

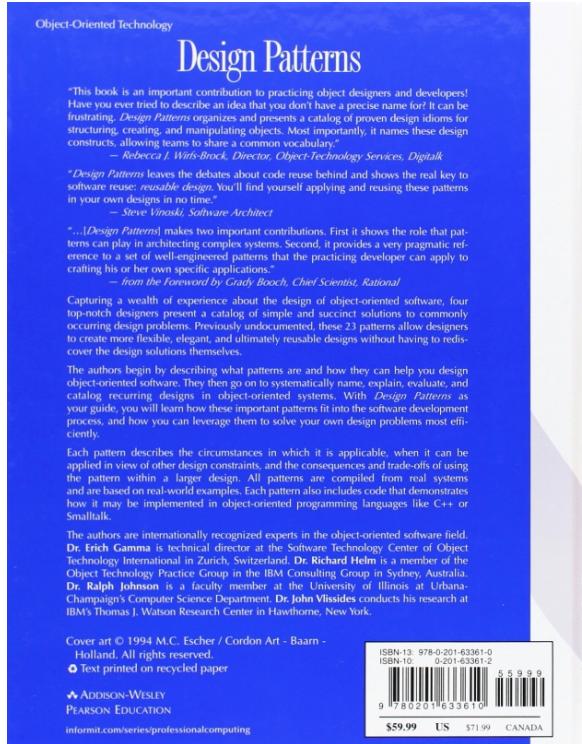
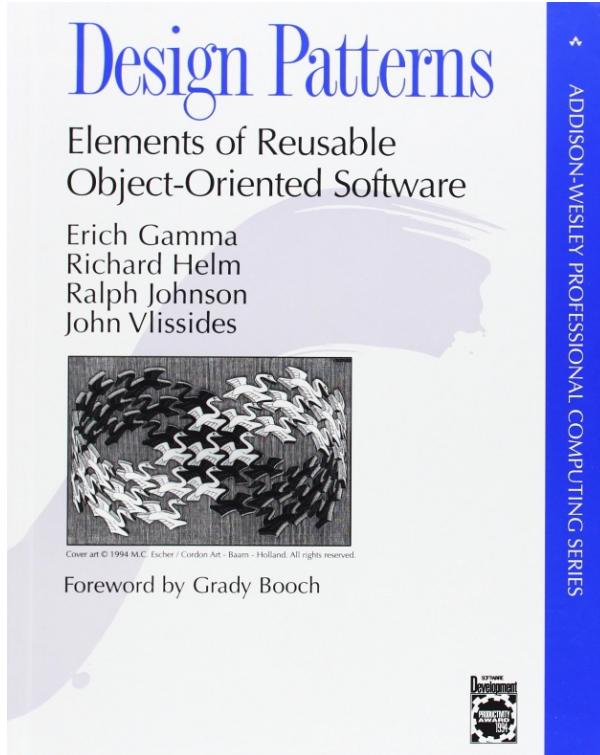
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Design Patterns in Industrial Automation

Das GoF (Gang of Four) Buch



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constructs, allowing teams to share a common vocabulary."

— *Rebecca J. Wirfs-Brock, Director, Object-Technology Services, Digitalk*

"*Design Patterns* leaves the debates about code reuse behind and shows the real key to software reuse: *reusable design*. You'll find yourself applying and reusing these patterns in your own designs in no time."

— *Steve Vinoski, Software Architect*

"...[*Design Patterns*] makes two important contributions. First it shows the role that patterns can play in architecting complex systems. Second, it provides a very pragmatic reference to a set of well-engineered patterns that the practicing developer can apply to crafting his or her own specific applications."

