

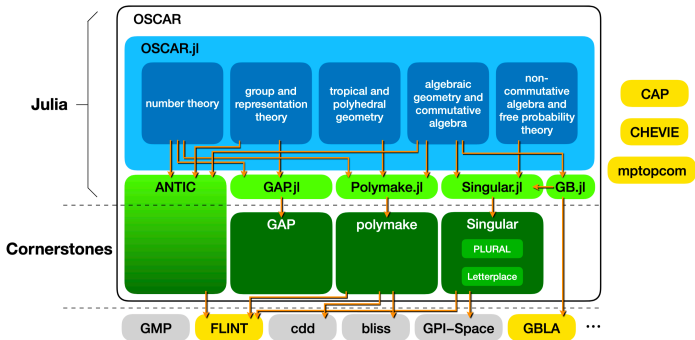
Oscar: some more details...

August 21, 2025



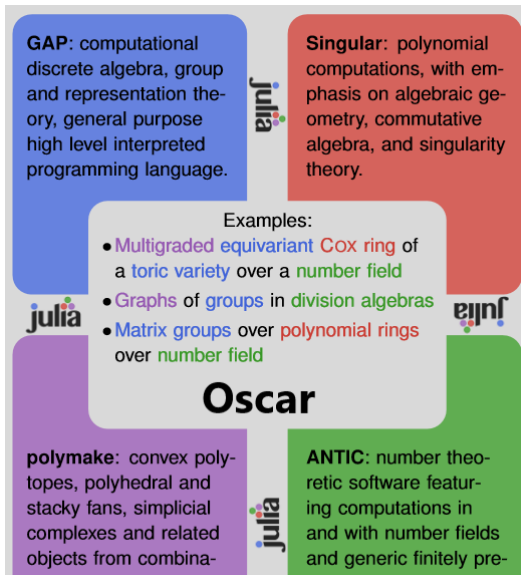
You have seen

<http://oscar-system.org/>



Or even

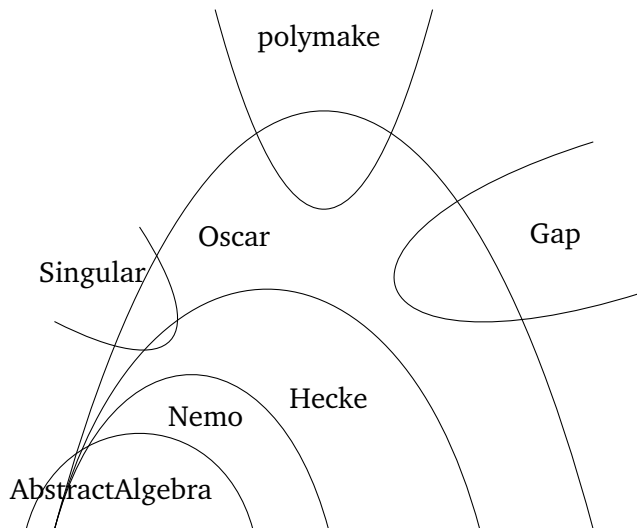
<http://oscar-system.org/>



Oscar: some more details...

More real...

<http://oscar-system.org/>



Some stats:

	LoC	#Func
Oscar	320	13
Hecke	250	10
Nemo	125	6.5
AA	95	3.8

LoC: kilo lines of code, roughly

#Func: kilo functions, roughly

Why is this important?

- ▶ in total: Oscar is huge
- ▶ there are way more functions than documented
- ▶ only part of Gap, ... is nicely accessible
- ▶ depending on your topic, you do not need Oscar
- ▶ sometimes it pays to search elsewhere
- ▶ many people are involved, thus many people to ask!

AbstractAlgebra

- ▶ basics for all rings/ fields
- ▶ polynomials, matrices
- ▶ quotient rings/ fraction fields
- ▶ power series
- ▶ modules

- ▶ interface to the flint library
- ▶ fast methods for special rings
- ▶ finite fields, integers, rationals
- ▶ power series, polynomials, matrices over special rings
- ▶ ...

Number Theory

- ▶ Ring of integers, class group, unit group
- ▶ matrix algebras
- ▶ (global) function fields
- ▶ lattices
- ▶ ...

All!

- ▶ algebraic geometry, schemes
- ▶ group and representation theory
- ▶ toric and tropical geometry
- ▶ Galois theory, Galois cohomology
- ▶ discrete geometry
- ▶ much, much more, check out the experimental stuff!