Design Matrix

Description of design challenge

Name:

Topic overview & Solution details:

If useful, link relevant documents

Result of design decision

Date:

Status: ☐ Approved ☐ Rejected

Decided by:

Stakeholder:

Summary:

Simple

- ☐ Is the solution easy to understand (even in the future)? Is there a solution that is easier?
- ☐ Does it avoid „clever“ magic and overly generic approaches?
- ☐ Is the solution explicit so there is less room for misinterpretation or for ugly surprises?
- ☐ Are there unrequested features we can omit?

notes

Powerful

notes

- ☐ Is the solution foresighted enough?
- ☐ Does it take non-functional requirements into account?
- ☐ Is the solution generic and reusable?
- ☐ Which parts will change in the near future? Which ones continuously? What should stay stable, what flexible?

Abstract

- ☐ Does the solution fit into the big picture (e.g. uniformity, structure and architectural constraints)?
- ☐ Is each part of the solution understandable on its own?
- ☐ Are modules cohesive and is coupling low?

notes

Concrete

notes

- ☐ Does the solution avoid duplication of functionality (also think about other modules and systems)?
- ☐ Are there places we can refactor/optimize in the same breath?
- ☐ Can the solution grow naturally over time? (e.g. allow further changes/refactorings)

Pragmatic

- ☐ Does the solution provide value early on?
- ☐ Does the solution really address the customer‘s goals/use cases?
- ☐ Does the solution really fit to the timeline?
- ☐ Can we use already existing Code (snippets, libraries, services)?

notes

Idealistic

notes

- ☐ Is this the right solution?
- ☐ Is it consistent with the rest of the system?
- ☐ Is ensured that there are no workarounds or bad decisions that will produce serious problems later?

Robust

- ☐ Is the solution hard to misuse?
- ☐ Are the chances for something to go wrong minimized?
- ☐ Are standards used and adhered to?
- ☐ Are used technologies/libraries stable?
- ☐ Do all involved people have the necessary knowledge?

notes

Technologic

notes

- ☐ Is there already an existing technology or library that helps us?
- ☐ Is the solution state-of-the-art?
- ☐ Is the solution a technologic progress?
- ☐ Can we get rid of legacy code?

Design Matrix Manual

Thank you for using the Design Matrix. We hope it will help you getting better and well-balanced solutions.

Goals

The Design Matrix is an instrument to…

…reflect design decisions from different perspectives

…avoid neglecting relevant points.

Overview

The Design Types System describes four dimensions of design:

simple vs. powerful (green)

abstract vs. concrete (blue)

pragmatic vs. idealistic (red)

robust vs. technologic (yellow)

Each dimension represents two contrary but related perspectives that need to be considered when making a design decision. The Design Matrix provides a set of starting questions that help you to consider a design decision from all these perspectives. An overview:

simple stands for simple solutions, no magic, nothing sophisticated just easy to read/maintain (symbol: spear).
powerful stands for foresighted solutions, generic and flexible (symbol: halberd).
abstract stands for having the big picture in mind and keeping the bird's eye view (symbol: eagle).
concrete stands for knowing the details, being able to breathe code like a fish can breathe water (symbol: fish).
pragmatic stands for creating value with a very customer focused perspective (symbol: money bag).
idealistic stands for focusing on quality and professionalism, for avoiding dirty hacks and 80 percent solutions (symbol: cross).
robust stands for stability and reduction of risks (symbol: tower).
technologic stands for the potential new technology offers (symbol: cannon).

How to Use the Matrix

You typically use the Design Matrix for preparing a design decision. It helps you identify relevant questions to ask so you can check whether you've missed an important point.

Basic Concepts

- For each dimension and each perspective examine your intended solutions using the questions provided by the Matrix.
- Often the questions lead to further questions that need to be considered.
- Use the notes boxes to write down answers, findings, or further questions.
- If you use the Matrix as a means to document you decision, use the header area to note down relevant meta data.

Advanced Usage

- The note boxes can be used to write down the arguments why and how this perspective is relevant and why not.
- The Matrix can also be used to compare several solutions for the same problem. Use a separate matrix for each solution and use the header area to note down which solution this matrix belongs to.
- You can use the matrix as documentation for important design decisions.
- You may establish team rules that certain important design decisions should be checked and/or documented using the Design Matrix.
- Not every aspect is equally important in a particular project. Mark important aspects in the matrix or even assign weights. In this way you can discuss and communicate the focus of further design decisions. This is especially helpful as a preparation for a discussion using the Design Cards.

Further Information

Like to get to know more?
Have a look at our free design type questionnaire and learn more about yourself, your colleagues and how to make discussions even more productive.
Also try out our Design Cards.
Have a look at **design-types.net**

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Have fun with the Design Matrix!