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Towards a New Generation of Software Design Environments: Supporting the Use of Informal and Formal Notations with OctoUML



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Outline

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 - Informal vs formal notations
- Approach
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Introduction: Informal vs. formal Notations

- Software designers often combine informal with formal notations.
- Software designers often alternate between Whiteboard and CASE-tools.
- Formal notations are restrictive, informal are not.

Tools supporting Informal Notations

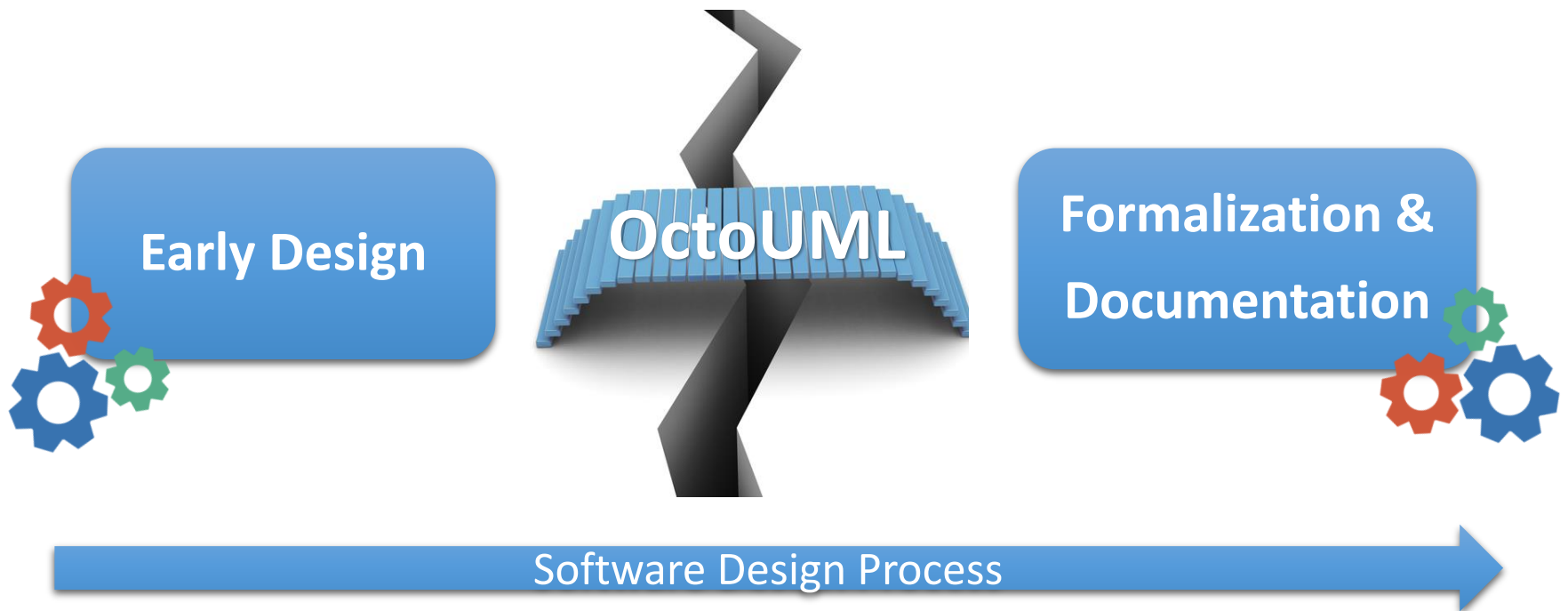
Whiteboards,
Paper and Pen,
PowerPoint,
Visio,
etc.

Tools supporting Formal Notations

CASE-tools;
StarUML,
Rational Rose,
Enterprise Architect,
etc.

