Reporting

Component quality/overview

Grammar overview

Type	Valid	Parse	Resolve	Capitalized	UniqueNames
EMAM	✗	✓	✗	—	—
EMAM	✗	✓	✗	✓	✓
EMAM	✓	✓	✓	✓	✓
EMA	✗	✓	✗	✓	✓
EMAM	✓	✓	✓	✓	✓
EMAM	✓	✓	✓	✓	✓
EMAM	✓	✓	✓	✓	✓
EMAM	✗	✓	✓	✓	✓
EMAM	✗	✓	✓	✓	✓
EMAM	✗	✓	✓	✓	✓
EMAM	✓	✓	✓	✓	✓

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Reporting

- Creates a report for each component in EmbeddedMontiArc, MontiCore and MontiSim
- Checks all CoCos for each components (e.g. component names start with a capital letter)
- Order everything after the root package
- Create the visualisation for each component (see visualisation from Manuel Schrick)
- Log everything
- Print collected data in a json file
- Push data and visualisation files to gh-pages
- Display the report in a proper way (table with specialized features)
- Three parts:
  - Java part (information generation)
  - Travis / shell script part (publish to gh-pages)
  - HTML / JS part (Report Representation)

Outline

1. Information Generation
2. Report Representation
3. Publishing
4. Code Quality
5. Future Work

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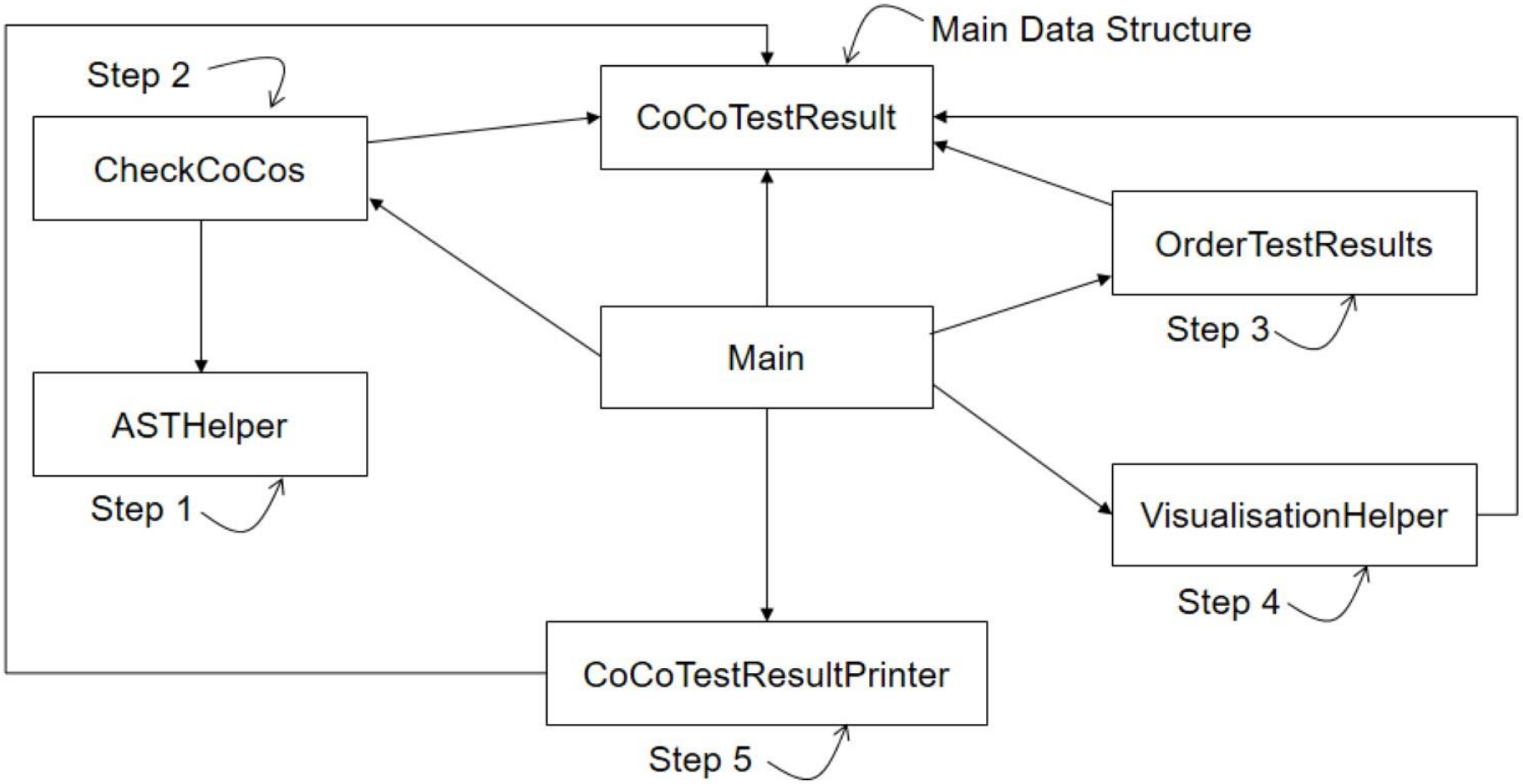
Reporting – Structure Data Generation



