0.1 Displaying a coarse binary image: coarse_pixels_draw

This is an auxiliary function for displaying coarse binary images. It serves as a complement to :imshow or other Matlab image display functions. The function displays two binary images at once, the foreground image is overlaid on top of the background image. The background image pixels are displayed in black (value zero) and white (value 1). The black color means an empty pixel and a white color means a pixel belonging to the object(s). Empty pixels of the foreground image are not displayed. The pixels corresponding to objects in the foreground image are displayed as red squares inside the background pixels. The sizes of pixels are automatically adjusted to the size of input image. The maximal sizes of the background and foreground images are [32×32].

function `fig = coarse_pixels_draw(bgIm,fgIm)`

input

`bgIm`	[m×n]	Input binary image to be shown as the background.
`fgIm`	[m×n]	Input binary image to be shown as the foreground. The size of the background image has to be ≤ the size of the foreground image. The empty array `[]` means that there is no foreground image to be displayed.

see also :image, :imagesc, :imshow.

Example of coarse_pixels_draw use

In this example—see Figure 2.1—we will show an example demonstrating a specific region which is not convex. The region in question will be used as the background image; the empty pixels of the background image are black and pixels belonging to the object are white. We work here with binary images. The straight line segment shows that two pixels from a region can be connected in such a way that the whole line does not lie within the region. Both foreground and background images were prepared by hand with an external image editor.

```
% read the input images from prepared files
imBackground = imread('images/NoncovexExBg.png');
imForeground = imread('images/NoncovexExFg.png');
```

Display the image using function dedicated for drawing coarse images. The first parameter is the background, and the second parameter is an empty array, no foreground image will be drawn.

```
fh = coarse_pixels_draw(imBackground, imForeground);
```

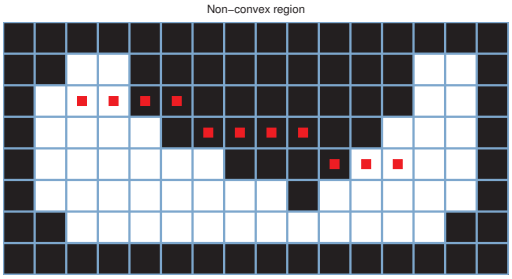

Figure 1: An example of a non-convex region that illustrate using of function `coarse_pixels_draw`.