

WEAVING LOOM



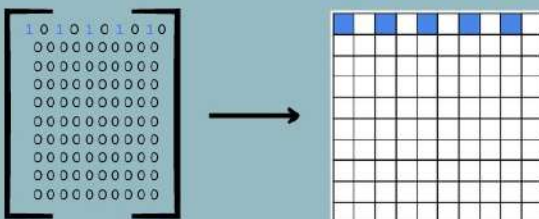
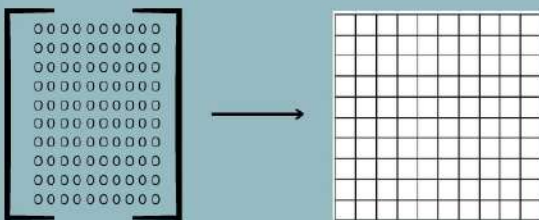
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MATRICES IN WEAVINGS

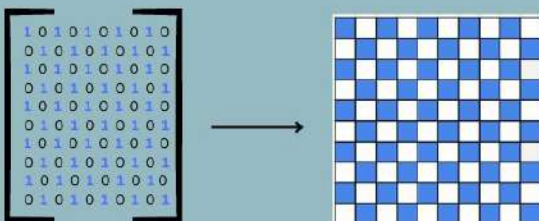
In mathematics and informatics, this process can be viewed as a square matrix which has all its elements 0 in the beginning. Let's say we have $i=1,10$ - the row index and $j=1,10$ - the column index. In order to make this pattern we have to change each element that has both i and j even or odd.

Examples:

- $matrix[5][8]=0$ because 5 is odd and 8 is even
- $matrix[6][4]=1$ because 6 and 4 are both even
- $matrix[3][7]=1$ because 3 and 7 are both odd



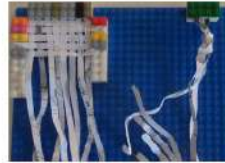
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Here's the C++ code

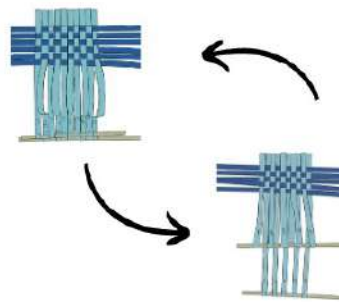


Choose your own way of weaving and try to build a "machine" that can make it with paper strips.



THE MECHANISM

Lower the odd numbers and place the even ones backward



Lift the odd numbers and place the even ones forward

Our idea is to make a weaving which consists of 20 paper strips: 10 vertical ones and 10 horizontal ones. Because we wanted to build a weaving robot, we started by weaving the strips ourselves to find a pattern.

THE VERTICAL STRIPS

```

when: space key pressed
  stop moving

when: down arrow key pressed
  move backward at power 20 %

when: up arrow key pressed
  move forward at power 20 %
    
```

In order to move the 2 sets of vertical strips simultaneously, we have to connect the sticks to a string and place it on the wheels, which are used as pulleys

THE HORIZONTAL STRIPS

For this part we used 2 wheels: one for pushing the paper strips forward from their initial position on the rail, and the other for moving the rail to the next strip

```

when: space key pressed
  stop moving

when: down arrow key pressed
  left wheel turns at power 20 % - right wheel at power 0 %

when: up arrow key pressed
  left wheel turns at power 0 % - right wheel at power 20 %
    
```

WHAT ABOUT A 3 STRAND BRAID?

