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].
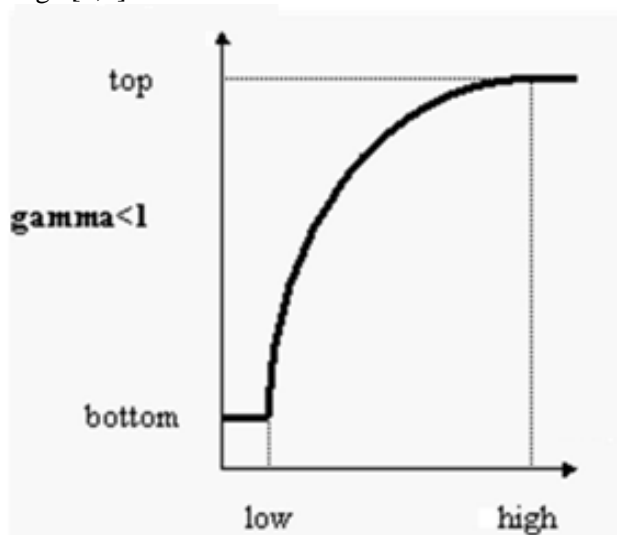

Figure 1- Transmission characteristics for different values of gamma

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

allows to test the genetic algorithm and clearly shows work of software automat model. For this, userby using the test sequence and transition table can evaluate the result of the testing program, check that all branches of the algorithm program tested. For building graph is used class TCanvas. Obtained graph figure is represented in JPEG-format. In memory graph is represented as cyclic doubly-connected list.

Algorithm of graph building is iterative, divided into several stages and involves the following acts (figure 1):

- determine the number of graphvertices (graph vertexcorresponds to state of automat);
- determine the number of connections (junctions) between the vertices of the graph;
- determine the number of circuits (automatic locking themselves);
- scaling vertices and determine ratios for the construction of arches and signatures of forming coordinate system;
- calculating initial coordinates for the vertices and the connections between them;
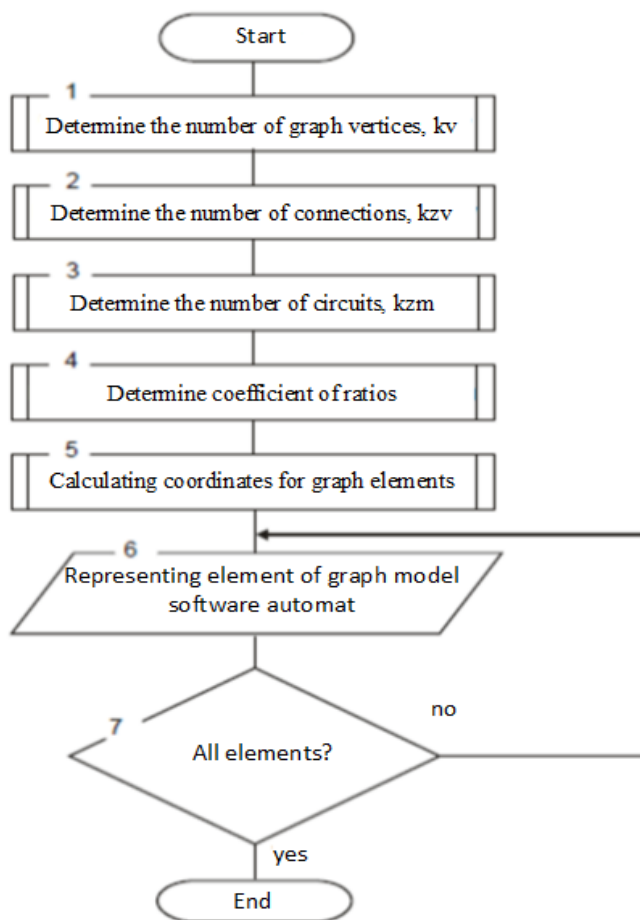- graph building.

Figure 1- Algorithm of graph building

Conclusion

Thus, the developed program can be used to further explore the possibilities of genetic algorithms using different types of modifications of classical genetic operators and fitness functions etc. for generating test sequences during software design.

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