Assignment 6

Sung Soo Hwang

Assignment 6

- Develop a program which finds the best matching image among image DBs to the query image
  - Image DBs consists of 10 images
  - The user will enter the file name of the query image
    - If the file does not exist, the program should print out the error message such as "No file!"
  - The image matching should be done by extracting features of images and performing feature matching
  - The image sets will be given

Assignment 6

- Use the glob function to read the image from the DBs.

◆ glob()

```
void cv::glob ( String                  pattern,
                std::vector< String > & result,
                bool                    recursive = false
              )
```

  - pattern: Paths where images are stored
  - result: a parameter for storing each image path
  - recursive: Whether to locate subfolders within a folder

Assignment 6

- Your program should display two windows
  - ‘Query’, ‘Best_matching’
  - ‘Query’ window should display the query image and ‘Best matching’ window should display the best matching image to the query image

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Exercise 8

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- Suppose you have two image below. Which image do you think is better for feature extraction?

Exercise 8

- Determine whether the pixel in red can be a feature when FAST is used. The radius is set to 3.

12	13	14	15	16	17	18	19	20	21	22	23
12	13	14	15	16	17	18	19	20	21	22	23
12	13	14	15	16	17	18	19	20	21	22	23
15	15	15	16	15	16	17	13	15	16	12	11
15	14	13	13	13	12	12	12	12	12	12	12
15	14	13	11	10	9	10	10	10	10	10	10
15	14	13	11	10	9	8	8	8	8	8	8
15	14	13	11	10	9	8	7	7	7	7	7
15	14	13	11	10	9	8	6	6	6	6	6

Exercise 8

- Suppose you performed feature matching and calculated the distance of the best matching and the second best matching. Find the final matching pairs when NNDR = 0.4 is used

Feature index	The corresponding feature index	The best matching dist.	The second matching dist.
1	3	3	10
2	4	2	4
3	4	2	3
4	2	4	7
5	6	1	8
6	6	2	7
7	7	5	15

Exercise 8

- Compute the result of convolution and max pooling on the input image below using the 3X3 kernel. Zero padding is used, and stride is set to 1.

3	5	7	9
3	4	5	6
3	6	10	11
2	4	5	8

0	1	0
1	3	1
0	1	0