— *from the Foreword by Grady Booch, Chief Scientist, Rational*

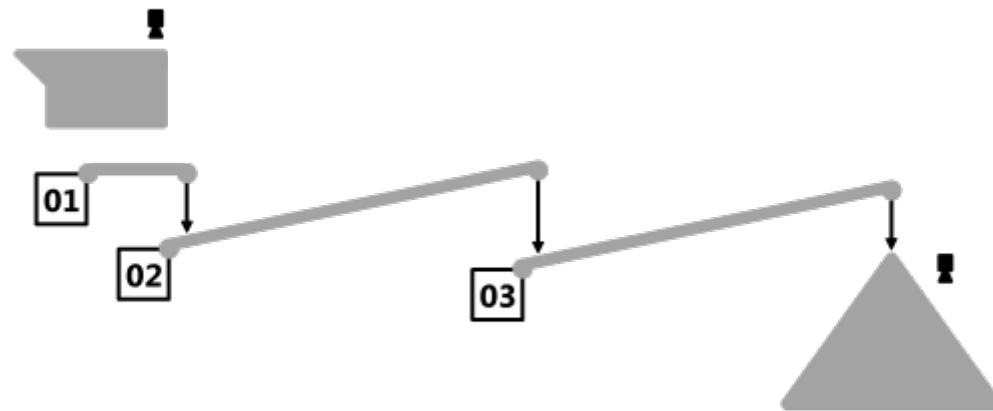
Capturing a wealth of experience about the design of object-oriented software, four top-notch designers present a catalog of simple and succinct solutions to commonly occurring design problems. Previously undocumented, these 23 patterns allow designers to create more flexible, elegant, and ultimately reusable designs without having to rediscover the design solutions themselves.

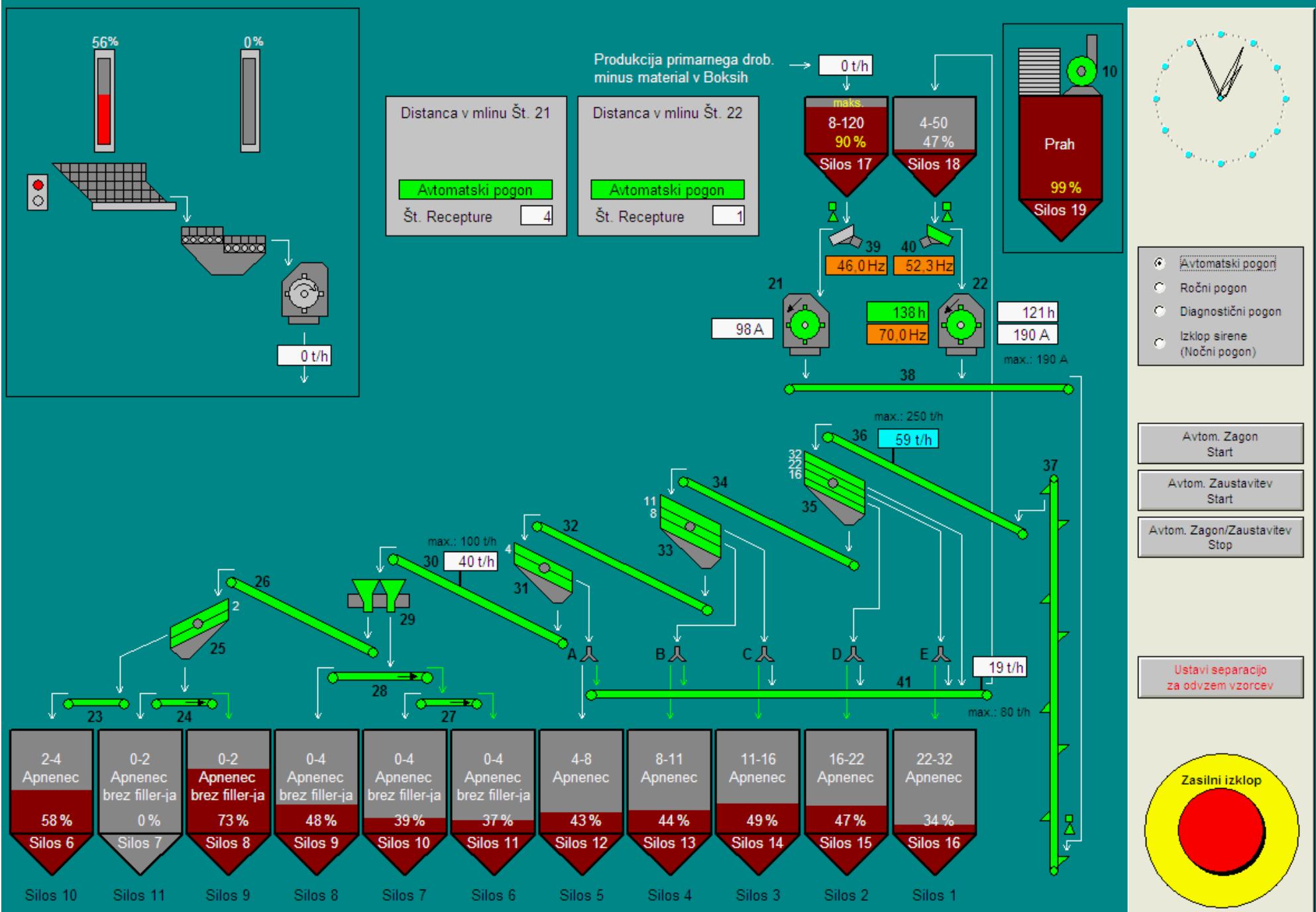
Zitat auf der Rückseite des GoF - Buches

