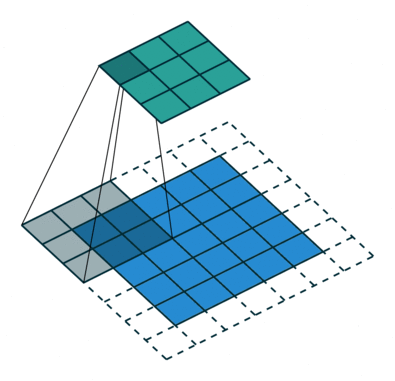
**Image Filtering**

In computer vision, image filtering a technique used to change the appearance of an image by altering the colors of the pixels. Hung is a student of data science and artificial intelligence course of DUT. He is very interesting with following filtering method:

Given an image **A** of size *h*×*w*. Each pixel of **A** has a brightness level of *ai*,*j* (1 ≤ *i* ≤ *h* and 1 ≤ *j* ≤ *w*). Hung uses a filter **L** which is a matrix of intergers *lx*,*y* of size X × Y (1 ≤ *x* ≤ X, 1 ≤ *y* ≤ Y) and X, Y are odd numbers. The output of the method is a image **B** of the same size as **A** and whose pixels’ brightness level *bij* are calculated by the following formula:

Note, if *i* or *j* do not satisfy the condition 1 ≤ *i* ≤ *h* and 1 ≤ *j* ≤ *w* then *ai*,*j* is considered equal to 0. represents the formula to round up. Please help Hung to implement the program using the above method.

**Input:**

- The first line contains 4 natural numbers *h*, *w*, X and Y (1 ≤ *h* × *w* ≤ 5×105, 1 ≤ X ≤ *h*, 1 ≤ Y ≤ w and X, Y are odd numbers).

- Next *h* lines are brightness level *ai*.*j* of image **A**(0 ≤ *ai*.*j* ≤ 5×105).

- Next *X* lines are matrix of intergers *lx*,*y* of filter **L** (0 ≤ *li*.*j* ≤ 5×105).

**Output:**

- Print brightness level *bi*.*j* of image **B**.

**Sample:**

|  |  |
| --- | --- |
| **Input** | **Output** |
| 3 3 3 3  1 2 3  4 5 6  7 8 9  1 1 1  1 1 1  1 1 1 | 12 21 16  27 45 33  24 39 28 |
| 3 3 1 3  1 2 3  4 5 6  7 8 9  1 2 1 | 4 8 8  13 20 17  22 32 26 |