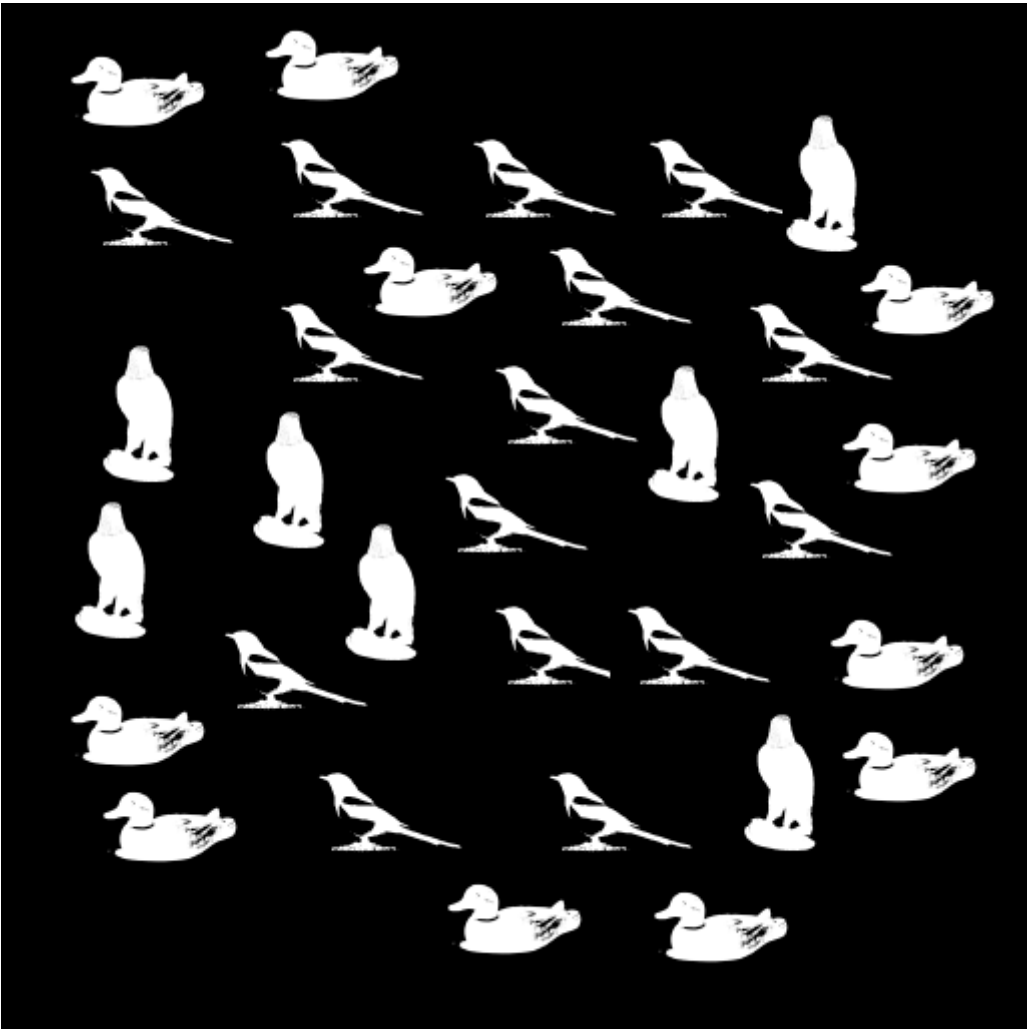Magpie is a common bird found in parks, towns and forests in **temperate regions of Europe, Asia, and western North America.**

Please, provide a class that identifies and counts the magpies in the binary test image shown below:

You may use the reference binary image of a single magpie:

To this end, prepare the private method `LoadImage` that loads the image from the file, you may use the command `img = ImageIO.read(new File("file_name.tif"));`

Print the error messages, if the file is not existing, or if it cannot be opened.

To access the pixel values, prepare the private method `ImageToArray`, that converts the `img` to the binary array. You may obtain the pixels values from the `img` in the following way:

```
//get pixel value
int p = img.getRGB(x,y);

//get alpha
int a = (p>>24) & 0xff;

//get red
int r = (p>>16) & 0xff;

//get green
int g = (p>>8) & 0xff;

//get blue
 int a = p & 0xff;
```

The method should prepare the binary array which holds the image (with the array's element equal to 0 when the corresponding pixel is dark, 1 otherwise).
Use both methods `LoadImage` and `ImageToArray` in the class constructor, to load and store both the test image, and the reference image.

Prepare the public method `GetMagpies,` which counts the number of the magpies in the test image, and stores the coordinates of the magpies (for example as an `ArrayList`)

Prepare the public method `ClearImage,` which produces a new array holding an image with all the birds other than magpies removed. You can prepare the array representing the black image, and copy the magpies you found in previously created method (set the pixels to white).

Prepare the public method `DisplayImage` that creates and saves an array as an image.
Create a new black image,
`var image = new BufferedImage(100, 100, BufferedImage.TYPE_BYTE_GRAY);`
Set the white pixels in the following way:
`Color white = new Color(255, 255, 255);`
`int rgb = white.getRGB();`

`image.setRGB(x, y, rgb);` where x,y are the coordinates of the pixel you want to save.

Invoke all the public methods in your code.