DESIGN ANALYSIS AND ALGORITHM

LAB 5

GREEDY ALGORITHM

(MODIFIED CAR FUEL PROBLEM)

NAME: NAOMI GEORGE

SLOT: L25+L26+L33+L34+L13+L14

REGISTRATION NO. : 19BCE7572

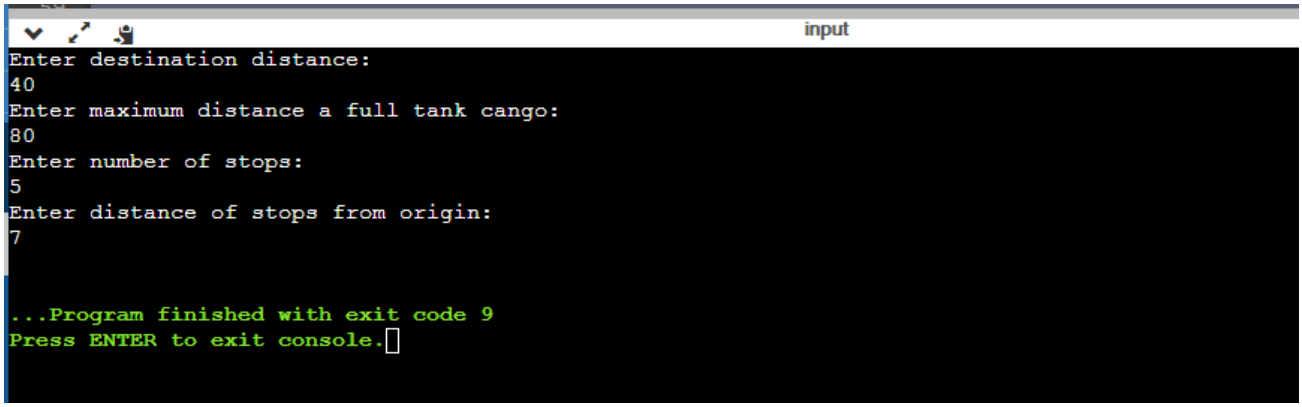
COURSE CODE: CSE3004

CODE:

```
import java.util.*;
public class Main
{
public static void main(String args[])
{
Scanner sc=new Scanner(System.in);
System.out.println("Enter destination distance:");
int d=sc.nextInt();
System.out.println("Enter maximum distance a full tank cango:");
int m=sc.nextInt();
System.out.println("Enter number of stops:");
int n=sc.nextInt();
int A[]=new int[n+2];
int i;
A[0]=0;
A[n+1]=d;
System.out.println("Enter distance of stops from origin:");
for(i=1; i<=n; i++)
{
A[i]=sc.nextInt();
}

int minRefill=0;
int currRefill=0;
int lastRefill=0;
int flag=0;
while(currRefill<=n)
{
```

```
lastRefill=currRefill;
while(currRefill<=n&&(A[currRefill+1]-A[lastRefill])<=m)
{
currRefill+=1;
}
if(currRefill==lastRefill)
{
System.out.println("IMPOSSIBLE");
flag=1;
break;
}
if(currRefill<=n)
{
minRefill+=1;
}
}
if(flag==0)
{
int saved=m-(A[currRefill]-A[lastRefill]);

System.out.println("Minimum number of stops required:"+minRefill);
System.out.println("Fuel saved:"+saved);

if(saved>=(d-A[n]))
{
System.out.println("Round Trip Successful");
}
else
{
System.out.println("Round Trip Not Successful");
}
```

OUTPUT:


input
Enter destination distance:
40
Enter maximum distance a full tank cango:
80
Enter number of stops:
5
Enter distance of stops from origin:
7
...Program finished with exit code 9
Press ENTER to exit console.