Classes – Data Generation 1

- Main
  - Reads user input and manages the control flow
- CoCoTestResult
  - Main data structure to store every piece of information for a model (e.g. CoCoTest results or whether it is resolvable)
- ASTHelper
  - Parses and resolves (if possible) all given models
- CheckCoCos
  - Checks all CoCos for all models given and extract the results
- OrderTestResults
  - Order each CoCoTestResult after its root package and subcomponents

Classes – Data Generation 2

- VisualisationHelper
  - Call the Visualisation Jar (Manuel Schrick) for every root model (multithreaded)
  - Pass down the visualisation information to all sub-components
- CoCoTestResultPrinter
  - Prints a json file with all test information + GitHub links + visualisation links + onlineIDE links (Jean-Marc)

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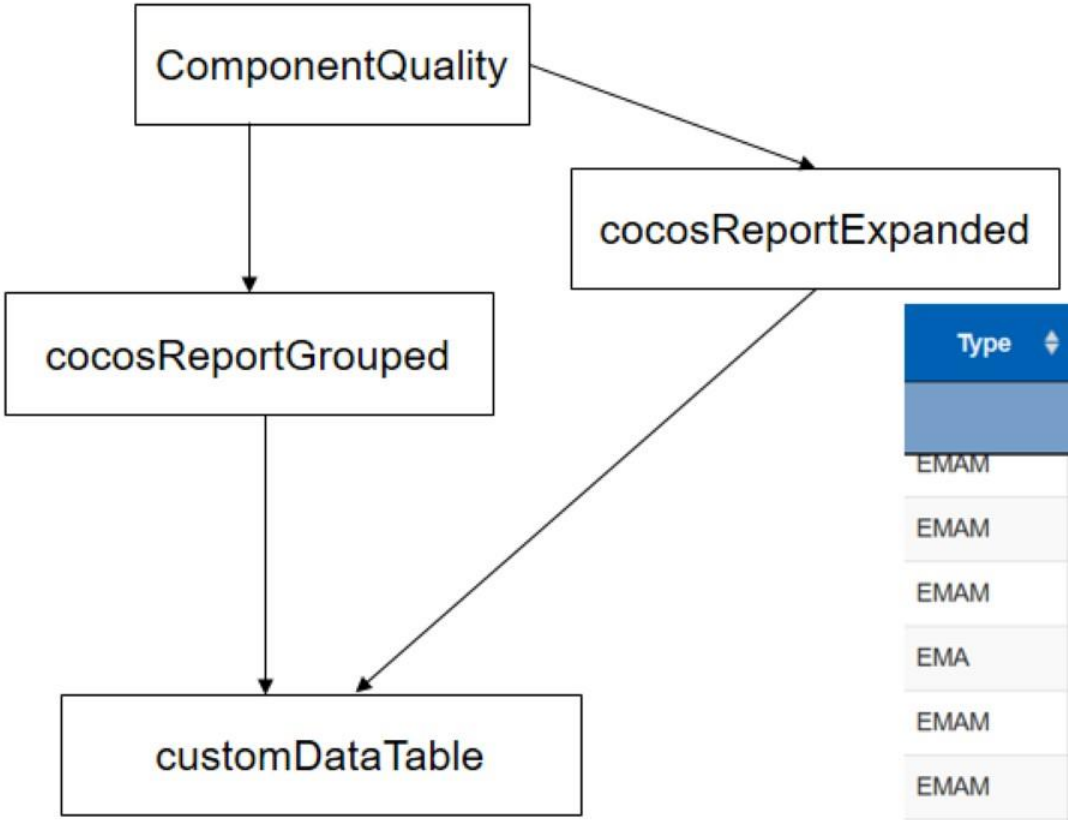


