SymPy is a library for symbolic mathematics, which means performing mathematical calculations exactly (as opposed to inexact numeric calculations from libraries such as NumPy). Its core features include basic arithmetic, simplification trigonometry, polynomials, expansion, functions, substitution, numbers, noncommutative symbols, and pattern matching.

SymPy aims to become a full-featured computer algebra system (CAS) while keeping the code as simple as possible in order to be comprehensible and easily extensible. SymPy is written entirely in Python.

USE CASES

Education

Finance

Mechanical Engineering

PLANNED FEATURES

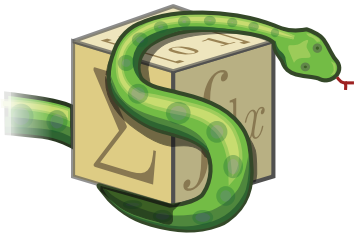
+ The SymPy assumptions system is currently split into two separate systems. The plan is to merge these two systems to that there is a single unified system.

+ Code generation is a very common use case for SymPy applications. The plan is to improve code generation so that it is easier to use SymPy to model problems and generate fast code to run those models.

+ The performance of SymPy is something that needs to be improved. This is done through both generic improvements to SymPy itself, as well as integrating the fast SymEngine symbolic library into SymPy.

PROJECT NEEDS

Documentation improvements, including both new documentation and making existing documentation more consistent.	100 hours
Revamping of the assumptions system. The assumptions system is one of the most important core parts of SymPy, but it is currently split into two subsystems which need to be merged. The performance and expressibility of these systems needs to be improved as well.	1000 hours
Refactoring of SymPy Live and SymPy Gamma.	100 hours



For more information on SymPy, including our governance structure and project roadmap, please visit

http://www.sympy.org/en/index.html

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For more information:
info@numfocus.org | +1 (512) 831-2870.