

UDC 004.4'2

**ELEMENTS FOR THE SIMULATOR ON THE TOPIC
"ALGORITHM FOR CONDUCTING THE LEFT
FACTORIZATION OF GRAMMAR" OF THE DISTANCE
LEARNING COURSE "PROGRAMMING THEORY"**

A. Darboe. *Bachelor of Computer Science*

*Ukoopspilka Higher Educational Institution "Poltava University of
Economics and Trade"*

amzdabz@gmail.com

*Elements of the simulator on the topic "Algorithm for conducting the
left factorization of grammar" of the distance learning course
"Programming Theory" is proposed.*

Keywords: SIMULATOR, LEFT FACTORIZATION,
PROGRAMMING THEORY.

The main purpose is to create elements of the simulator software on the topic "Algorithm for conducting the left factorization of grammar" of the distance learning course "Programming Theory".

The object of the course project is the process of distance learning in mathematical and computer science disciplines.

The subject of the course project is a software product that implements a simulator on the topic of "Algorithm for conducting the left factorization of grammar".

The simulator is solve through Java programming language

The main tasks of the work:

- describe the problem statement;
- describe an overview of the purposes of distance learning and learning management systems;
- give the basic concepts of the topic for use in the simulator;
- develop an algorithm for the simulator and make a flow chart;
- describe the programming language and technologies used in developing the program;

- describe the process of implementation of the main stages of creating a simulator;
- Describe the instruction required by the user.

Creating simulators for distance learning opens up a new way for students of distance form of education. The advantage of simulators is that they can be used both for student training and for self-study.

The initial window of the simulator should display the following information about the simulator:

- topic;
- surname, initials of the student;
- Academic group of the student.

The following issues should be covered in the simulator according to the topic:

1. Recursive descent.
2. Algorithm of deleting of left recursion.
3. Left factorization.

Consider the operation of the simulator based on testing.

Step 1. The user is given the task: “Recursion is one of the fundamental programming methods. While program creating, it is often necessary to reduce the initial tasks to simpler ones.

The method of reducing a task to itself, but with modified initial data, is called:

(answer options are provided)

- recursion,
- recursive descent,
- left factorization”

If the answer is correct, i.e. the first option is selected, then there is a transition to the next step. If not, an error message is displayed.

Step 2. The user is given the task: “Recursive descent is:

(answer options are provided)

- a procedure, based on mutually not recursive equivalents, each of which implements one of the products of grammar,
- an algorithm of parsing, based on recursive, each of which implements one of the products of grammar,
- an algorithm of parsing, based on mutually recursive procedures (or not recursive equivalents), each of which implements one of the products of grammar”

If the answer is correct i.e. the third option is selected then there is a transition to the next step. If not, an error message is displayed.

An algorithm simulator for the topic "Algorithm for conducting the left factorization of grammar" of the distance learning course "Programming Theory" was developed over all.

Literature

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