Type	Valid	Parse	Resolve	Capitalized	UniqueNames
EMAM	✗	✓	✗	—	—
EMAM	✗	✓	✗	✓	✓
EMAM	✓	✓	✓	✓	✓
EMA	✗	✓	✗	✓	✓
EMAM	✓	✓	✓	✓	✓
EMAM	✓	✓	✓	✓	✓
EMAM	✓	✓	✓	✓	✓
EMAM	✗	✓	✓	✓	✓
EMAM	✗	✓	✓	✓	✓
EMAM	✗	✓	✓	✓	✓
EMAM	✓	✓	✓	✓	✓

Report Representation

- Display report on gh-pages as a table
  - JQuery – Datatable is used as base JavaScript library
  - There are two tables, but only one visible at a time (managed in componentQuality.html/js)
    - 1. with every component grouped by its root package
    - 2. with every component itself (expanded)

1.

Expand

EmbeddedMontiArc (1322)	valid: 911
	demonstrator.simulator1 (4)
	simulator1.ConstantVelocity
	simulator1.GameOverTrigger
	simulator1.MainController
	simulator1.SteeringControl
	Documentation.controller (1)
	Documentation.controller (5)

2.

Group

EmbeddedMontiArc (1322)	valid: 911	invalid: 411
	EMAM2RosCpp/ba.intersection.ConflictComput	
	EMAM2RosCpp/ba.intersection.ConflictToStopC	
	EMAM2RosCpp/ba.intersection.ConflictToStopL	
	EMAM2RosCpp/ba.intersection.DeltaTrajectory	
	EMAM2RosCpp/ba.intersection.TrajectoryToSto	
	EMAM2RosCpp/ba.util.RelToAbsTrajectory	
	EMAM2RosCpp/test.BasicConstantAssignment	

Report Representation

- For each test category there is an according column

Type	Valid	Parse	Resolve	Capitalized	UniqueNames	TypePar	EndQualif	ParOrder
EMAM	✗	✓	✓	✓	✓	✓	✓	✓
EMAM	✗	✓	✗	—	—	—	—	—
EMAM	✗	✓	✗	—	—	—	—	—
EMAM	✓	✓	✓	✓	✓	✓	✓	✓
EMAM	✓	✓	✓	✓	✓	✓	✓	✓
EMAM	✗	✓	✗	—	—	—	—	—

- Tick for passing the category (Valid is only passed if every other category is passed)
- Cross for not passing
- Minus for not getting to the corresponding category (e.g. parsing failed before testing whether it can be resolved)

Report Representation – Extra Features

- For better readability the following features were added. Features are accessable for other usage in customDataTable.js
  - Expansion of child components (see previous slide)
  - A floating header with the project information
  - Current project name on top of the window (grouping)

