Team Amalgam

Exact, Discrete, Multiobjective Optimization

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Outline

- Project and Customer
- Development Practices
- Current Progress
- Demo
- Next Steps
- Conclusion and Summary

Project and Customer

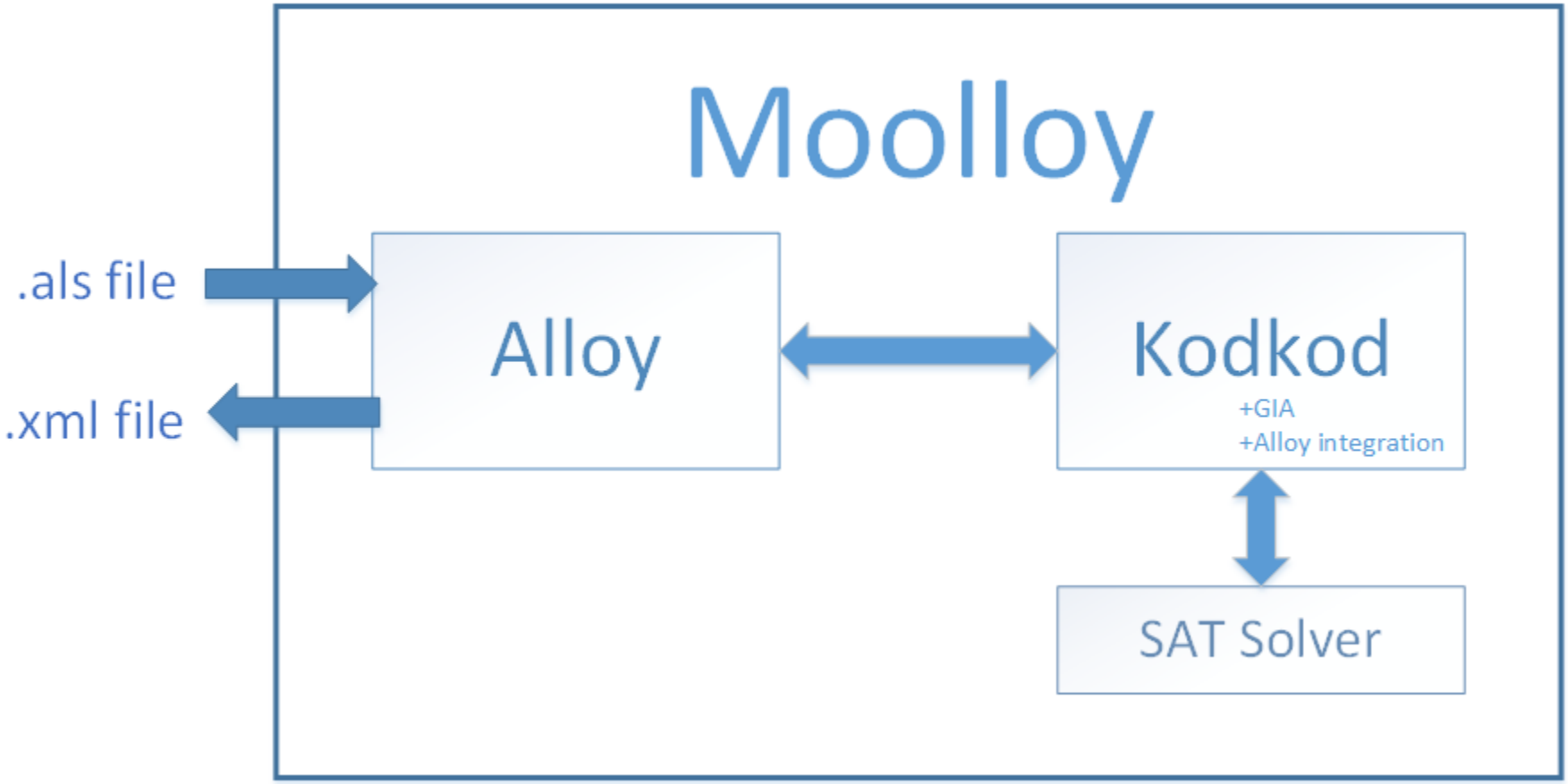
Project

Optimize the *Guided Improvement Algorithm* for solving multiobjective optimization problems

Customer

Professor Derek Rayside

Existing Moolloy System



Development Practices

Source Control
Git hosted on GitHub

Build System
Ant

Build Schedule
Continuous integration with Travis

Development Practices

Bug DB / Project Management
GitHub Issues / Trello

Automated Regression Tests
Travis + custom dashboard

Hallway Usability Testing
N/A - our focus is on the algorithm

Current Progress

Work from last term (Winter 2013)

