

LAB5

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Code:

```
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();
    }
}

```

```

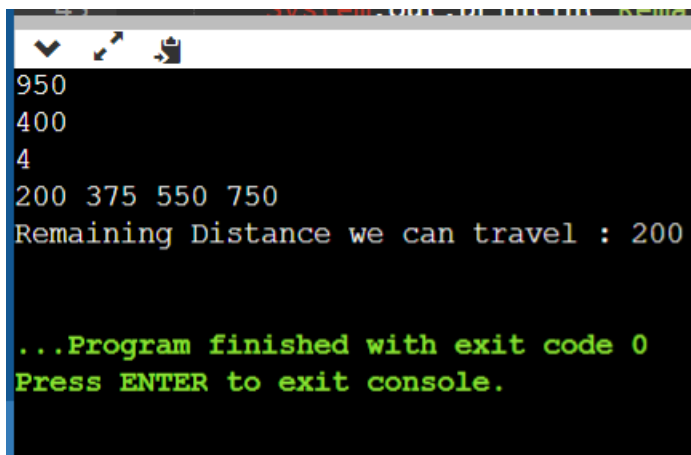
int x=(compute_refills(dist,tank,stops,n));
if((compute_refills(dist,tank,stops,n)==-1))
{

```

```
        System.out.println("Not possible to reach destination");
        System.exit(0);
    }
    int y = dist-stops[n];
    System.out.println("Remaining Distance we can travel : " +y);
}

}
```

OUTPUT:

A screenshot of a Java IDE's console window. The window has a title bar with standard OS icons. The console output is as follows:
950
400
4
200 375 550 750
Remaining Distance we can travel : 200

...Program finished with exit code 0
Press ENTER to exit console.
The text is displayed in a monospaced font on a black background. The first four lines are in white, the fifth line is in light blue, and the last two lines are in green.

Analysis:

It will take same time as car fueling problem i.e. $O(n \log n)$.