

## **Prepic32 - Prerecognition of pictures (experimental application)**

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The application is intended for pattern recognition in images. It is developed under Borland Delphi and its Visual Component Library written in Object Pascal. Target platform includes Windows 32 OS (e.g. Windows XP, Vista, 7 etc.). It works in two modes - like experimental application with GUI to tune up patterns and other properties and also like console application to batch process images for recognition.

### ***Main Pane***

The main pane splits into several areas:

Area 1. Active patterns and recognized image - Shows loaded or created patterns to recognize and the last image, where the possible pattern should be found.

Area 2. Batch recognition of prepared images - Show results of recognition in selected directory (images are named like X\_Y.bmp, where X is number of row starting 1 and Y is number of column starting 0, e.g. 1\_0.bmp). It shows 3 best matching patterns index and below the image the tally level (similarity with pattern) - red is best)

Area 3. Pattern editor - Allows to edit patterns and tested (recognized) picture. It enables to load and to store patterns and tested pictures. Below there is possibility to load pattern automatically from image (threshold defines minimal intensity of pixel to be treated as non-zero point in pattern and increment adds intensity to them; it can be also computed automatically and it can be chosen black or white pattern in image - caution with black patterns, it doesn't work as well as for white ones).

Area 4. Loading of pattern files, computation trigger and batch process trigger.

Prepic Win32 version 3.0

1.

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Area 1

Area 3

☐ Hold button to fill/erase

Use mouse buttons to increase/decrease int.  
Mouse move + Ctrl=Max, Shift=Min, Both=Fill

Load Pattern no:

Load test pic

Store Pattern no.

Store test pic

Color  
☒ White  
☐ Black

Treshold (%)

Increment (%)

☒ Autodetect

Load BMP

9	2	3	5	7	2
5	8	9	6	2	8
8	3	5	2	3	6
60.1%	70%	82.5%	82.5%	58.4%	57.6%
51.9%	58.1%	50.5%	50.6%	51.9%	57.3%
47.5%	45.6%	48.7%	41.9%	28.7%	35.8%

6

8

5

18

87.5%

69.4%

63.1%

Area 2

Best Results:

Filename:

