

Computing with group actions (in GAP)

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Abstract

When computing with groups — be it for studying concrete groups or for classifying objects up to symmetries — the use of group actions — orbits, stabilizers and the determination of mapping elements — are a principal tool. I want to describe techniques that can help to make such computations efficient in runtime or memory use. These strategies will be described concretely in the context of the free computer algebra system GAP. The tools used come from combinatorics, computer science, group theory and statistics.