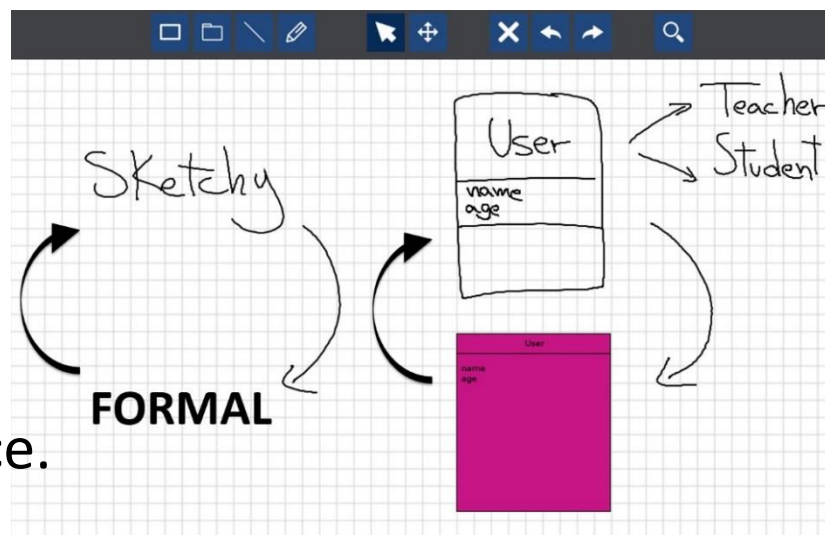
Approach: OctoUML (1/2)

- OctoUML bridges the gap between:

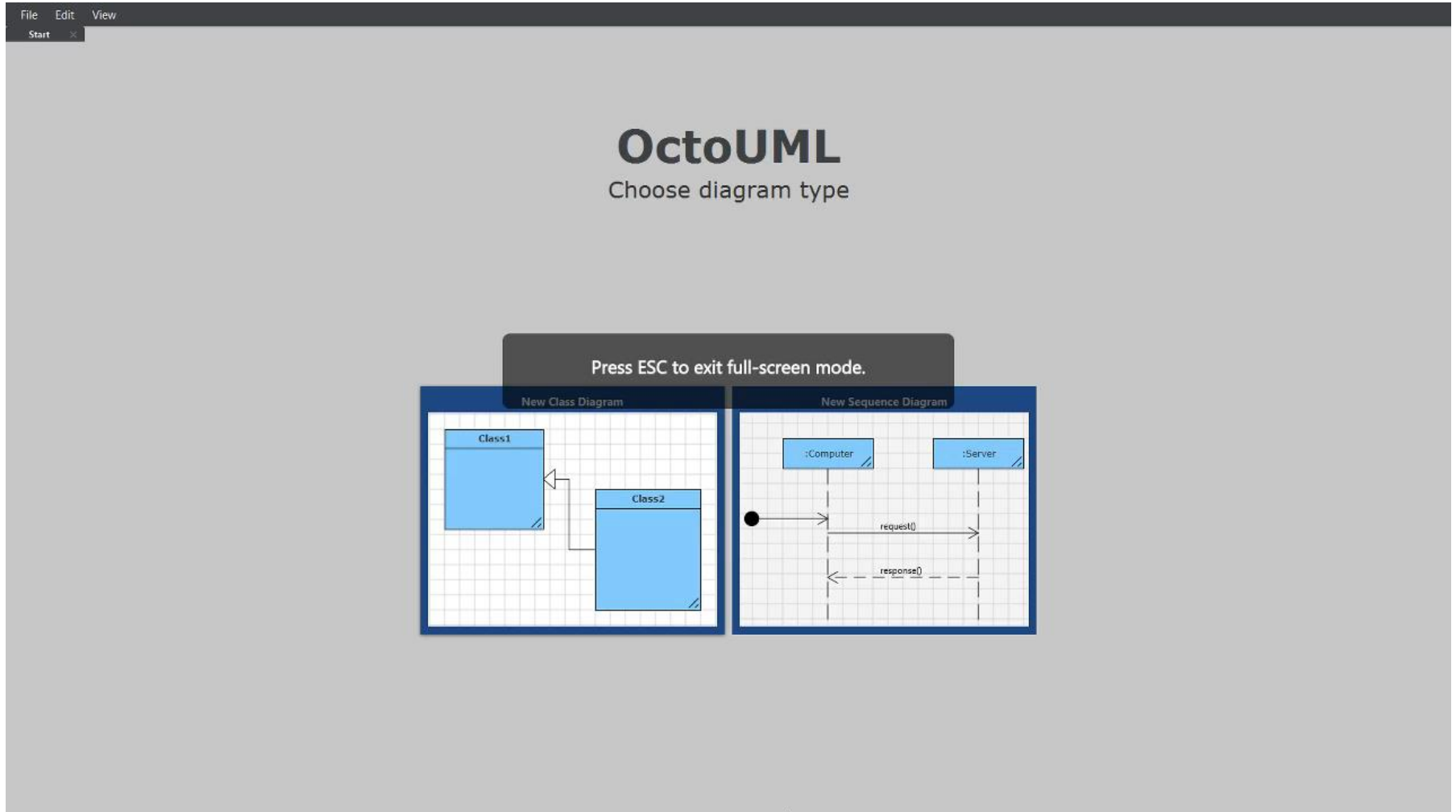


Approach: OctoUML (2/2)

- OctoUML allows the mix of informal and formal notations.
- It supports different input methods (e.g. mouse, keyboard, touch).
- It provides a selective recognition mechanism.
- It provides multi-user support on a single input device.



