

Programming Task

Problem 1:

In Vodafone, we would like to enhance the speed of the network to achieve customer satisfaction, we usually get a lot of ongoing network requests differently sorted in bulks as form of array. What we would like to have is a way that we're able to tell how many each similar request exists in the array and display this information one way or another.

We would like to write a method `getRepeatedNetworkTraffic` which takes an array of packetIds and we would like to know how many each packet repeated how many times.

Time Complexity: **$O(n)$**

```
{INSERT_YOUR_RETURN_TYPE_HERE_IF_NEEDED} getRepeatedNetworkTraffic (int [] packets) {}
```

Example:

```
int [] packets = {1,2,3,4,1,2,7,2,3,4}
```

```
getRepeatedNetworkTraffic ( packets );
```

This should return parsable information that id = 1 repeated 2 times, id=2 repeated 3 times, id=3 repeated 2 times, id=4 repeated 2 times and id=7 repeated 1 time

Problem 2:

An audit is done periodically on Vodafone servers to check the efficiency and simplicity of customized scripts one of the issues that repeats a lot is employees tends to uses a very long absolute paths so given an absolute path for a file (Unix-style) write a function to simplify these path.

Time Complexity: **$O(n)$**

Examples:

```
path = "/home/"
=> "/home"
path = "/a/./b/../../../../c/"
=> "/c"
path = "/fic/../../iak/../../../../hgy/blg/../../vzt/../../tod/../../../.././bsc/./krk/../../lnb/zhj/./"
=> "/bsc/lnb/zhj"
```

Note that absolute path always begin with '/' (root directory)
Path will not have whitespace characters.