

A Recent Template Matching and Identification of Vehicle Number

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Abstract. Violation of traffic rules by motorist can be detected using different parameters. The exact culprit is identified through the register number of a car along with manufacturer logo preferably with color and other details. Hence a novel and simple algorithm is presented for identifying the number in license plate. The pseudo-code and implementation details are presented

Keywords: Vehicle Number plate, Template matching, Linear array, Spreadsheet, OOPs.

1. Introduction

In the recent years, many techniques are used to identify the characters and numbers in vehicle's license plate. Massoud, Sabee, Gergais and Bakhit [1] has used cross correlation technique for character recognition of vehicle's license plate. Erdinc Kocer, Kursat Cevik [2] and Amir Sedighi, Mansur Vafadust [3] were introduced the multi layered perceptron and feed forward neural networks for character recognition of license plate respectively. The implementation details are not amenable for quick and easy template matching in surveillance centre. So, there is a demand for alternative approach for this purpose. Here, we would like to propose a algorithm based on rudimentary technique for easy implementation.

2. Methodology

We proposed the technique for character recognition of existing character segmentation technique. The following block diagram shows the step by step procedure of our proposed technique.

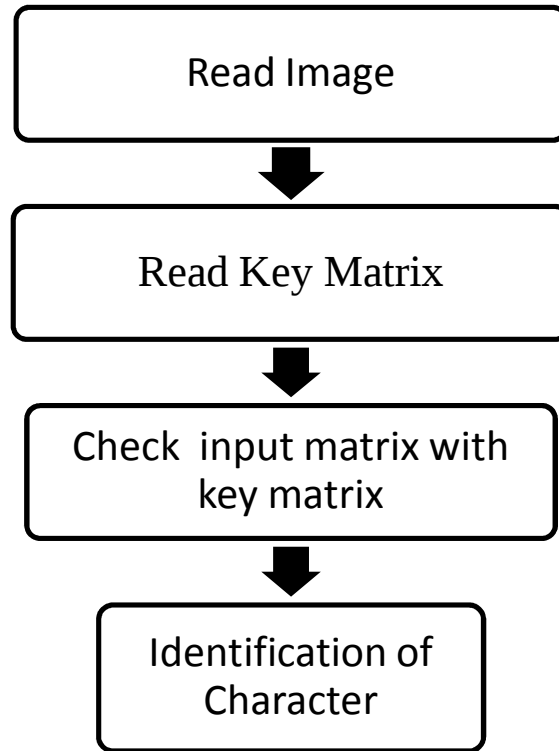


Figure 1: Block Diagram

In Fig. 1, read the binary values of license plate in the first block; read the Key matrix of template based on number of pixels of a character; to check the pixel values which will give the presence of the character.

3. A quick template matching algorithm

The following pseudo-code will helpful for implementing the above technique.

1. Initialize key[ROWS][COLUMNS], k=0, R, num[4]
2. Read response[COLUMNS] // Image matrix as 1-D array
3. Initialize count=0
4. Repeat step 5 to step 14 until i<ROWS //Check with database
5. Repeat step 6 to 10 step until j<COLUMNS
6. If response[j] = key[i][j] then
7. Count++
8. Else{
9. count=0
10. break}
11. if count = COLUMNS then
12. { num[k]=i
13. k++

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14. break}
15. Repeat step 16 until $i > 4$
16. Print num[i]

Figure 2: Template matching pseudo-code

From the above mentioned self explanatory pseudo-code, we can identify the numbers in license plate. Similarly, we can easily extract the alphabets from the license plate.

4. Explanatory details

The following fig. 2(a) to fig. 2(j) shows that the discrete data structure number plate entry.

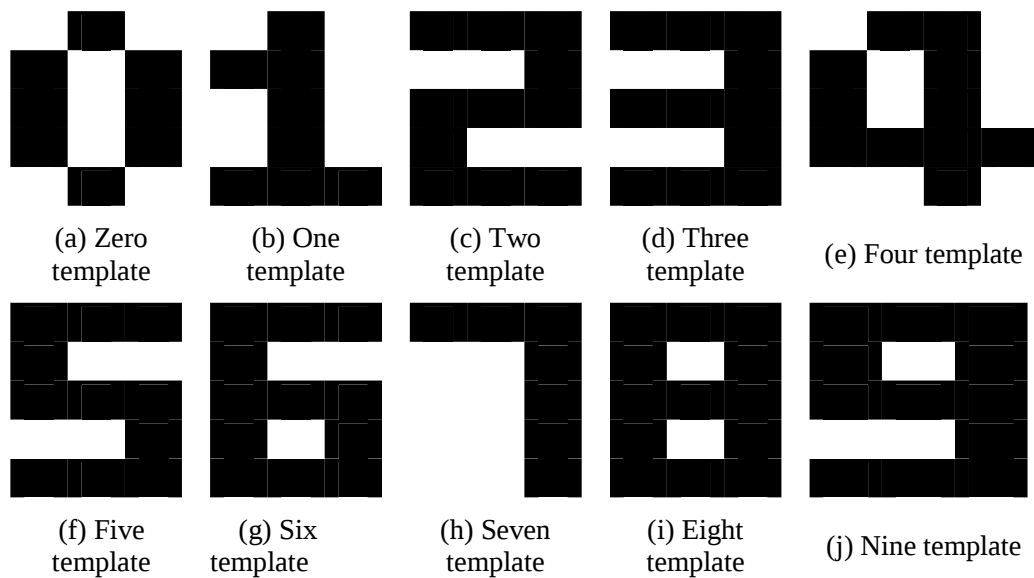


Figure 3: Template of Numbers

5. Experimental verification

We have implemented the technique by using C programming. In fig. 3 shows that the output of our proposed technique

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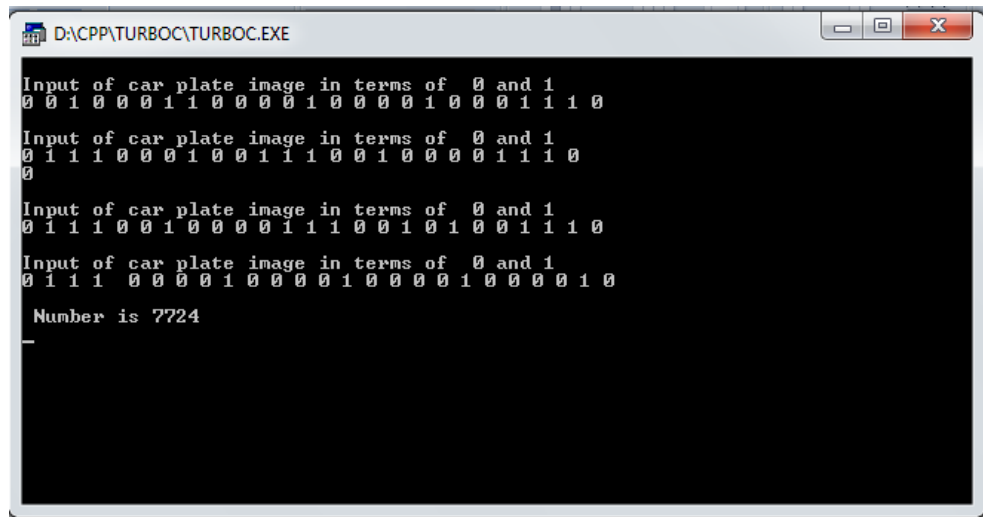


Figure 4: Experimental result

6. Conclusion

Comparatively many complex techniques are available, to extract the characters from the license plate of a vehicle. Our proposed technique is much simpler than the other techniques.

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