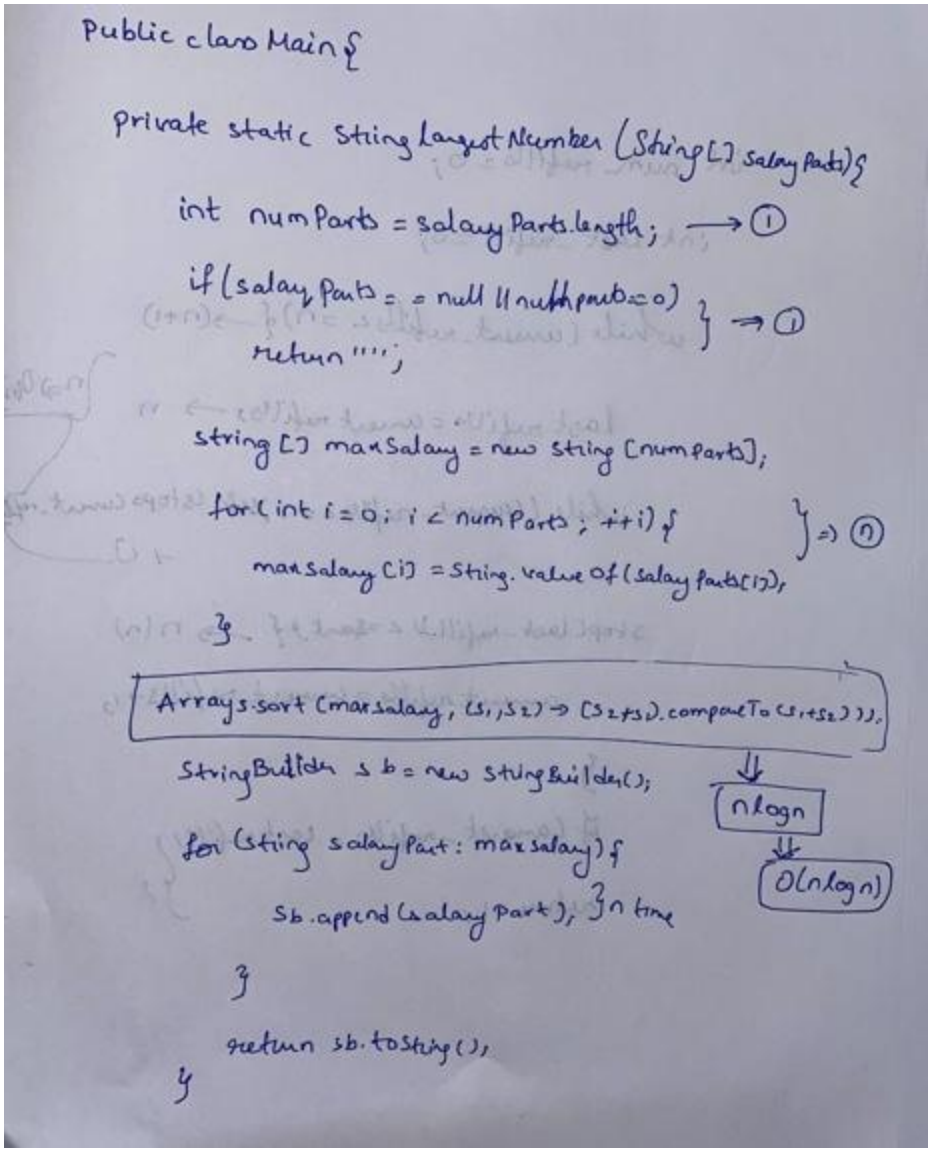
Output:


input
950
400
4
200 375 550 750
2
...Program finished with exit code 0
Press ENTER to exit console.


10
3
4
1 2 5 9
-1
...Program finished with exit code 0
Press ENTER to exit console.

Analysis:

1.Maximum Salary problem:



2. Car fuelling problem:

```
int num_refills = 0;
int last_refill = 0;
while (current_refills <= n) {
    last_refills = current_refills;
    while ((current_refills <= n) && (stops[current_refills + 1]
    stop[last_refill]) <= $ant$) {
        current_refills = current_refills + 1;
    }
    if (current_refills = last_refill) {
        return -1;
    }
```

n ⇒ O(n)

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