

Modeling and Analysis: Modularity and Integration

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Abstract

More substantial models are created step by step. We will discuss the order of creation and modularity considerations. The modules have to be integrated into the desired substantial model.

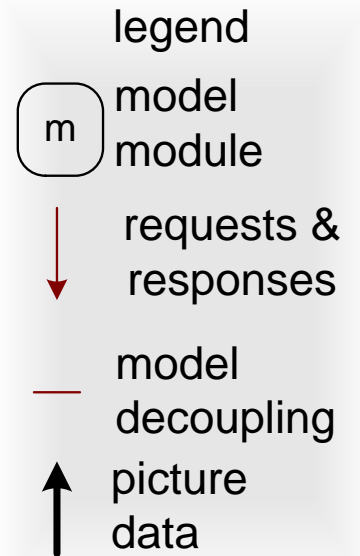
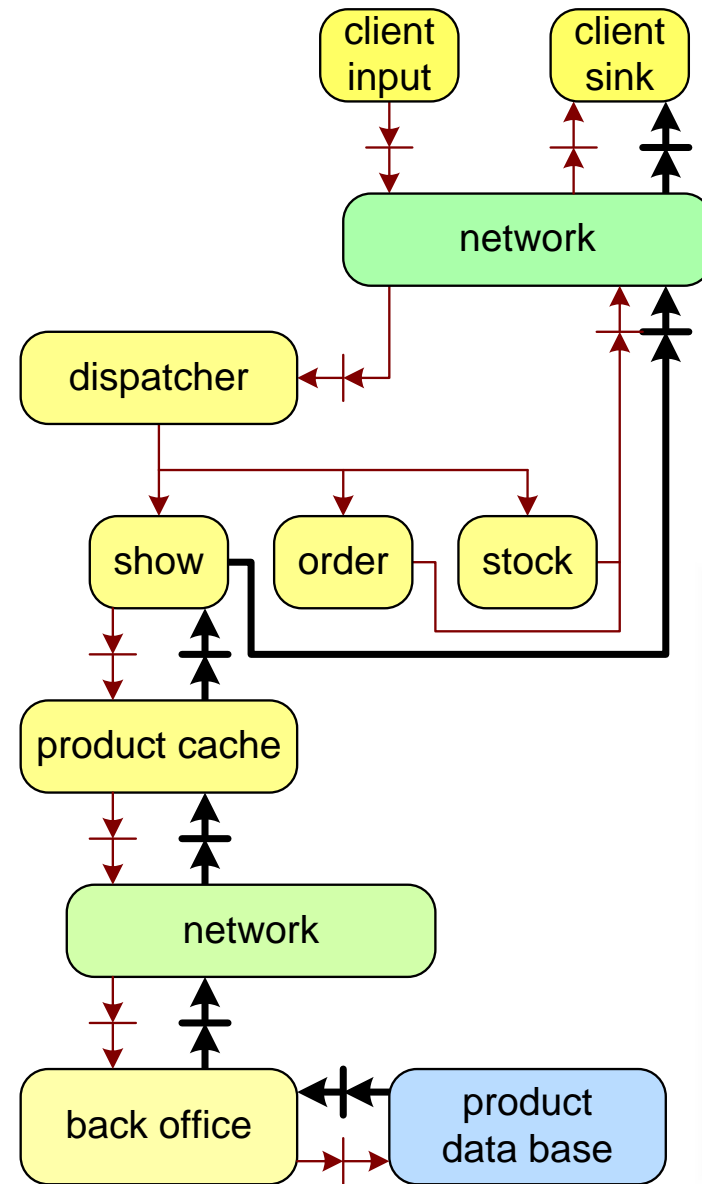
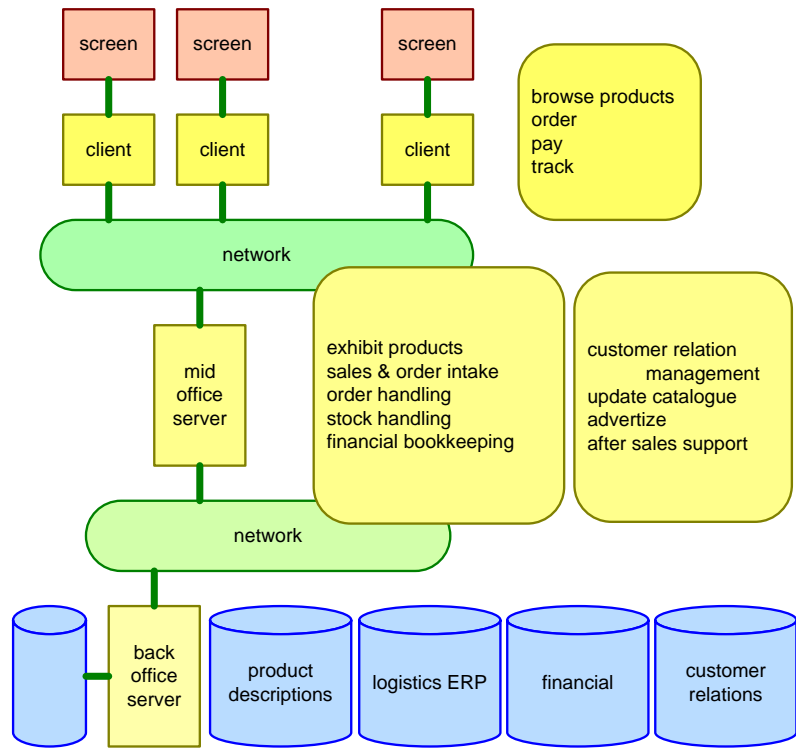
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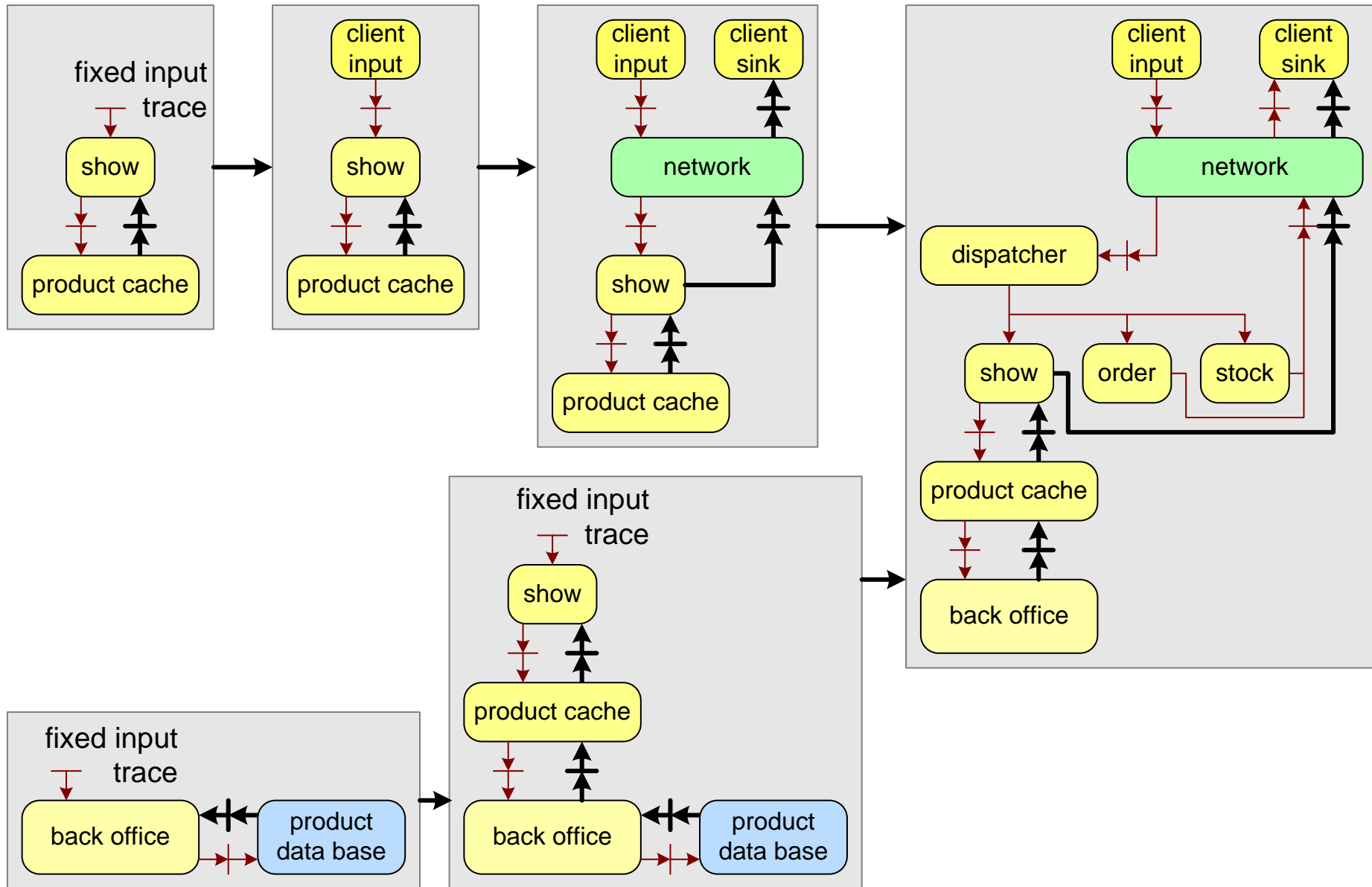
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Example of (Partial) Flow Simulator



Example of Incremental Model Creation



Approach for Incremental Model Creation

Start with the hottest issue

what creates the most discussion or uncertainty?

Ensure immediate feedback

does this model help to answer the questions that we have?

Keep flexible decoupling point

e.g. human readable/editable files

Extend model only for a good purpose

don't integrate models because it *can* be done

Create effective visual outputs

simple animations, graphs, tables, ...

Refactor regularly

based on increasing insight, feedback and purpose

Attention Points for Every Integration Step

Does the output of the integrated model match your expectation?

Can you explain the model behavior?

Can you explain the variation of the output?

