METHODS OF SOLVING LINEAR PROGRAMMING LANGUAGES ON THE COMPUTER. THEIR PYTHON AND PASCAL SOFTWARE

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Annotation: *In this article presents steps, algorithms and block diagrams of solving linear programming languages on a computer, and the program was developed in Python and Pascal software.*
Keywords:*Linear programming language, algorithm, block diagram.*

МЕТОДЫ РЕШЕНИЯ ЯЗЫКОВ ЛИНЕЙНОГО ПРОГРАММИРОВАНИЯ НА КОМПЬЮТЕРЕ. ИХ ПРОГРАММНОЕ ОБЕСПЕЧЕНИЕ НА PYTHON И PASCAL

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Аннотация: В данной статье представлены этапы, алгоритмы и блок-схемы решения языков линейного программирования на компьютере, а программа разработана в программном обеспечении Python и Pascal.
Ключевые слова: язык линейного программирования, алгоритм, блок-схема.

KOMPYUTERDA CHIZIQLI DASTURLASH TILLARINI YECHISH USULLARI. ULARNING DASTURI PYTHON VA PASCAL DASTURLARIDA

Soliyeva Gavharoy Yodgorjon qizi
Namangan Davlat Universiteti Amaliy matematika va raqamli texnologiyalari kafedrasi o`qituvchisi

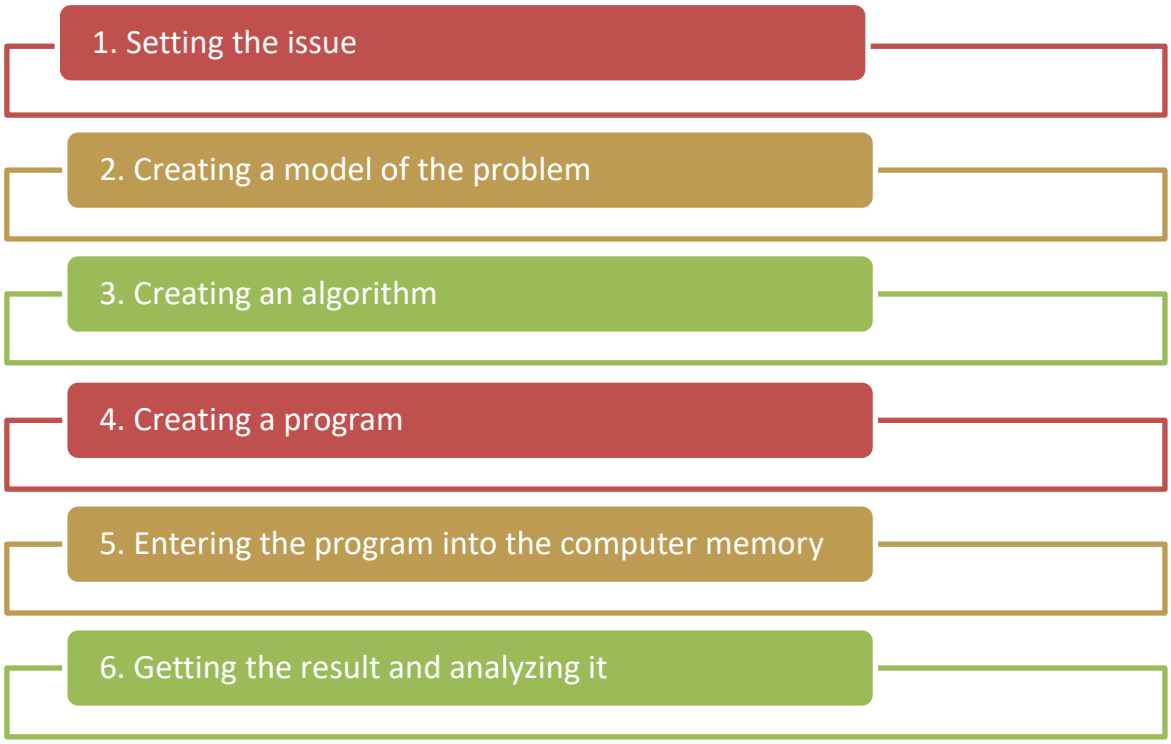
Annotatsiya: *Bu maqolada chiziqli dasturlash tillarining kompyuterda yechish bosqichlari, algoritm va blok - sxemalari keltirilgan bo`lib, dasturni Python va Pascal dasturiy ta'minotida ishlab chiqildi.*
Kalit so`zlar: *Chiziqli dasturlash tili, algoritm, blok-sxema.*

