

WORKING WITH MATHEMATICAL FUNCTIONS IN THE PYTHON PROGRAMMING LANGUAGE

Yusupova Marjona Avaz qizi

Student of Shahrizabz State Pedagogical Institute

Mehriniso G'uzorova Asliddin qizi

Student of Shahrizabz State Pedagogical Institute

Yaxiyaxonova Muxiba Maxmudjonovna

Scientific advisor: Senior teacher of Shahrizabz State Pedagogical Institute

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Abstract. This article provides information on the importance of understanding, referring to and using mathematical functions in Python. The article will help users who have passed the initial levels of programming understand this topic. Insights are given into the current significance of the Python programming language.

Key words: Python, programming language, function, mathematical function, min, max, abs, import.

Annotatsiya. Bu maqola Pythonda matematik funksiyalarini tushunish, ularga murojaat qilish va ulardan foydalanishning muhimligi haqida ma'lumot beradi. Maqola dasturlashning boshlang'ich darajalaridan o'tgan foydalanuvchilarga ushbu mavzuni tushunishga yordam beradi. Python dasturlash tilining hozirgi kundagi ahamiyati haqida tushunchalar beriladi.

Kalit so'zlar: Python, dasturlash tili, funksiya, matematik funksiya, min, max, abs, import.

Аннотация: В этой статье рассказывается о важности понимания, обращения к математическим функциям и их использования в Python. Статья поможет разобраться в данной теме пользователям, прошедшим начальный уровень программирования. Дается представление о важности языка программирования Python в наши дни.

Ключевые слова. Python, язык программирования, функциональность, математическая функциональность, min, max, abs, импорт.

The education system of our republic on the cultivation of modern personnel is fundamental changes are being made. The reason for this is the Education Act and Reception of the "national program of Personnel Training" and scientific and technical equipment in them implementation of progress achievements in the field of production and service, is a clear indication that it is inextricably linked with socio-economic development.

Currently, modern information technologies are introduced into the educational process it is important to solve the problems of introduction, computerization of Education profession.

The Republic of Uzbekistan is boldly setting the steps of independence how big is the issue of building an informed society in the period for our country it's no secret to anyone that it matters. The Internet to a slice of our lives turned out, we are used to using his services every day.

Acceleration of modernization of teaching technologies in our republic more relevant than in countries with developed economies. Because at present, the potential of the national education system is the potential of economic development the main one that provides a practical opportunity to climb even higher embodied as a social resource.

Creation of the Python programming language from late 1980s to early 1990s started. The CWI Institute of the then little-known Netherlands host Guido van Rossum had been involved in the ABC Language Creation project. ABC to teach basic programming concepts to students

instead of language Basic was the intended language. One day Guido gets tired of these things and for 2 weeks on his Macintosh, he wrote an interpreter of another simple language, in which he certainly Borrowed some ideas of the ABC Language. Also Python 1980-1990-widely used in the years Algol-68, C, C++, Modul3 ABC, SmallTalk languages he took on many of his features. Guido van Rossum uses the language over the internet began to disperse. At this time, his “comparative review of programming languages” web with a page on the internet until 1996, a man named Steve Mayevsky was famous. That in times, Guido is a fan of the BBC comedy "Monti Payton's Air Circus Eddie and called the language he created Python to the name of Monti Payton (not to the name of the snake).

Python has a set of built-in math functions, including an extensive math module, that allows you to perform mathematical tasks on numbers.

In the Python programming language, mathematical expressions, expressions and logical operations can certainly be involved when creating a program. Operations in programming languages differ from mathematics in that they are written. In the basics of programming, we divide operations into two types:

- arithmetic operations;
- logical operations;

Action name	Action symbol		An example
Add	+	x+y	print(7+5) # 12
Subtract	-	x-y	print(7-5) # 2
Increase	*	x*y	print(7*5) # 35
To be	/	x/y	print(7/5) # 1.4
Calculate the total value of the division	//	x//y	print(7//5) # 1
Calculation of the remainder of the division	%	x%y	print(7%5) # 2
Level up x^y	**	x**y	print(5**2) # 25

A brief application of operations in the program is as follows:

Action symbol	Abbreviation of expression	Full text of the expression	An example $x=4$
+=	x+=y	x=x+y	x+=1 # 5
-=	x-=y	x=x-y	x-=2 # 2
=	x=y	x=x*y	x*=2 # 8
/=	x/=y	x=x/y	x/=2 # 2
//=	x//=y	x=x//y	x//=2 # 2
%=	x%=y	x=x%y	x%=2 # 0
=	x=y	x=x**y	x**=2 # 16

Conditional expressions are represented by a series of actions. Each of these operations takes two operands and returns a boolean value as the result. There are only two logical values, True and False.

The simplest conditional expressions are comparison operations, which are used to compare two values. Python supports the following comparison operations:

`==` - returns True if two operands are equal, otherwise False;

`!=` - returns True if two operands are not equal, otherwise False;

`>` (greater than) – returns True if the first operand is greater than the second, otherwise False;

`<` (person from) - returns True if the first operand has a person in the second, otherwise False;

`>=` (greater than or equal to) – returns True if the first operand is greater than or equal to the second, otherwise False;

`<=` (greater than or equal to) - returns True if the first operand is greater than or equal to the second, otherwise False;

In the Python programming language, it is possible to perform actions through functions. The `round(x)` function rounds to the integer part of a number, the `round(x,n)` function rounds to the *n*th unit of a number, `pow(x,y)=x**y` and the function `a,b=divmod(x,y)` is a divides *x* by *y* and takes the whole and the remainder.

An expression in the Python programming language	Explanation
<code>abs(x)</code>	Module
<code>round(x)</code>	Rounding up
<code>round(x, n)</code>	<i>n</i> – decimal rounding
<code>pow(x, y)</code>	Level up
<code>divmod(x, y)</code>	To be whole and intact

The `min()` and `max()` functions can be used to find the lowest or highest value in an iterable:

<pre>x = min(1, 19, 41) y = max(1, 19, 41) print(x) print(y)</pre>	<pre>= RESTART: C:/Users/ on/Python38/Python 1 41</pre>
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The `abs()` function returns the absolute (positive) value of the specified number:

<pre>x = int(input('x=')) y = abs(x) print(y)</pre>	<pre>= RESTART: C:/Users/ac on/Python38/Python ex. x=-98 98</pre>
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The `pow(x,y)` function returns the value of *x* to the power of *y* (*x^y*).

<pre>x = int(input('x=')) y = int(input('y=')) z = pow(x, y) print(z)</pre>	<pre>= RESTART: C:/Users on/Python38/Python x=5 y=6 15625</pre>
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`round(x,n)` is used to round the number `x` to `n` digits:

<pre>x = float(input('x=')) n = int(input('n=')) z = round(x, n) print(z)</pre>	<pre>x=115.12345 n=3 115.123</pre>
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Python has also a built-in module called *math*, which extends the list of mathematical functions.

To use it, you must import the *math* module:

```
import math
```

When you have imported the *math* module, you can start using methods and constants of the module.

The *math.sqrt()* method for example, returns the square root of a number:

<pre>import math x = math.sqrt(49) print(x)</pre>	<pre>7.0</pre>
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The *math.ceil()* method rounds a number upwards to its nearest integer, and the *math.floor()* method rounds a number downwards to its nearest integer, and returns the result:

<pre>import math x = math.ceil(2.4) y = math.floor(2.4) print(x) print(y)</pre>	<pre>3 2</pre>
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In conclusion, it should be noted that the possibilities of the Python programming language are very wide. There are also many mathematical functions. This article highlights the main features.

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