Unterschiedliche Namensgebung und Bezeichnungen in englisch und deutsch.

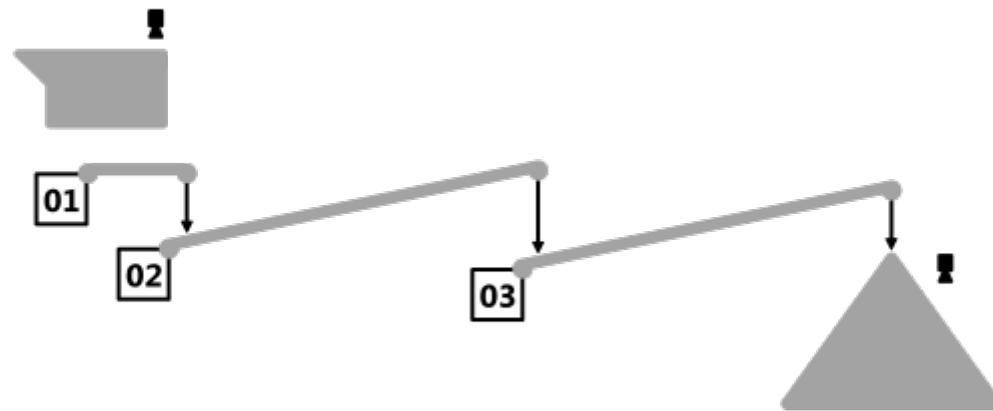
englisch	deutsch
PLC	SPS
Programmable Logic Controller	Speicherprogrammierbare Steuerung
Output: Q0.0	Ausgang: A0.0
Input: I0.0	Eingang: E0.0
Marker: M0.0	Merker: M0.0

Beispielanlage





Beispielanlage



Zusammenfassung Teil 1

- MVW Aufbau (MVVM/MVC)
- Separation of Concerns
- Loose Coupling / Program against Interfaces

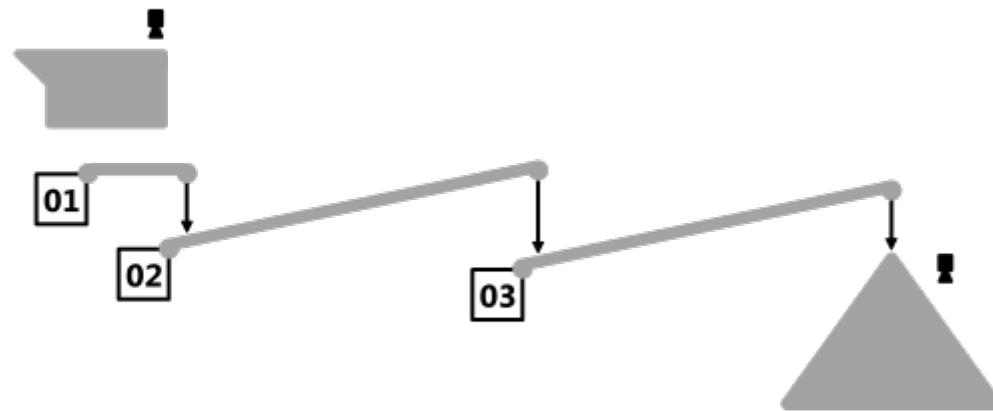
Dadurch:

Team kann aufgeteilt werden

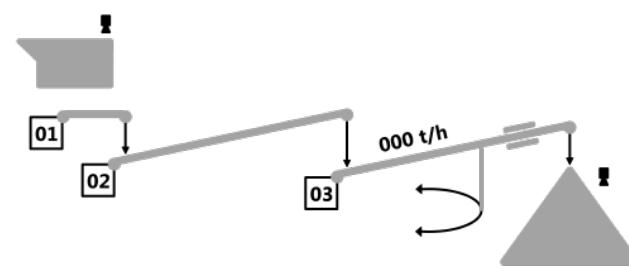
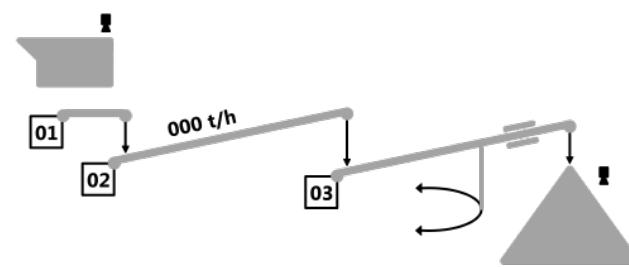
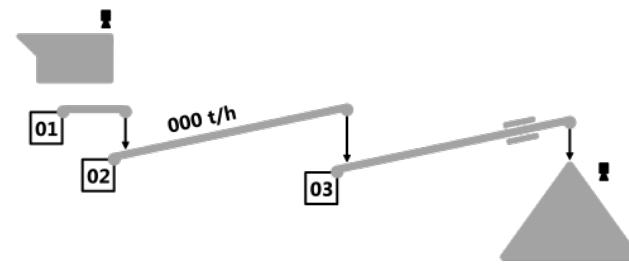
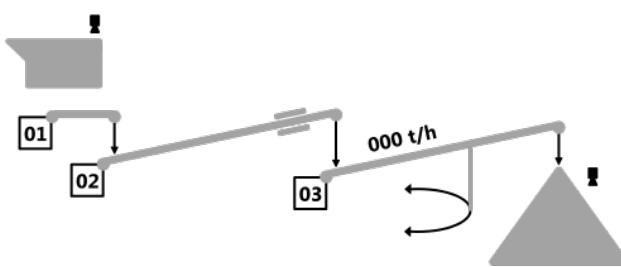
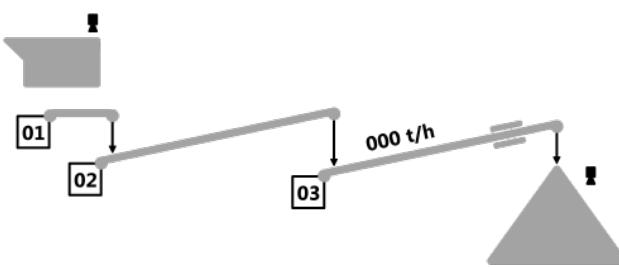
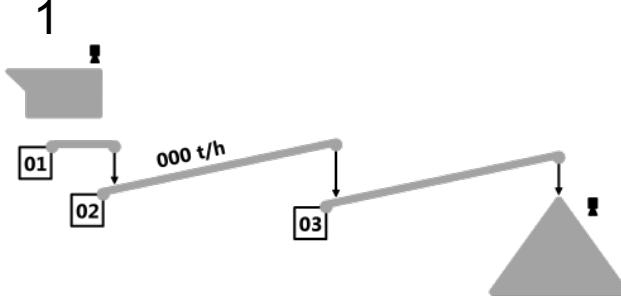
Änderungen in einem System führen nicht zu Änderungen in dem Anderen

