CIS 315, Intermediate Algorithms
Spring 2020

Assignment 5

due 8pm, May 11, 2020

1 Description

This programming assignment is to implement a modification of the MaxZondorCoin problem on the previous assignment. In this case you have

- coins of denominations $d_1, d_2, \ldots, d_n$
- a target value T
- where all denominations are distinct
- and you have 5 coins of each denomination

Write code that will determine the *maximum* number of coins that will add up to the target value T (exactly).

You may write your program in either Java, Python, C, or C++.

2 Input Format

The input will be a text file. The the first line has integers n and m, where n is the number of coins and m is the number of target values T to be tested. After the first line are n lines containing a single integer, the denomination of each coin. These numbers will be distinct. After these there will be m lines of a single integer T, each to be tested against the coin set given in the first n lines.

3 Example

input: from file inSample.txt

```
3 8
3
7
```

```
11
0
3
21
22
72
104
105
106
```

output:

```
target: 0, max coins: 0
target: 3, max coins: 1
target: 21, max coins: 3
target: 22, max coins: 6
target: 72, max coins: 12
target: 104, not possible
target: 105, max coins: 15
target: 106, not possible
```

4 Testing Protocol

We will test your program by running your program at the command line. You will need to use **standard input**. Do not pass in the name of the file as an argument - do not encode the name of your input file in your program. We will run your program on several different test files, some of which may be generated by other programs and piped into yours.

5 Submission

Post a copy of your source code (*.java .py*, *.c*, or *.cpp*) as to Canvas by 8pm of the due date. The file name does not matter, but it should be a single file.