EmbeddedMontiArc (1322) **valid: 911** **invalid: 411**

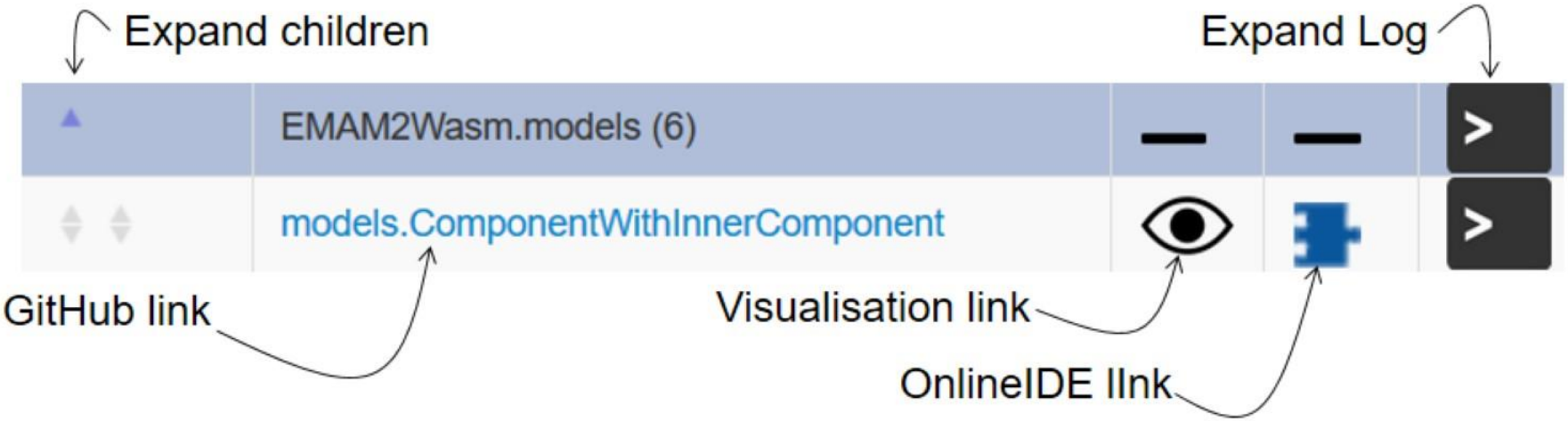
  - Log mechanic

EMAM2RosCpp/test.InstanceArrayComp

Path:	/EMAM2RosCpp/src/test/resources/test/InstanceArrayComp.emam
Log output:	[INFO] do Parser Test ========== [INFO] Parser Test success [INFO] do Resolve Test ========== [INFO] Resolve Test success [INFO] do CoCo Tests ========== [ERROR] 0xAC008 Port basicPorts1.in1 of subcomponent test.InstanceArrayComp.basicPorts1 is not used! [ERROR] 0xAC008 Port basicPorts1.in2 of subcomponent test.InstanceArrayComp.basicPorts1 is not used! [ERROR] 0xAC008 Port basicPorts1.out1 of subcomponent test.InstanceArrayComp.basicPorts1 is not used!

Report Representation - Controls

- The Main Controls are:
  - Switching between the grouped and expanded view of all components
  - Expand children in the grouped view
  - Link to the GitHub – file
  - Link to the Visualisation
  - Link to open with the onlineIDE
  - Open the Log



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Travis Build

- Each night Travis builds and publishes the report
- Step 1: Pull all repositories from EmbeddedMontiArc, MontiCore and MontiSim
- Step 2: Create the report from all models inside
- Step 3: Zip all models (in order for the onlineIDE to work)
- Step 4: Push the report + visualisation files + zip files to gh-pages (for this, a special deploy key was created)
- The script files are accessable and reusable for other purposes in the EmbeddedMontiArc/reporting repository

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Code Quality

- The tests were suspended due to the amount of changes in the format of the test results
- CoCo checks are only reused and should work properly
- There is a build each night, so the build is stable
- Code Segments are well sorted and refactored
- Code can be reused with little effort
  - ASTHelper
  - Orderable Test Results
  - Visualisation Generation
  - All JavaScript methods are hold generally

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Future Work

- There already is a report for all grammars for MontiCore
  - Lists every Grammar, groups it after mainGrammars and others
  - Offers the GitHub link and onlineIDE view
- Creation of a web assembly with emam2wasm is currently in work
- In EmbeddedMontiArcStudio there is already a feature build in to automatically test all stream tests and present the results
- Web assembly generation and stream testing are heavily time intensive and therefore are not suitable for Travis (due to the time restriction for a build of one hour)