Compute+Normalize

Compute

Open DOS file

Save DOS file

New/Empty

Tally:  %

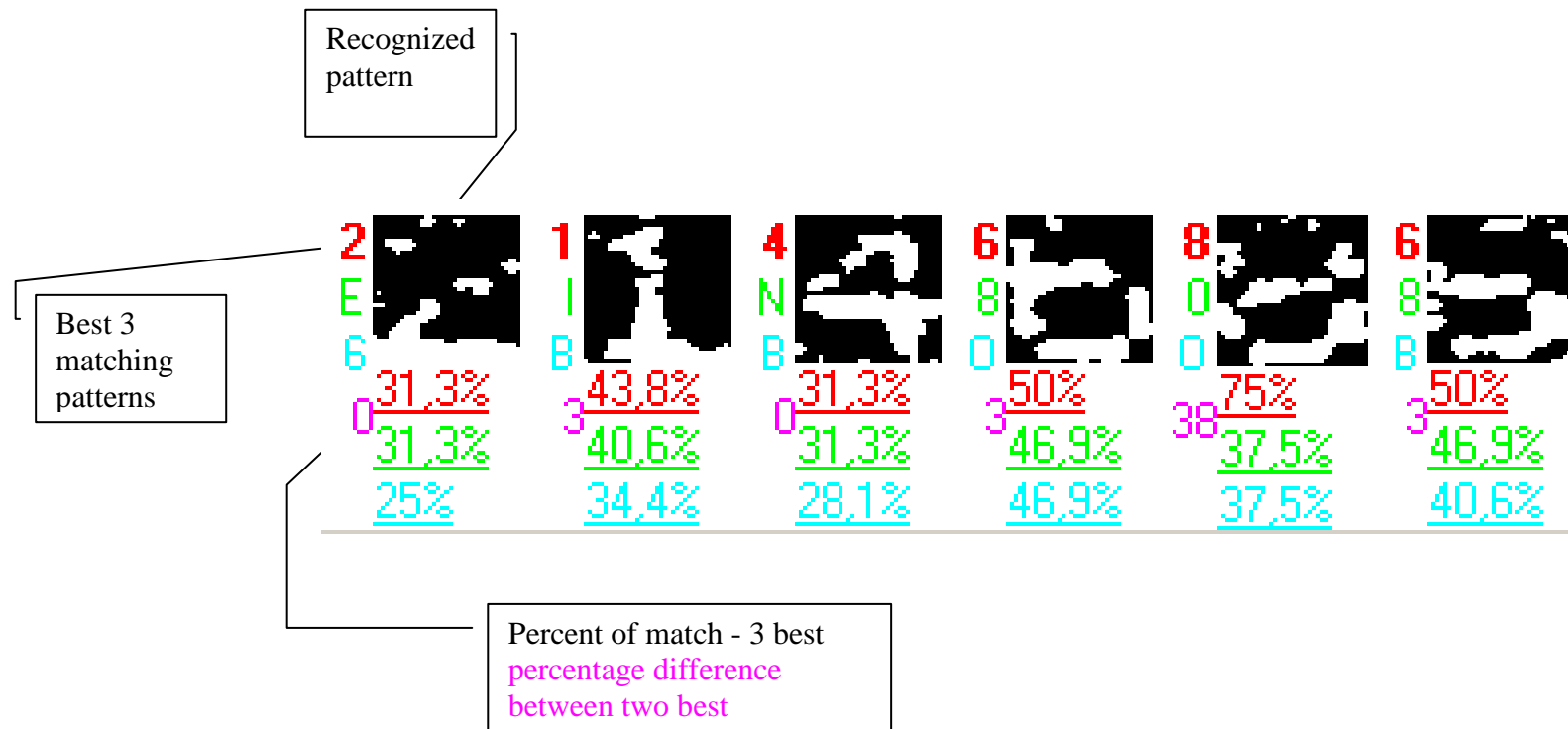
Area 4

Recognized patterns directory:

