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**ALGORITHMIZATION AND DEVELOPMENT OF
SIMULATOR ON THE TOPIC “CYCLES IN JAVA” OF THE
DISCIPLINE “PROGRAMMING**

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*The algorithm of the simulator on the topic “Cycles in Java” is
discussed in the thesis.*

*Keywords: SIMULATOR, DISTANT LEARNING, CYCLES IN
JAVA.*

In the thesis, considers the subject of the development the software application for the simulator on the topic «Cycles in Java» of the distant course «Programming»

Purpose of the thesis is the development of the algorithm of the training for solving cycles in java problems by the means of using a simulator, the software implementation of program testing.

Methods that have been used to solve the problem is, Algorithm theory methods are used in the thesis work. The program was developed using Java language in the environment of Netbeans IDE 8.2.

The software implementation put into practice that, it gives students a platform to enhance their learning skills and capabilities through the simulator.

The testing revealed that, the simulator is easy to use and has a good readability for students to work with.

The thesis developed a simulator algorithm.

The simulator can be implemented as a sequence of questions. The student must answer each question. If a student gives an incorrect answer, he will receive a hint and will answer again.

Objective: Develop a java program that contains questions and answers with hints to users in a graphical user interface.

Problem Data.

Example 1. What is the result of executing the following code?

```
for(int i=10;i>=5;i--){  
    System.out.print(2*i+" ");  
}
```

A) 20 18 16 14 12 10 (*)

B) 20 18 16 14 12

C) 10 9 8 7 6 5

D) 10 9 8 7 6

E) 9 8 7 6 5

Hints:

If student choose B)

The hint: "wrong answer"

If student choose C)

The hint: "wrong answer"

If student choose D)

The hint: "wrong answer"

Descriptive Algorithm

Algorithm.

Step 0. Start the program.

- Step 1. Display the first question, possible list of answers.
- Step 2. User then makes a choice.
- Step 3. If user selects a wrong choice, a pop-up message appears as a hint, move to step 2.
- Step 4. User clicks on the next button.
- Step 5. If list of questions is empty, move to step 7.
- Step 6. Display the next question, possible list of answers.
- Step 7. End program.

The report gives a solution problem that, in all, I successfully use an algorithm and chose a suitable method and a platform to create questions and answers for students to acquire and enhance their learning capabilities through the simulator.

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