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THE USE OF PROGRAMMING LANGUAGES IN SOLVING MATHEMATICAL PROBLEMS ORQARI FACTOR FOR INCREASING MATHEMATICAL AND INFORMATIC LITERACY

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Abstract
In simple practical examples, it is possible to demonstrate the application of mathematical concepts in the study of real phenomena, for example, the concept of the derivative is the speed of movement of a material point, the linear density of a star is used to derive the integral - work force, differential problems - deriving equations of radioactive decay, etc. Of course, with this, it is inappropriate to apply the concept that it is not appropriate to involve experts in the field of mathematics in solving practical problems. It is necessary and useful to use experts in the field of mathematics in solving practical problems.

Keywords: Applied mathematics, pure mathematics, practical problems, object, model.

Introduction

The importance of mathematics in the study of a programming language is very great. Mathematical knowledge helps to facilitate programming, efficient and optimized code. Let's look at how to influence the learning of a programming language in mathematics:
Logical thinking: finding logical solutions in Mathematics, analyzing laws, and demanding working thinking. In programming, too, logical decisions, conditional operators (if, cycles and algorithms perform other support), will be necessary. Logical thinking learned in mathematics helps to be effective in programming. Mathematics cannot be strictly divided into Applied Mathematics, higher and applied mathematics are indistinguishable sections of the so-called mathematics, which cannot be strictly separated from each other. In Applied Mathematics, the solution to problems is solved by a model corresponding to the problem. When the calculation from this model is obtained that is, the result is obtained by systematic introduction into the programming language with the algorithm and block scheme.

LITERATURE ANALYSIS AND METHODOLOGY

The study of Real objects begins, first of all, with mathematical modeling of them, that is, with the description of objects, the description of mathematical models that were known earlier or were created specifically for the case being considered. In the process of studying these models, Additional other mathematical models appear, which in turn require study, and thus applied mathematics is a powerful source of new mathematical models. Research in the field of Applied Mathematics leads to the creation of additional major new scientific directions. In this sense, new areas of mathematics appeared Information Theory, Theory of

operations, theory of random processes, theory of optimal management, economic mathematics, etc. We are not mistaken to say that it is a difficult task to reach the solution of the problems of Applied Mathematics. There is a high probability that the problem will have to apply another model again within the selected model. For this reason, reaching the solution of the issue is called difficult. Models of Applied Mathematics are Hall models. Moving from one to another is not a much easier task. To do this, it is necessary to enter suitable parameters and, if necessary, come up with. And those found and entered must be sure that the content of the issue does not change qatiyan. When mathematically the models are put, we proceed to the next step if the solution obtained satisfies us.

Results

In solving mathematical problems, it helps to speed up applications of an easy problem from programming languages, but also provides accurate and effective results for complex calculations and modeling. It will be possible to easily implement mathematical problems using the programming language paython program.

Numerical computations (Numerical Computing Programming languages perform mathematical calculations

```
piton

import scipy.integrate as spi
result, error = spi.quad(
result, error = spi.qu

result, error = s

result, erro

result
lambda x: x**2, 0, 1)

p
print(f"Integrals result: {result}, with error estimate: {error}")
```

Algebraic issues **Statistics and probability**

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```
from sympy import symbols, Eq, solve
x = symbols(
x = symbol

x
'x')
equation = Eq(x**
equation = Eq(x
2 + 5*x + 6, 0)
solutions = solve(equation, x)

solutions = solve(equation, x)
pri

solutions = solve(equation, x

solu
print(solutions)
```

```
import pandas as pd
import numpy as np

fr
from statsmodels.formula.api import
from statsmodels.api import OLS
data = pd.DataFrame({

data = pd.DataFrame({

data = pd.Dat
'X': np.random.randn(100),
    'Y': np.random.randn(100)
})
model = ols(
})
mod
'Y ~ X', data=data).fit()
print(model.summary())
```

By combining the resulting solution of a given problem in a mathematical process and the experience, conclusion, knowledge achieved by the output of this solution, a programming language suitable for the problem is selected. Based on the models applied to this issue, an algorithm is compiled. Based on this algorithm, codes are written to the computer through a programming language. Once the result obtained is checked to match the result obtained in the hand account, a solution to the main issue is initiated. The solution to the main issue is difficult to come out manually, and this process can take a long time. Programming languages, on the other hand, allow us to speed up this process, to know the solution closely in small quantities, and this is very important for us.

Discussion

The purpose of studying mathematical models in Applied Mathematics will be to research a suitable specific real phenomenon. For this reason, in addition to the study of general methods in Applied Mathematics, an important place is occupied by the study of extremely private special methods associated with a given real object. Of course, when looking for a mathematical model that models the phenomenon under consideration, the mathematical resources available in the study of this model become insufficient. Even when there are methods for studying the desired mathematical model, these methods will not be adapted to obtain the required results. To solve the problem posed in such cases, it is necessary to develop new special methods, which are considered a source of new general methods in mathematics. The treatment of the use of invented methods in the program, or mathematics is possible-it also occurs in a somewhat discussed case, in the programming language, where it becomes impossible to do this work. But depending on the situation, the solution will be reached if it is necessary to refer to another programming language.

And Applied Mathematics includes such a part of mathematics in which mathematical models modeling one or another real phenomenon are studied. The study of Real objects begins, first of all, with mathematical modeling of them, that is, with the description of objects, the description of mathematical models that were known earlier or were created specifically for the case being considered. In the process of studying these models, Additional other mathematical models appear, which in turn require study, and thus applied mathematics is a powerful source of new mathematical models. Research in the field of Applied Mathematics leads to the creation of additional major new scientific directions. In this sense, new areas of mathematics appeared Information Theory, Theory of operations, theory of random processes, theory of optimal management, economic mathematics, etc.

Conclusion

A mathematical description of a specific phenomenon, process, phenomenon, etc.is obtained on the basis of one or another number of characteristics. Therefore, in Applied Mathematics, numerical methods of solving problems will be of great importance. For this reason, the development of methods designed to solve a specific issue or a wide range of issues (for example, numerical solution of the Laplace equation without linking to a concrete object) is one of the main issues in the direction of Applied Mathematics and Information Technology.

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