Assignment3

1. Dodging bullets

Description:

Cirno is addicted to playing STG. (A kind of game that player need to control a character dodging(闪避) bullets). Now consider the screen is a n*m grid. There will be k bullets on the screen which will fly in straight line. A point that won't be touched by all the bullets is a safe point. Now Cirno need you to write a program to tell there are how many safe points. (**start point of bullets is not safe point**)

Input:

The first line has 3 integer n, m and k, represent the size of screen and the number of bullets. Then there will be follows by k lines. Each line has 4 integers, first two integers represent the start point of this bullet and the last two integers is the direction of this bullet in vector form. The directions have only 8 possibility: (0,1), (1,1), (1,0), (1,-1), (0,-1), (-1,-1), (-1,0) and (-1,1).

Output:

Print one integer represent the number of safe points.

Sample:

```
3 4 5
1 1 1 -1
1 1 -1 1
0 3 1 0
0 2 1 0
0 0 -1 -1
3
```

2. Spiral array

Description:

Given two integers m, n, generate a m*n matrix filled with elements from 1 to m*n in anticlockwise spiral order, starting from the top right corner.

Input:

The input is two integers m, n.

Output:

The m*n spiral matrix as the sample.

Sample Input and Output:

```
4 4  input
4   3   2   1
5  14  13  12
6  15  16  11      output
7   8   9  10
```

```
5 3
3   2   1
4  13  12
5  14  11
6  15  10
7   8   9
```

3. **Download (with wget)**

http://www.unicode.org/Public/8.0.0/ucd/Blocks.txt

1) Define a suitable structure to load all this in an array (size 300 is big enough)

2) Write a function to search this array when provided with a Unicode value, and a small test program.

You are provided with code that does Unicode/UTF-8 conversions

Read a file from the standard input - that means that your program will be called like this:

./your_program < name_of_file_to_analyze

Your program must display on the standard output the name of the block to which most characters belong (there may be characters from different blocks)