**Python Abstract**

**Project title: Abstract Algebra**

**This project uses Python libraries to program abstract algebra. Abstract algebra deals with abstract mathematical structures and their properties, independent of specific representations. Python, combined with specialized libraries, offers a powerful and versatile environment for implementing and manipulating these structures.**

**Structures:** This program uses some structures pre-defined in libraries and performs essential operations for computation.

**Benefits:**

**Focus on Axioms and Properties:** Libraries handle the low-level implementation details, allowing developers to focus on defining and verifying the structures adhere to the core axioms and properties of abstract algebra (e.g., closure, associativity, commutativity for specific operations).

**Efficiency and Accuracy:** Libraries provide optimized implementations for core operations within algebraic structures, ensuring efficiency and accurate results.

**Key functionalities:**

* **Group Theory**
* **Rings and fields**

**Limitations:**

Abstract algebra deals with structures that can be infinite in size. Groups, rings, and fields can all have an infinite number of elements. While Python can handle large finite sets, it's not well-suited for representing and manipulating infinite structures.

**Modules:**

* Tkinter
* Abstract\_algebra
* Sympy

**Team Members:**

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