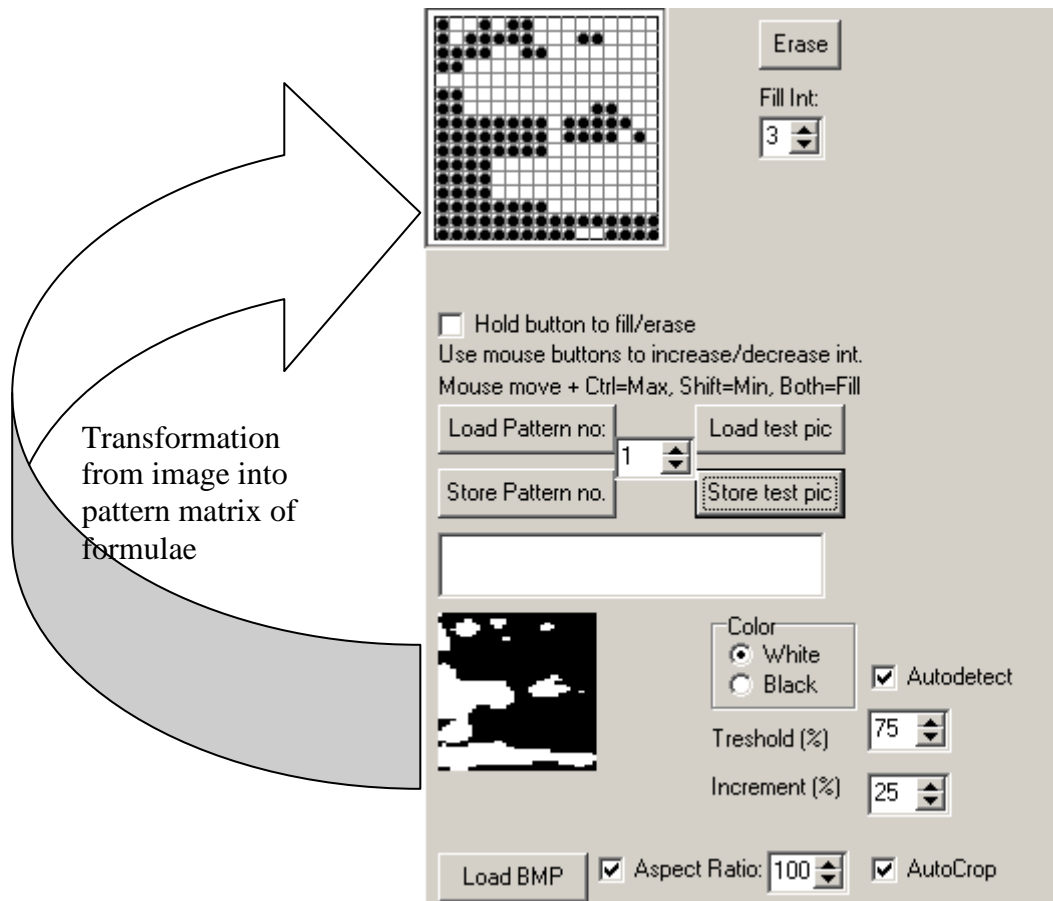
Recognize

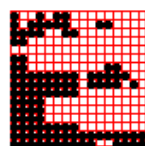
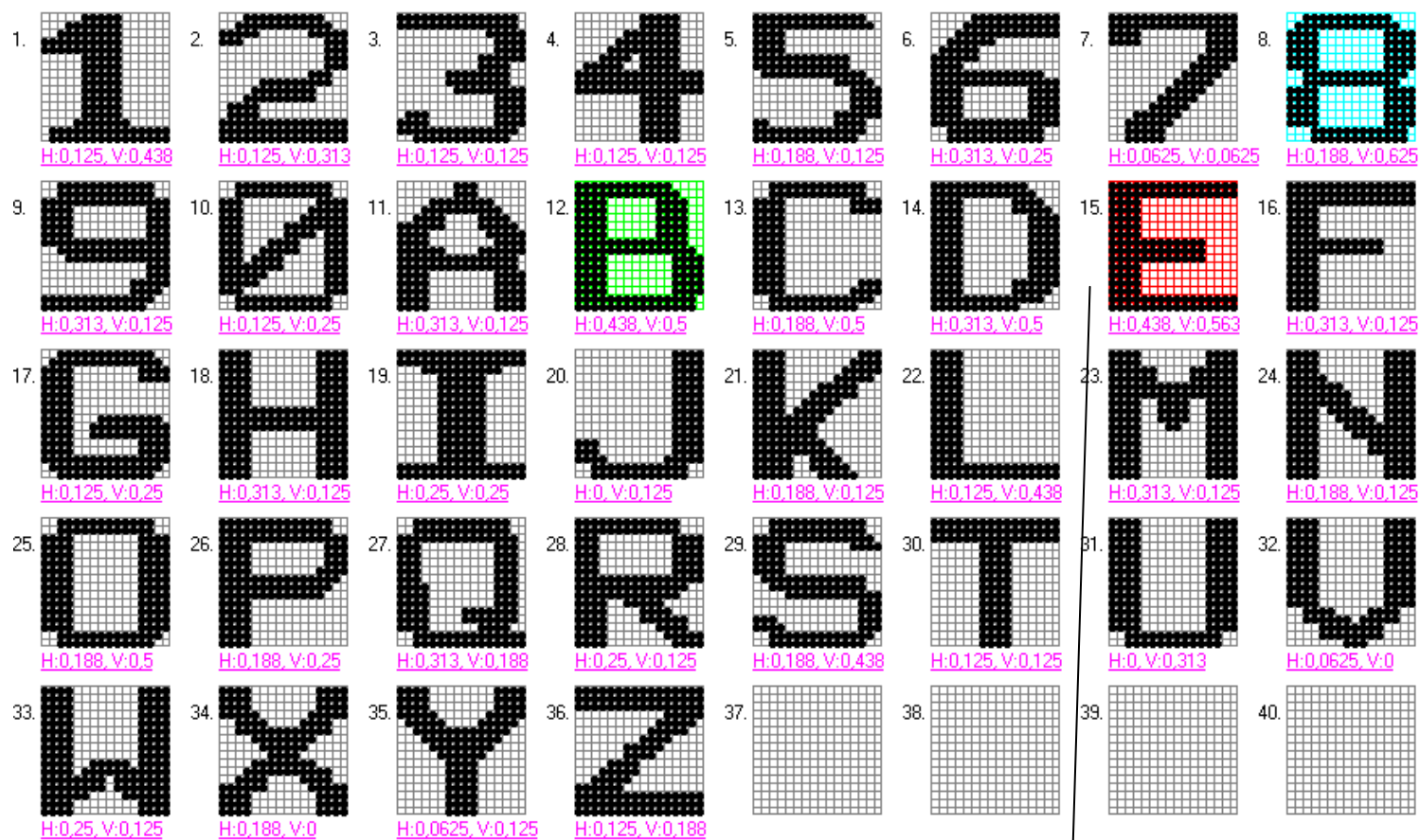
AutoPat





Batch recognition





Recognized  
pattern

Best matching pattern

Examples of batch recognition on various damaged images

E  
G  
B  
16 56,8%  
41,1%  
37,9%

2  
0  
R  
19 62,5%  
43,8%  
40,6%

1  
E  
I  
16 42,9%  
26,8%  
26,8%

4  
A  
I  
16 37,5%  
21,9%  
21,9%

6  
5  
0  
34 84,4%  
50%  
50%

8  
9  
6  
9 43,8%  
34,4%  
25%

7  
P  
2  
9 43,8%  
34,4%  
28,1%

E  
 C  
 F  
 3 50,4%  
 47,8%  
 41,1%

Z  
 9  
 G  
 3 28,1%  
 25%  
 25%

1  
 E  
 I  
 16 50%  
 34,4%  
 31,3%

4  
 W  
 N  
 12 37,5%  
 25%  
 21,9%

6  
 5  
 B  
 28 78,1%  
 50%  
 43,8%

8  
 0  
 D  
 0 62,5%  
 62,5%  
 56,3%

7  
 2  
 3  
 16 53,1%  
 37,5%  
 34,4%