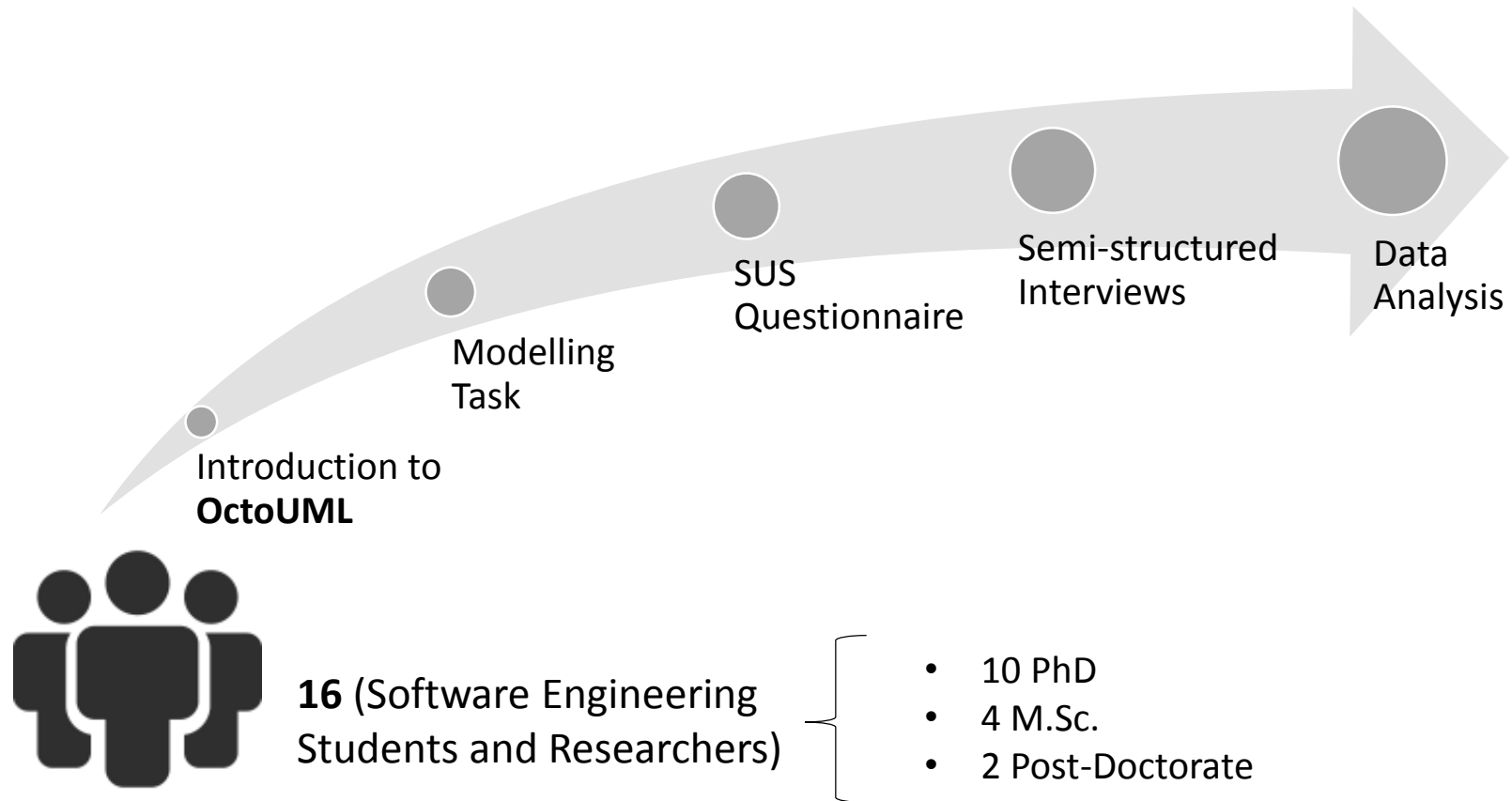
Approach: Demo



Research Questions

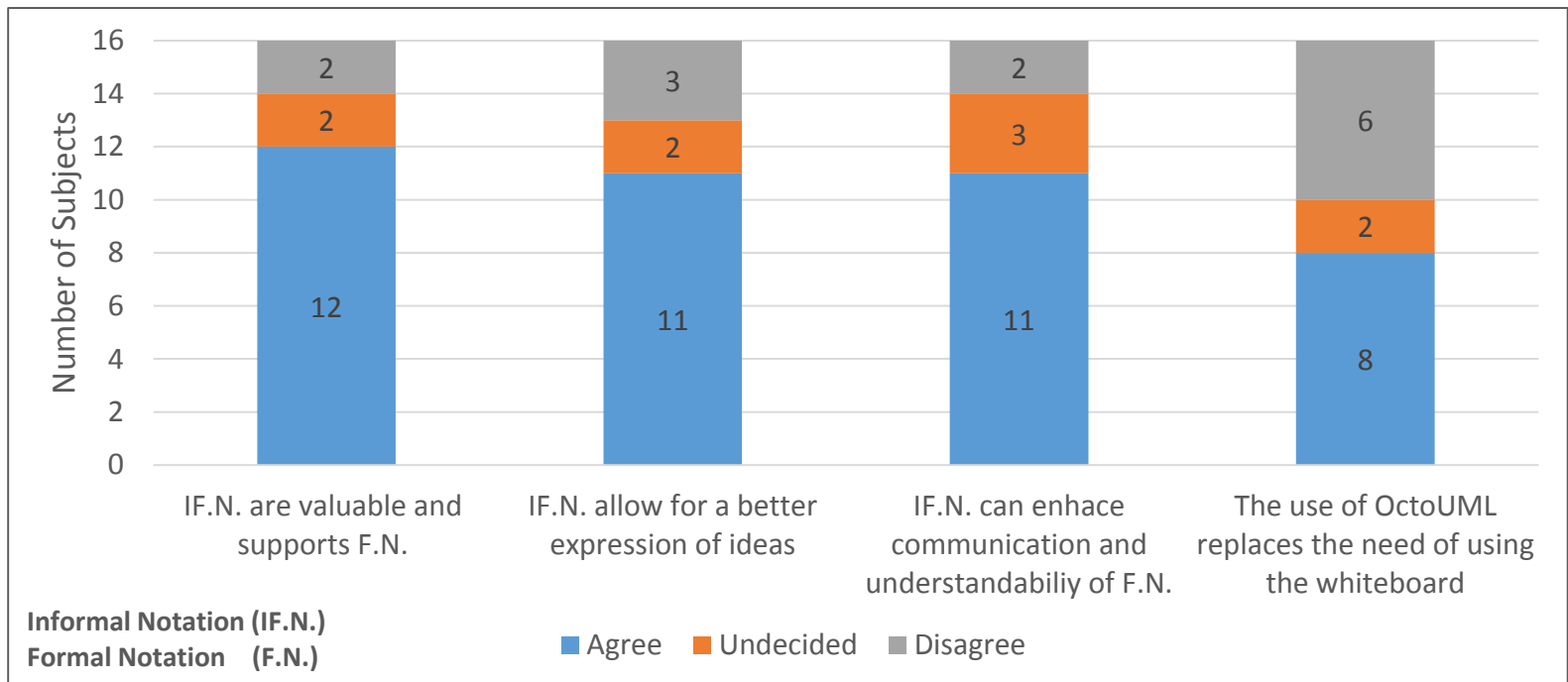
- **RQ1.** Does OctoUML provide a usable environment considering issues like ease of use, efficiency and user satisfaction?
- **RQ2.** Does support for mixing informal and formal notation better support the software design process?

Evaluation: User Studies



Results

- System Usability Scale (SUS) Questionnaire:
 - OctoUML's score is 78.75
- Interviews:



Recap

- Case-tools lack support for design flow.
- Allowing the creation of both informal and formal notations in one design environment can effectively support the design process and its flow.
- Usability of OctoUML:
 - ✓ Easy to use
 - ✓ Efficient
 - ✓ Subjects enjoyed their experience

Current & Future Work

- **In the mean while:**

- OctoUML has become multi-modal.
- We have enabled remote collaboration.
- Sequence diagram is recently supported.



- **Future Work:**

- We want to integrate OctoUML with other software engineering tools to support different development and analysis tasks.



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Thank You For Your Attention!



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The pre-release version of **OctoUML** and the source code are available at:

www.rodijolak.com