Software Visualization

Group session 11

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RC'TERYX

Agenda

- Quick recap
- Quiz
- Case from previous exam
- Work on deliverable 3 and presentation

Repetition from lecture

Software Visualization

- Visual representation of software-related data
- Helps developers understand complex systems
- Makes it easier to identify patterns, trends and problems

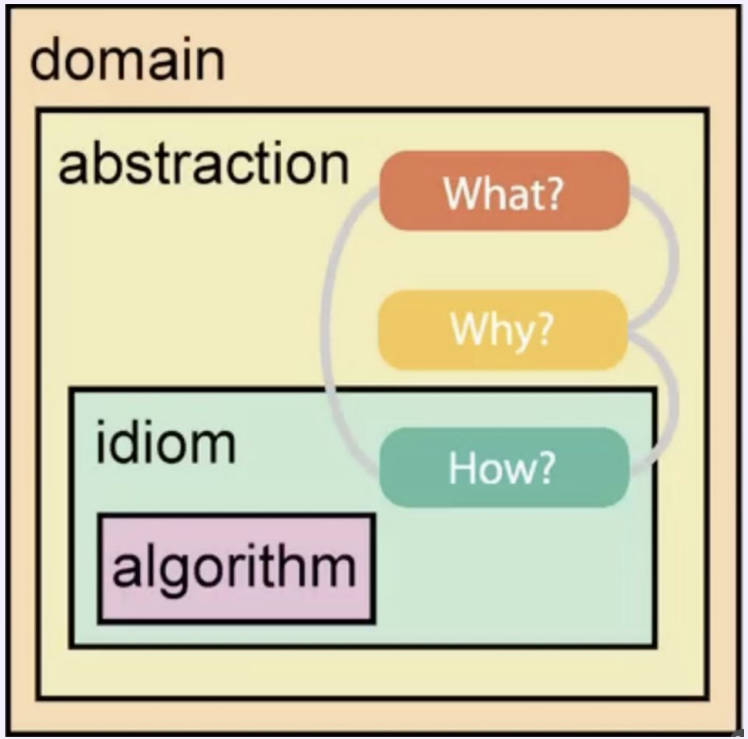
Treemaps ➜ Software structure and hierarchies

Network graphs ➜ Dependencies between components

Text visualization ➜ Source code and changes

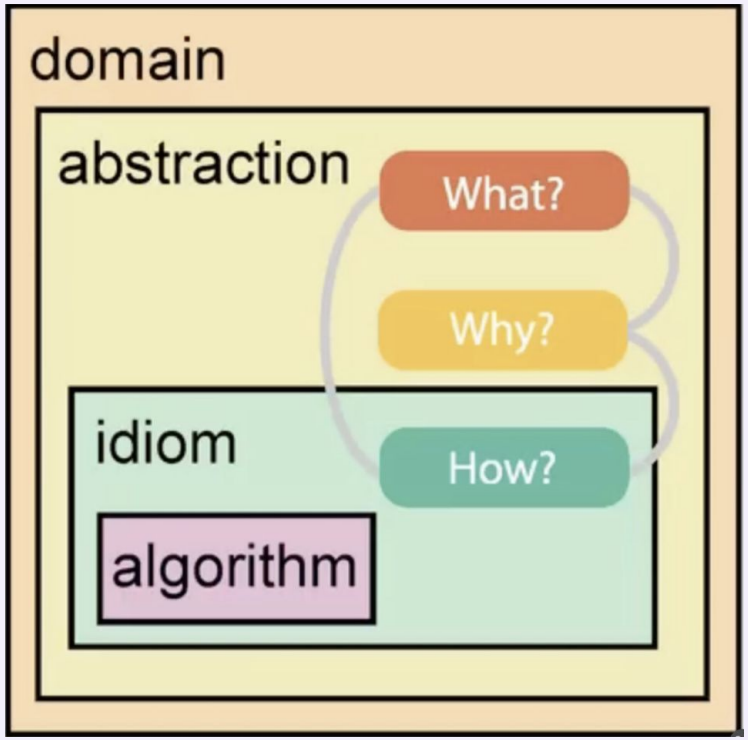
Problem-Driven Visualization Design

- Domain Problem: Who are the users, and what do they need?
- Data Abstraction (what): What data should be visualized?
- Task Abstraction (why): What should users be able to discover or do?
- Visual Encoding and Interaction (how): How should the data be represented visually?
- Algorithm: How is the visualization computed?



