Q015 - Public bike station management

Question:
The T City is well-known for its convenient public bike system. People can rent bikes from any bike station and return the bikes to any other bike station. The main challenge of running this public bike system is to maintain enough number of bikes at each station to ensure that there is always an available bike.

- There are 100 public bike stations in the city, numbered from 1 to 100.
- Each bike station is designed to hold a maximum of 100 bikes, and must start with 50 bikes at the beginning of the day, for a total number of 5000 bikes.
- Bikes are returned to random stations (not exceeding the station capacity of 100) before the end of a day. The total number of bikes does not change from day to day.
- A truck must redistribute the bike inventory to 50 bikes per station at the beginning of each day. A truck can transport a maximum of 30 bikes per load. It can load or unload bikes at each station. The cost of loading or unloading bikes at any bike station is equal.

Given the number of bikes in each bike station at the end of a day, create a program that produces the optimal redistribution plan (the plan that requires the least number of trips) to restore the bike inventory at the beginning of the day.

Input:
The input contains the number of bikes at the 100 bike stations, from station #1 to station #100, separated by single space character.
The following example shows a simplified case of 8 stations (400 bikes):

```
90 50 15 55 40 0 75 75
```

The input is guaranteed to contain correct total number of bikes.

Output:
Your program must produce a **correct** plan with the **least number of trips** to receive a score.

Each line must display the station number, whether you load or unload bikes, and the number of bikes being loaded or unloaded (the cost of moving from any station to another are equal). The number of lines indicates the cost of the plan.

The answer for the 8-stations example is:

```
1 load 30
3 unload 30
7 load 25
4 load 5
6 unload 30
8 load 25
6 unload 20
3 unload 5
1 load 10
5 unload 10
```


Note 1: After applying the redistribution plan, each bike station should contain exactly 50 bikes. The example above displays a redistribution plan with a cost of 10.
Note 2: There can be more than one correct redistribution plan with the minimum cost value. You will receive a score as long as your redistribution plan is correct and the moving cost is the lowest.