

MICHIGAN STATE

UNIVERSITY

Beta Presentation

clUML: Browser-Based UML Editor

The Capstone Experience

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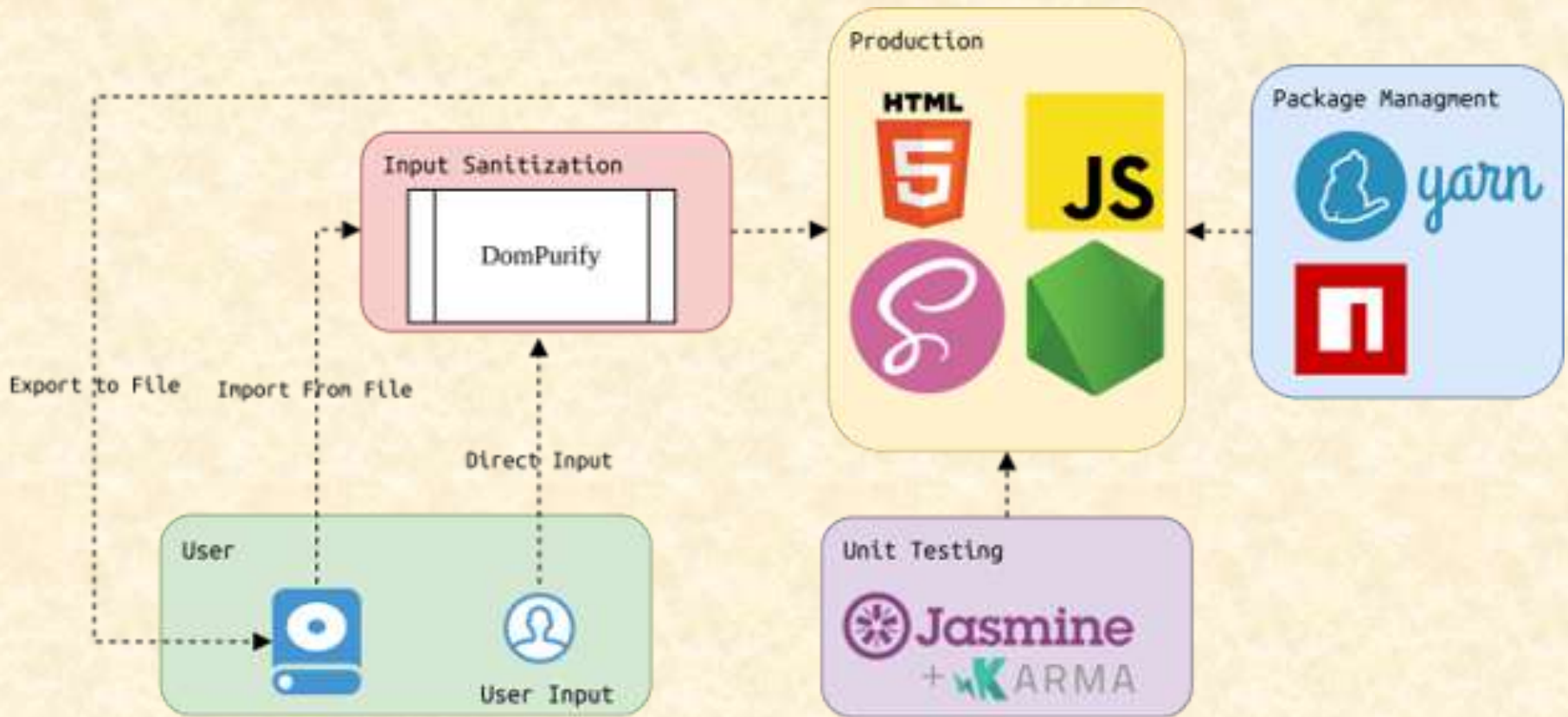
*From Students...
...to Professionals*