- Created test models in Alloy
  - Toy problems: rooks, queens, knapsack
  - Case studies: aerospace, software product lines

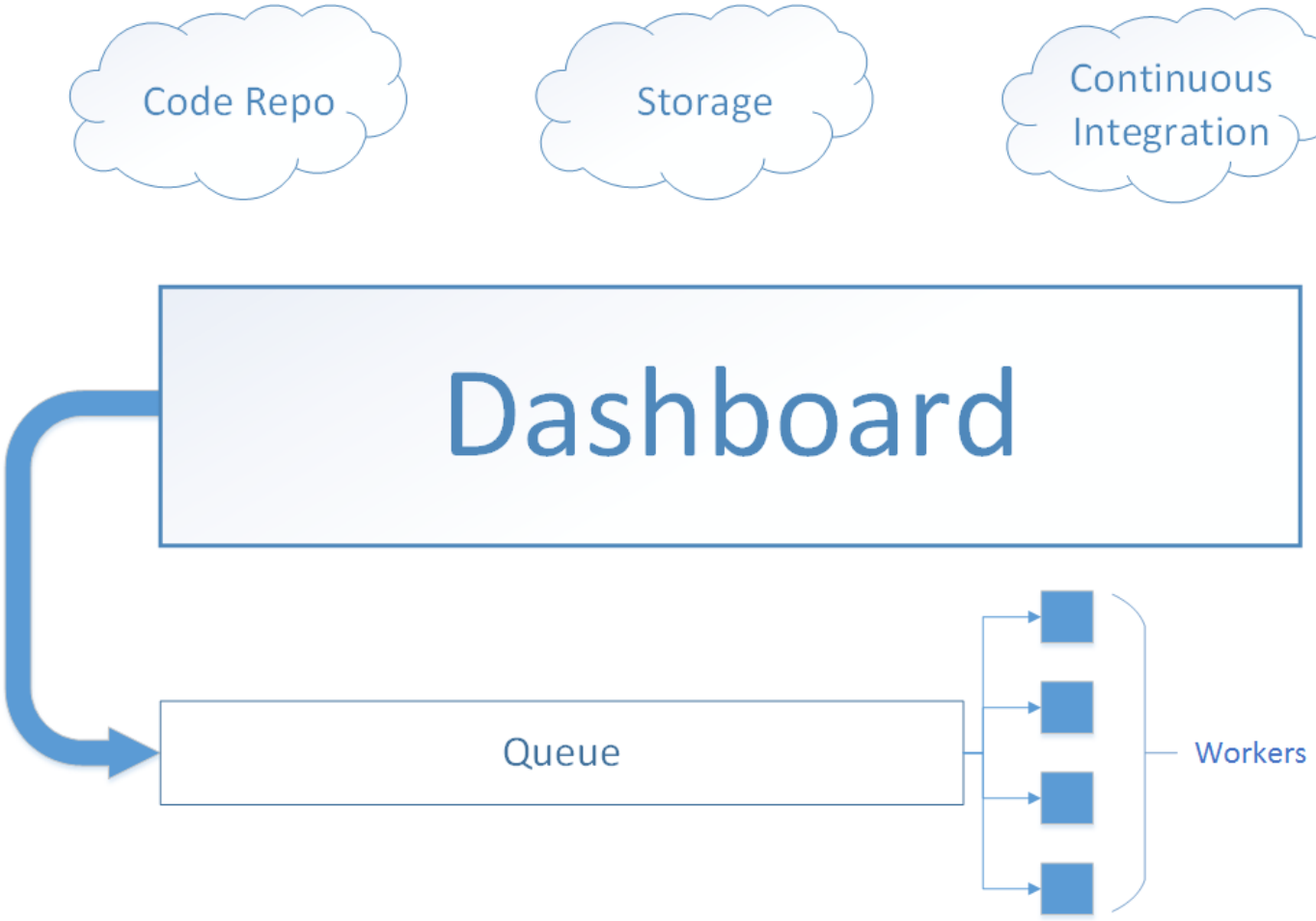
- Created test dashboard
  - Custom infrastructure for long running tests
  - Graphs of test runtimes

Current Progress

Work so far this term (Spring 2013)

- Infrastructure for development
- Integrated GIA into latest Kodkod version
- Integrated Alloy support into Kodkod

Test Dashboard



Demo

Test Dashboard

Next Steps

Short Term

- Unit tests for Kodkod
- Refactoring Kodkod
- Updating test infrastructure

Long Term

- Hook into incremental SAT solvers
- Try to get Z3 to work with Kodkod
- Parallelism

Conclusion and Summary

- Infrastructure and development practices have been a priority
- We have plans for the next steps
- Our infrastructure will make future work smoother