Es kann besser getestet werden

Beispielanlage



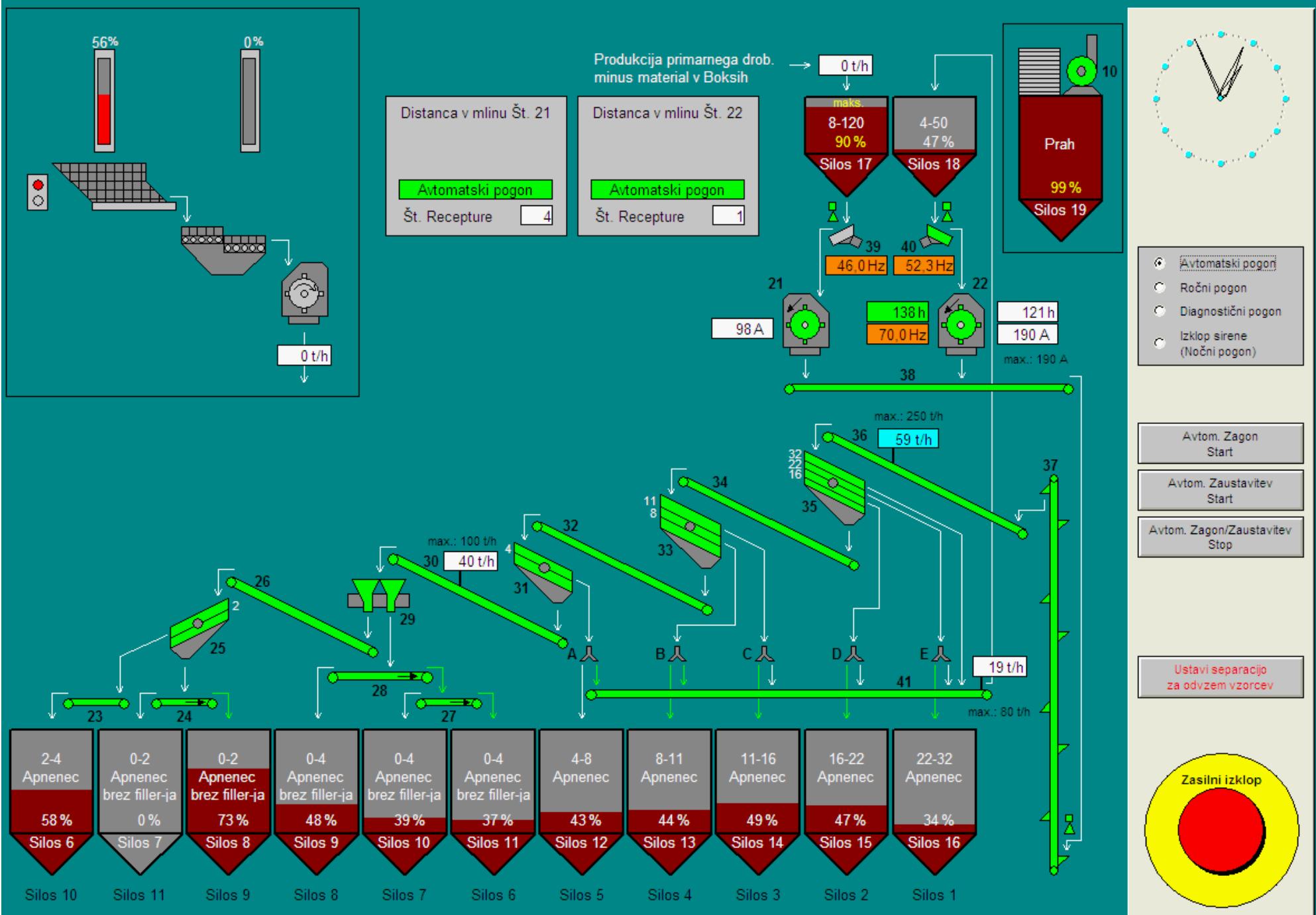
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Zusammenfassung Teil 2

- Keine flachen Vererbungsstrukturen
- Modular bleiben, dadurch höhere Flexibilität
- Public interface extrahieren und reale in abstrakte Objekte überführen, dadurch Komplexität verringern

Risiken und Nebenwirkungen am Pfandautomaten



Zusammenfassung Teil 3

- Steuerungssoftware muss den Zustand der Anlage klar kommunizieren
- Beim UI Übersicht bewahren
- Keine Elemente (Buttons, etc...) deaktivieren ohne den Benutzer explizit zu informieren (siehe CanExecute)