Problem 2 - Memory Allocation Simulation

Problem Description

For this problem, you will write a program that simulates allocating and releasing memory in a computer operating system.

The input will be a series of commands to your simulator:

- **size <value>** – Instructs the program to reset the simulation to an empty memory of the given size. This command produces no output.
- **alloc <value>** – Requests a block of memory of the given size. If a block of free memory exists that is large enough to accommodate the request, then the requested size should be allocated and the address of the start of the allocated block should be output. If no such free block exists, then the output should be **-1**. The simulator should always choose the lowest valid address for any block that is allocated.
- **free <value>** – Frees a block of memory previously allocated and returned by the **alloc** command. No input will be provided that would attempt to free an address that was not previously returned by the simulator.

You may assume that all values in the input will be non-negative integer less than 65,536.

Sample Input:

```
size 25
alloc 5
alloc 10
alloc 20
free 0
alloc 2
alloc 1
size 10
alloc 3
alloc 7
```

Sample Output:

```
0
5
-1
0
2
0
3
```