

# Goodie Collector (300 points)

## Introduction

The big day has finally arrived, Bloomberg has come to your university and prepared a fun contest for you. To satisfy basic student needs, Bloomberg has prepared some tables arranged in a row with some different goodies including socks, pens, and other useful items. Due to logistic reasons, there is only a single type of goodie on each table. Two adjacent tables are exactly one metre apart, every table is considered of negligible width for this problem and the tables are numbered from left to right. Of course, you want to maximize the number of different goodies you can get. One restriction applies however: as you do not want to appear greedy to your fellow friends, you want to make sure that between every two tables you take goodies from there is at least some given distance.

## Input Specifications

The first line contains the integers  $n$ ,  $k$  and  $d$  that are separated by a space. The integer  $n$  is the number of tables ( $1 \leq n \leq 12$ ),  $k$  is the number of different goodies ( $1 \leq k \leq 12$ ) and  $d$  is the minimum distance in meters between two tables you take goodies from ( $1 \leq d \leq n$ ).

The second line contains  $n$  space separated integers. The  $i$ -th integer is the goodie that can be picked up on the  $i$ -th table. A goodie type is a number between 0 (inclusive) and  $k$  (exclusive).

## Output Specifications

Print the maximum number of different goodie types you can get.

## Sample Input/Output

### Input

```
8 3 3
1 2 2 1 0 0 0 0
```

### Output

```
2
```

### Explanation

Here, one can only select two different types of goodies. Either select goodie types 0 and 1 by going to the tables (which are assumed to be 1-indexed):

- 1 4 7
- or 1 4 8
- or 1 5 8
- or 1 5
- or 1 6
- or 1 7
- or 1 8
- or 4 7

- or 4 8

Or select goodie types 0 and 2 by going to the the tables:

- 2 5 8

- or 2 5

- or 2 6

- or 2 7

- or 2 8

- or 3 6

- or 3 7

- or 3

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## Input

5 4 2

0 0 3 3 2

## Output

3

## Explanation

It is possible to get 3 different types of goodies from tables 1, 3 and 5. This is optimal as goodie type 1 is not available anywhere and this is the only goodie type we do not get.