supplied by color image, then it is possible to increase the algorithm work speed, processing previous image by color encoding. The color encoding helps to reduce the number of errors. Nowadays, Viola-Jones algorithm is the most popular because of its high speed and high precision response [3].

Conclusion

As a result of research performed web-application, which implement system of user registration and authorization on web-browser. For proper work strongly recommended use Mozilla Firefox browser. Development of the database was performed among phpmyadmin.

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SOFTWARE IMPLEMENTATION OF METHODS FOR IMAGE QUALITY IMPROVEMENT

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I. Formulation of the problem

Most one-dimensional signal processing methods (such as median filter) applicable to two-dimensional signals, which are images. Some of these one-dimensional methods becomes more complicated when transit to two-dimensional signals. Imaging introduces several new concepts, such as connectivity and rotational invariance that make sense not only for two-dimensional signals. Therefore, the development methodology software processing color images with optical sensors is extremely urgent problem.

II. The purpose of the work

The purpose of research is the software implementation of methods for reading a color image to improve its quality.

III. Image quality improvement methods

Basic methods of improving image quality [1]:

- by histogram equalization;
- by gamma correction;
- noise Reduction using wavelet transformation;
- by increasing image sharpness.

To improve image quality by histogram equalization in Image Processing Toolbox package for this feature is provided histeq. The function J = histeq (I, hgram) converts the image histogram by modeled histogram given by vector hgram. The number of elements sets the number of its columns and element values range from 0 to 1-height columns. The function automatically scales for the condition sum (hdram) = prod (size (I)). The function J = histeq (I, [n]) allows you to set the number of columns histogram with uniform their distribution. The number of columns have to be much smaller than the number of gradations of brightness of the source image [2].

Another way to improve the image by adjusting the brightness and contrast based on the change of brightness palette. For this in Image Processing Toolbox package provides the function imadjust (I, [low_in high_in, [low_out, high_out], gamma]). The transfer characteristic of the pixel brightness value must be linear. When poor quality picture caused by poor quality photographic equipment, this relationship is nonlinear. Normalization is carried out manually, with a step correction. For line change brightness and contrast of a step change is 0.1 (brightness gradation range is increased by 10%). Setting the gamma curve

determines the shape of the transmission characteristics of brightness levels. If gamma is less than 1, the characteristics of the transmission levels is convex and the resulting image will be lighter than the original. If the range of more than 1, the characteristics of the transmission levels is concave and the resulting image will be darker than the original.

Fig. 1 shows levels of transmission characteristics for different values of gamma. The value of the brightness range [low high] converted into brightness values in the range [bottom top]. Brightness, lower than low, taking values bottom, and brightness, bigger than high, taking values top. The value of top, bottom, low, high must belong to the range [0,1].

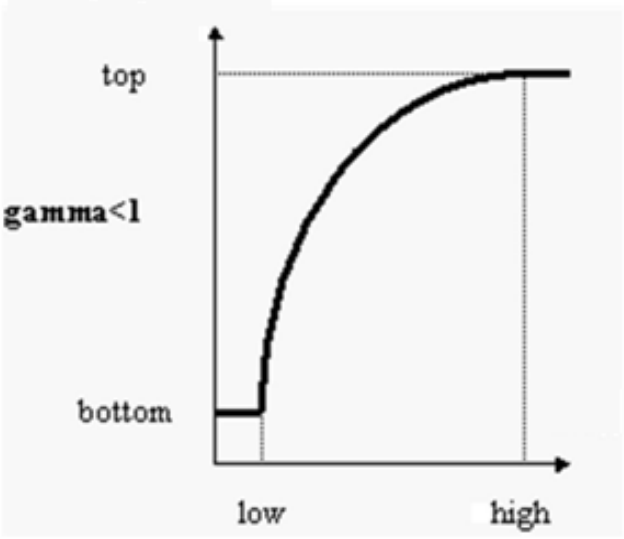

Figure 1- Transmission characteristics for different values of gamma

Conclusion

Therefore, the result of research carried out by software implementation techniques for improving image quality. To write the firmware of the basic algorithm used programming language C ++ and programming environment Arduino IDE [3]. For writing client side, it was decided to use the programming language Processing.

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GENETIC ALGORITHM FOR PROBLEMS FINDING TEST COMBINATIONS

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I. Formulation of the problem

To increase the coverage of testing procedures, improve the quality of testing and software possibility to reuse tests when software changes, used automate test concept [2]. Genetic algorithms optimize the value of multiparameter functions, so they are widely used.

II.The purpose of the work

The purpose of research is genetic algorithm for problems finding test combinations.

III. Graph construction of automat software

Main idea is focusing on building model of software automat, which is used as a prototype for testing genetic algorithm to solve the problem of software testing [1].Its necessary to have graph image because it