METHODS OF SOLVING LINEAR PROGRAMMING LANGUAGES ON THE COMPUTER. THEIR PYTHON AND PASCAL SOFTWARE

Various programming languages are widely used in modern computers. These programs sometimes become the only factor in solving important issues in economy,

management, service, and especially in various fields of industry and production. This, in turn, requires efficient and rational use of computers for engineering and management employees.

Solving a problem on a computer is divided into several stages:



First of all, a mathematical model (model) is created that reflects the necessary aspects of the analyzed process or structure as fully as possible. The mathematical model is expressed in the form of a system of formulas and equations. In the next step, the optimal calculation algorithm for solving the created mathematical problem is created.

An algorithm is an ordered sequence of commands required to solve a problem, usually described using words or in the form of a block diagram.

Any algorithm is divided into three main types depending on the logical structure, that is, the order of execution: linear, branching and iterative. A linear algorithm is an algorithm in which all instructions are executed sequentially.

EXAMPLE: $u = (1+z) * \frac{x+\frac{y}{z}}{a-\frac{1}{1-x^2}} + \frac{sin^2 x}{x^2+y^2}$

1) Setting the issue:

$$x = 8 \quad y = 6 \quad z = 3 \quad a = 5 \quad U = ?$$

2) Creating a model of the problem:

We will enter the marking

$$G = x + \frac{y}{z}; \quad B = a - \frac{1}{1-x^2}; \quad C = x * x + y * y;$$

$$U = (1+z) * (G/B) + math.\sin(x) * math.\sin(x)/C$$

3) Creating an algorithm:

- Let it begin;
- x,y,z,a variables should be entered;
- Enter G, B, C markings;

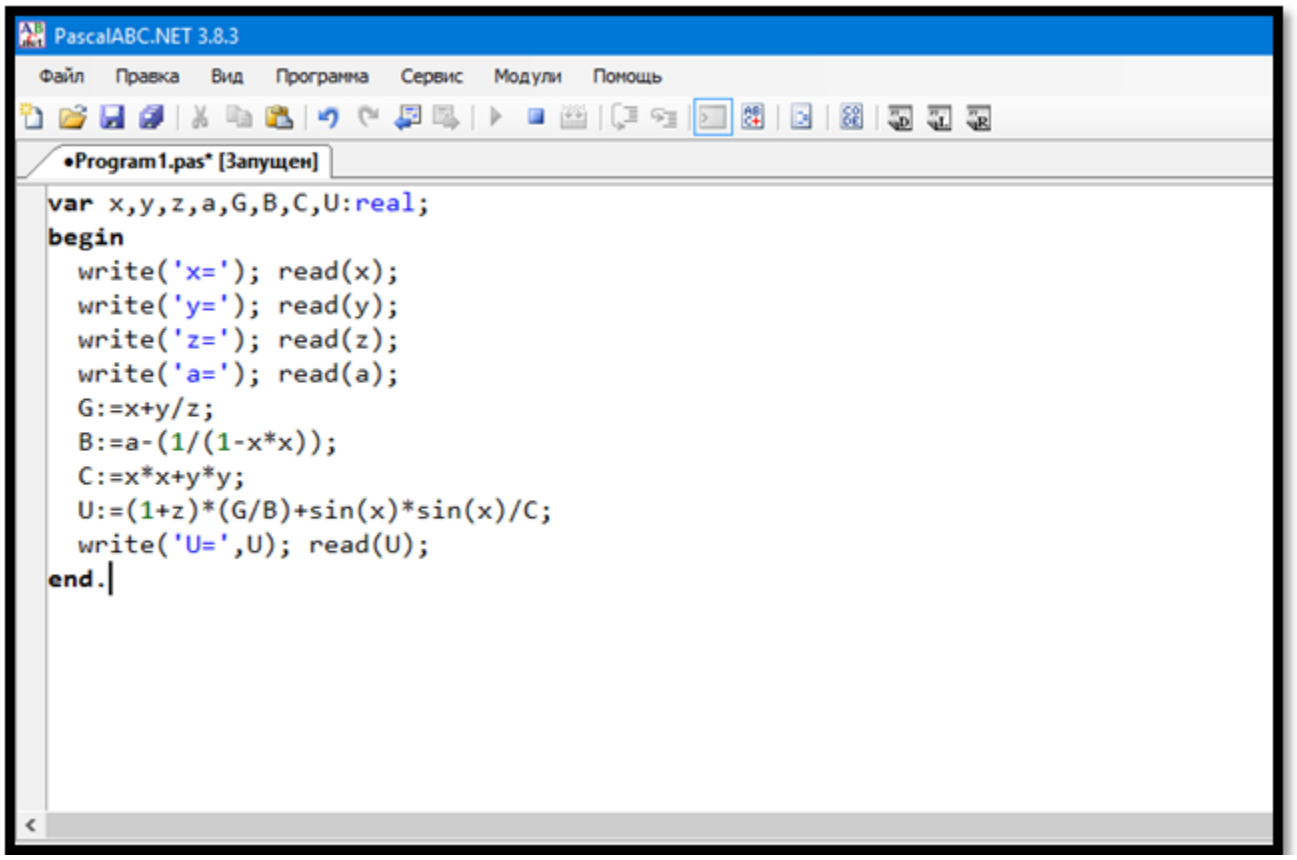
- Enter the value of that expression;
- Let it be printed;
- let it be completed.