Project Overview

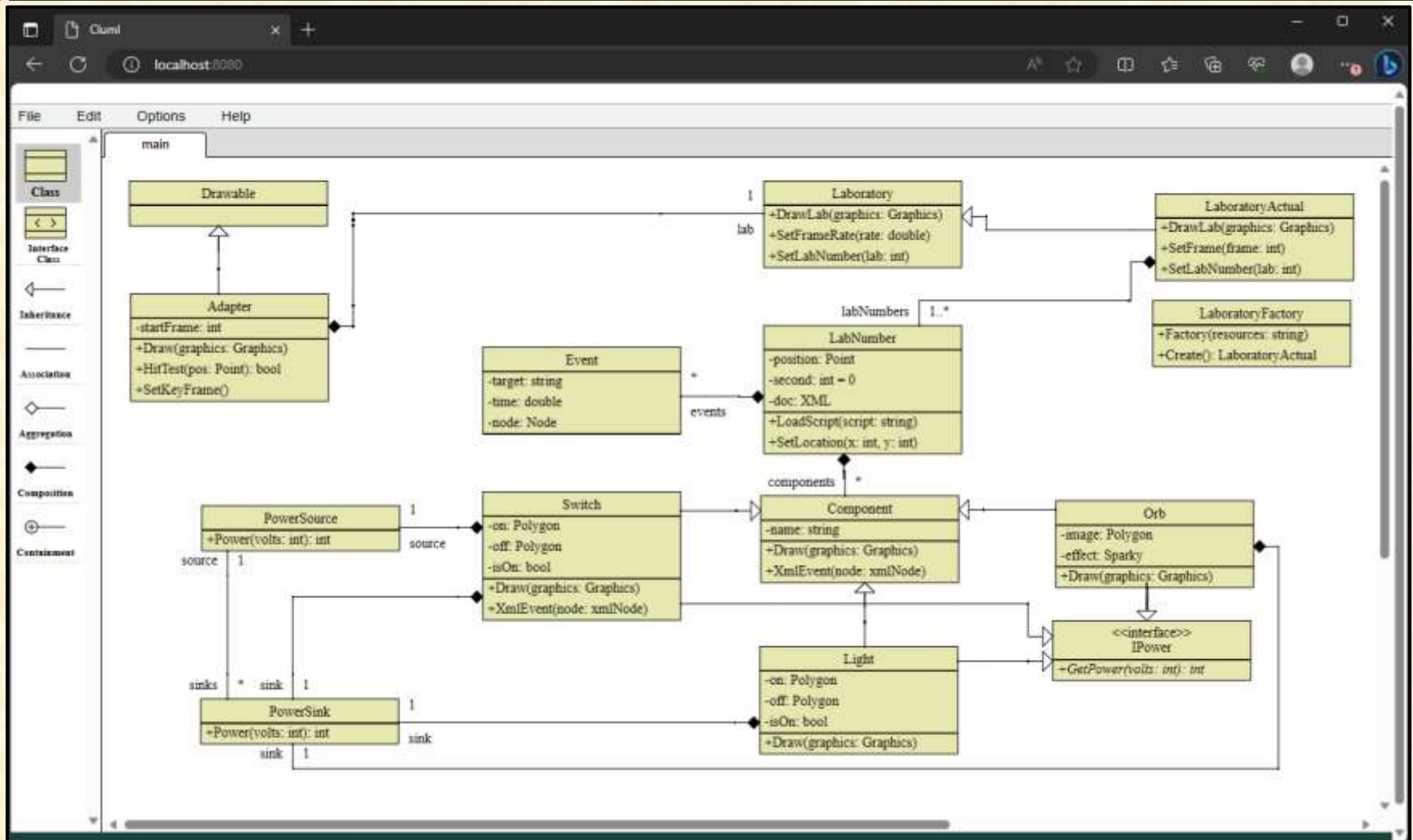
- An easy to use web-based UML editor created for Michigan State University CSE
- To be integrated in CourseLib websites and used in future courses
- Includes a sanity check for common mistakes
- Supports both mouse and touchscreen devices
- One of many interactive programs MSU CSE has created to facilitate student learning