Problem-Driven Visualization Design - example

- Domain Problem: Developers need to identify problematic code
- Data Abstraction (what): Files, code complexity, number of changes
- Task Abstraction (why): Identify files that may need refactoring
- Visual Encoding and Interaction (how): Treemap where size represents file size and color represents code health
- Algorithm: Calculate metrics and generate the layout



Marks and Channels

Marks = What graphical elements represent the data?

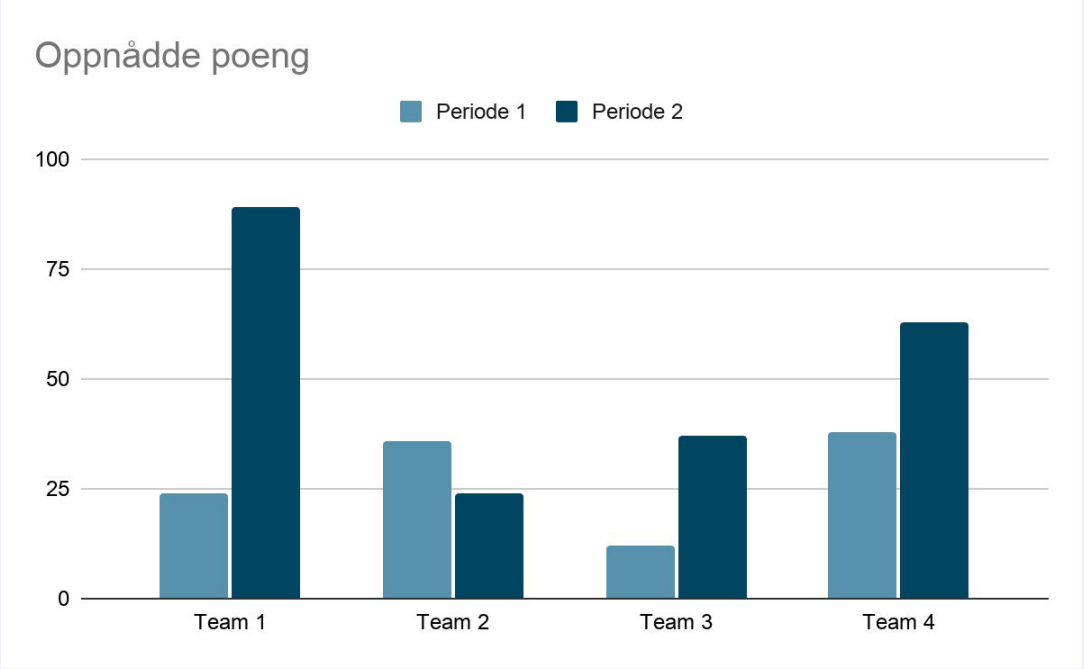
- Points
- Lines
- Areas

Channels = How do we represent attributes using these elements?

- Position
- Size
- Color
- Shape

Marks and Channels - example

- The bars are marks
- Their height and color are channels



Quiz!

Case from previous exam

Case description

A large Norwegian Public Service Company (Company X) has over 1000 employees and develops and maintains a comprehensive amount of IT-systems.

Company X hires consultants from a consultant company (Company Y). The consultants consists of a team of 5 and are hired for developing a solution to facilitate communications between internal systems within in Company X. The consultants develops increments using Scrum and the sprints lasts for 2 weeks.

Company Y has run into problems as they are dependent of approvals given by Company X in order to produce new features in each sprint. Company X has a physical weekly meeting were decisions are made - this means it can in worst case take up to one week before Company Y gets approvals.

Company X is unsatisfied as Company Y has not finished the solution within 1 year, which they were budgeted for. This means the project will be way more expensive than what first planned. However, since the solution is crucial for Company X, Company Y needs to finish the solution no

4.2 Process improvements

Task A

Describe two process improvement techniques you have learned about in this course. (6p)

Task B

Apply the two process improvement techniques you described in the previous task (Task A) on the process described in the case description. (10p)

4.3 Case reflection

The case describes a team trying to work agile within a traditional (waterfall-driven) business.

Task A

Reflect on challenges with working as an agile team in a waterfall-driven organization. (6p)

Task B

Reflect on challenges when changing a large company (more than 1000 employees) from waterfall to agile. (6p)

4.1 BPMN

Model a BPMN diagram of a Sprint with the current process as presented in the case description. (15p)

Have a nice weekend! :D



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