4) Creating a program:

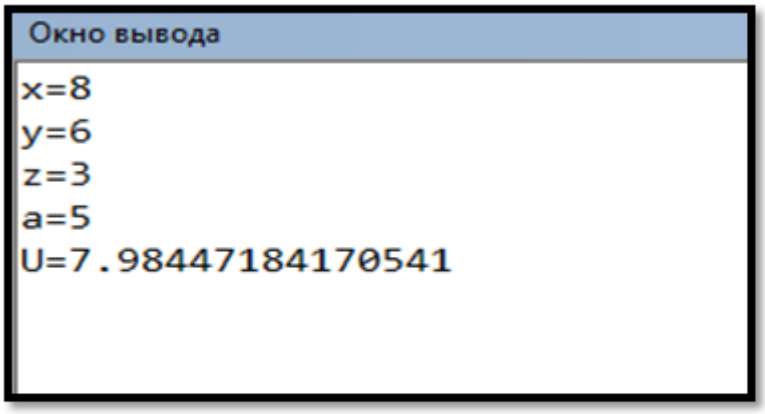
```
var x,y,z,a,G,B,C,U:real;
begin
write('x=');          read(x);
write('y=');          read(y);
write('z=');          read(z);
write('a=');          read(a);
G:=x+y/z;
B:=a-(1/(1-x*x));
C:=x*x+y*y;
U:=(1+z)*(G/B)+sin(x)*sin(x)/C;
write('U=',U); read(U);end.
```

5) Inserting the program into the computer memory:

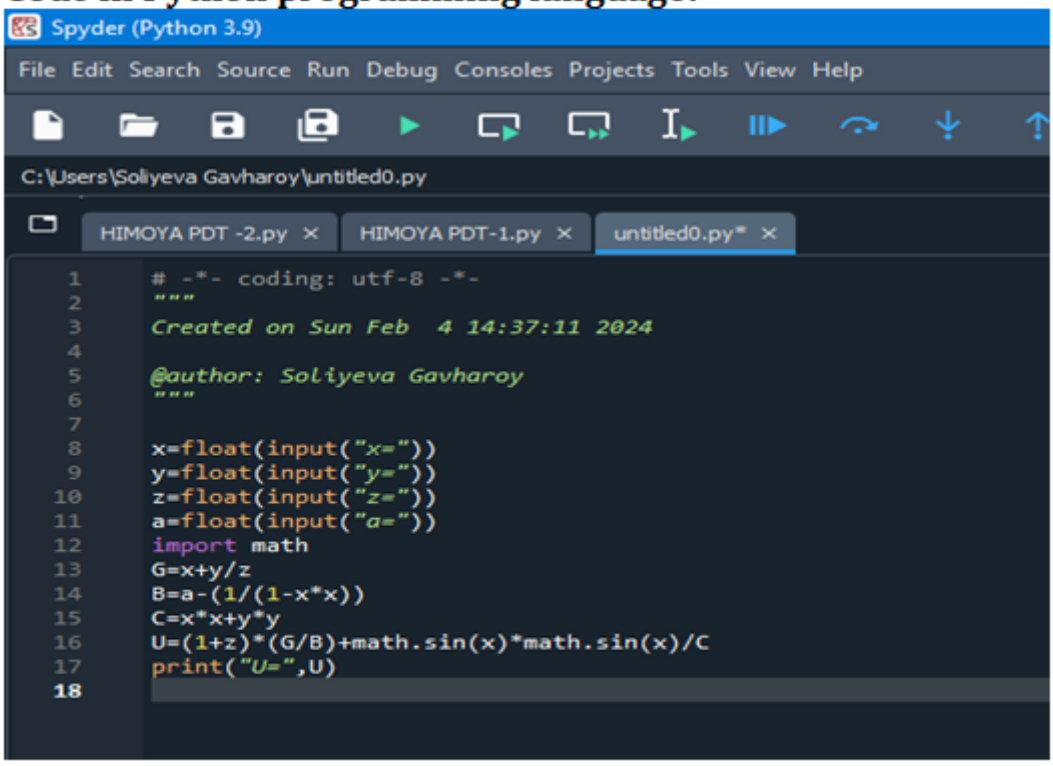
Pascal programming language code:



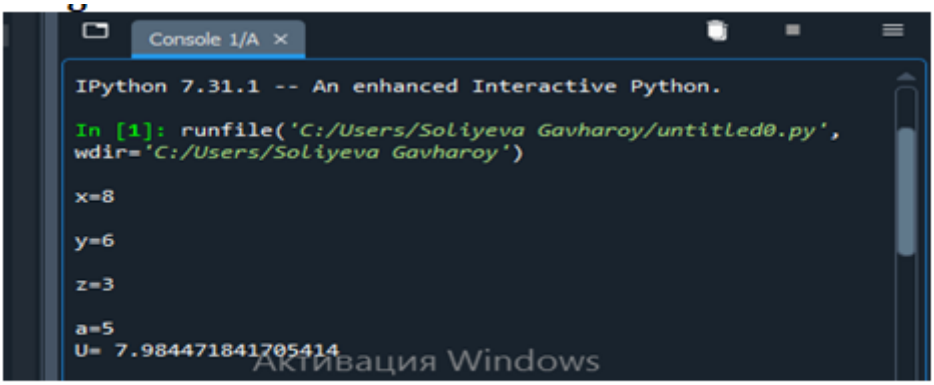
6) Obtaining and analyzing results: Program result:



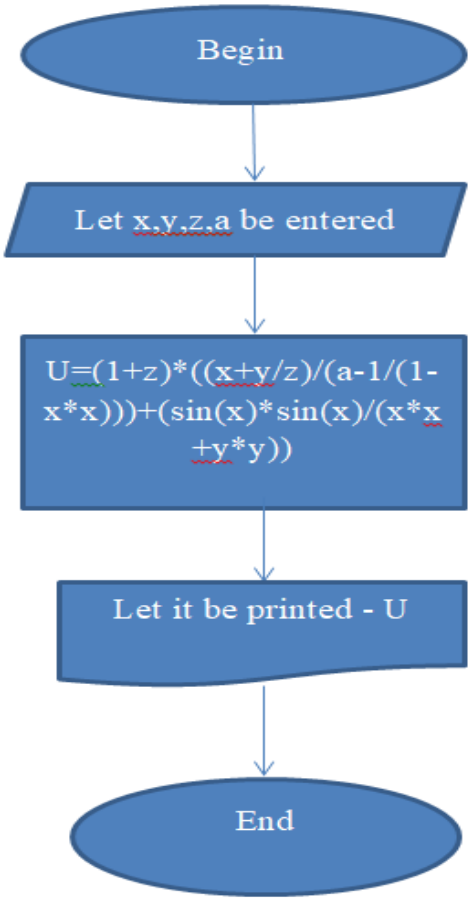
Code in Python programming language:



Program result:



Representation of the algorithm through a block diagram:



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