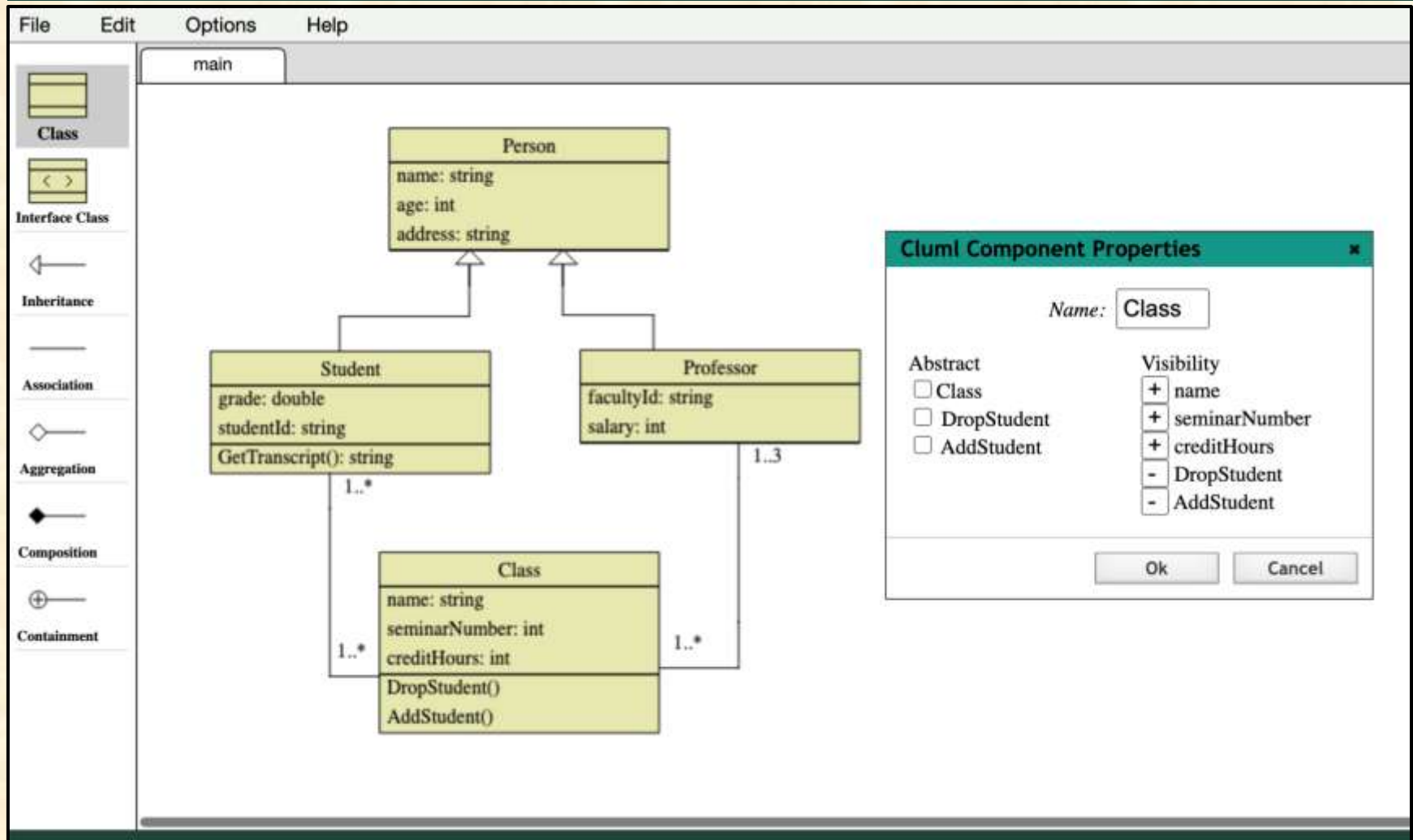
System Architecture



Overview



Properties of Classes



Sanity Checking

The screenshot shows a software development environment with a menu bar (File, Edit, Options, Help) and a toolbar. A class diagram is displayed in the center, showing a class named **cLass** with the following attributes and operation:

- attribute: String
- atribute**
- attribute: string
- ooperation()**

On the right, a dialog box titled "Cluml Sanity Check" displays the following errors:

Sanity Check
(4) errors have been detected

CS0402	Class cLass : Name not capitalized
CS0110	Attribute atribute : Type missing
CS0203	Operation ooperation() : Name's first character is not capitalized
CS1100	Class cLass : Multiple attributes with the name attribute

An "Ok" button is located at the bottom right of the dialog box.



Help Sections

The screenshot displays the Cluml IDE interface. On the left, a sidebar contains icons for Class, Interface Class, Inheritance, Association, Aggregation, Composition, and Containment. The main workspace shows a UML class diagram with two classes: ParentClass and ChildClass. ParentClass has attributes 'parentAttribute: string' and an operation 'ParentOperation(): string'. ChildClass has attributes 'childAttribute1: int' and 'childAttribute2: float'. An inheritance arrow points from ChildClass to ParentClass. A 'Cluml Help' window is open on the right, titled 'How to Edit a Class in clUML'. It contains three sections: 'Adding New Attributes / Operations', 'Editing Existing Class Name / Attributes / Operations', and 'Deleting Attributes / Operations'. The 'Adding' section explains that right-clicking a class brings up a context menu with an 'Add' option, and that 'Ctrl + A' can be used to add attributes. The 'Editing' section states that double-clicking a component enters editing mode, and changes are confirmed with the Enter key or by clicking away. The 'Deleting' section notes that double-clicking an attribute enters editing mode, and the attribute is deleted by deleting the text in the empty input field. An 'Ok' button is at the bottom right of the help window.

Cluml Help

How to Edit a Class in clUML

Adding New Attributes / Operations: If you would like to add a new attribute to the class, right-click on the class (long touch on a touch screen) to bring up the class' context menu. Then, click on the first option, which says "Add". This will add a new default attribute to the class. You can also add a new attribute to the class by using the keyboard shortcut "Ctrl + A" while the class is selected. The class will automatically resize itself to add space for the new attribute. If you'd like to add a new operation to the class, add a new attribute to the class and edit the attribute so that it includes parentheses (()) before the colon (:), and the class will automatically detect and change the attribute to an operation.

Editing Existing Class Name / Attributes / Operations: If you would like to edit an existing class name / attribute / operation, you can double-click on the component of the class that you'd like to change to put the component into editing mode. Once you are in editing mode, you can type in your changes and confirm them by either pressing the Enter key or by deselecting the component you are editing by clicking off of it.

Deleting Attributes / Operations: If you would like to delete an attribute / operation, simply double-click on the attribute / operation you would like to delete to put it into editing mode, then delete the text from that attribute / operation so that you are left with an empty input. If you confirm changes with an empty input by either pressing the

Ok

What's left to do?

- Stretch Goals
 - Allow changing the order of attributes and operations
 - Stereotypes and enumeration
 - Text comments on diagrams
 - Print only the contents of the canvas
- Other Tasks
 - Add manual way to resize classes
 - Finish unit testing for associations



Questions?

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