



Requirements Reuse

Lecture Objectives:

- 1) Explain how requirements can be reused. ✓
- 2) Explain when requirements reuse should be considered.
- 3) Given a problem, think of requirements which can be reused.
- 4) Explain how a requirements pattern can be documented.

- In CE2810, you wrote header files to access peripherals, such as the following:

```
#define PORTB (*((uint8_t*)(0x38)))
```

How did deal with this code?

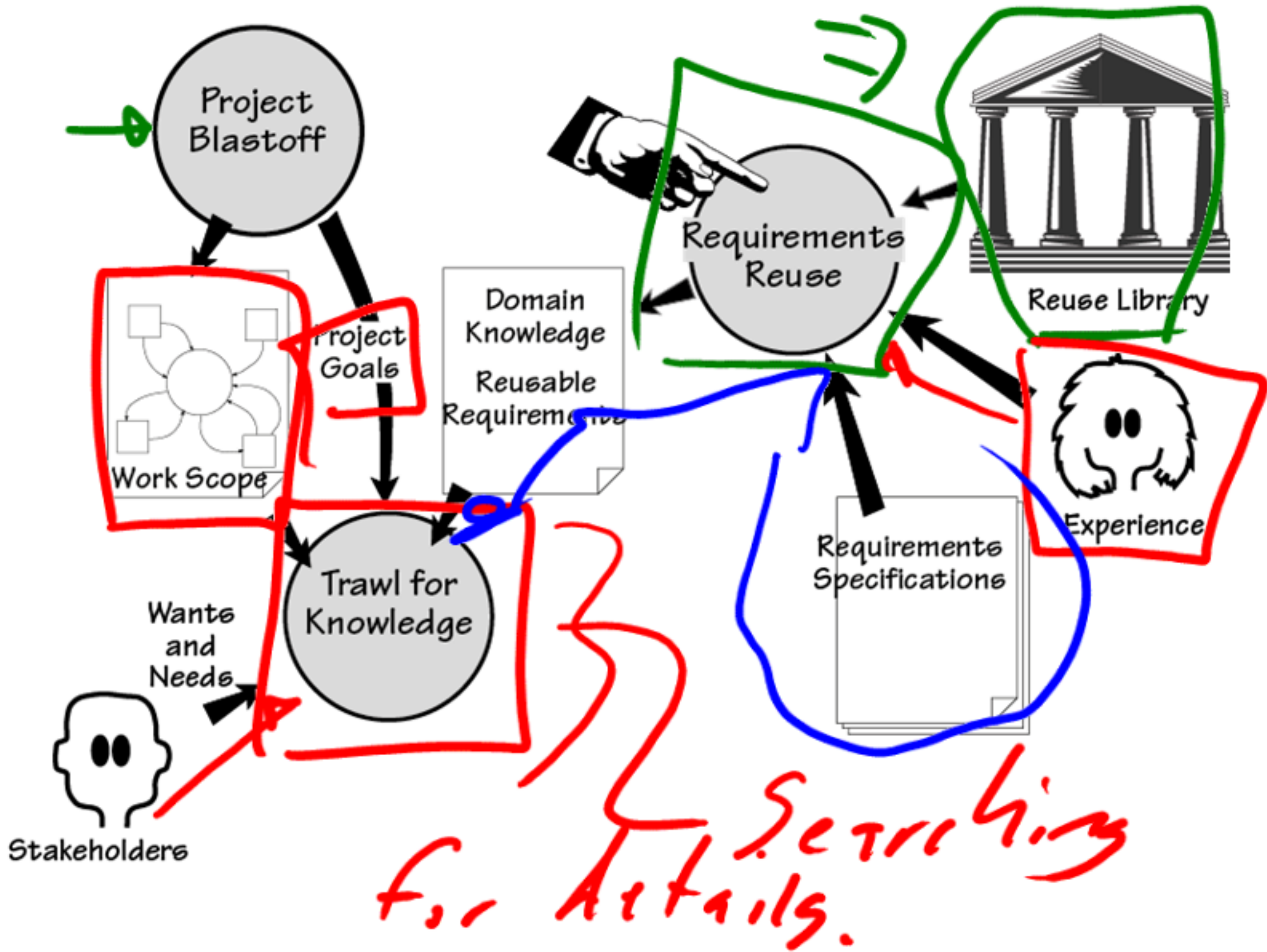
way of turning on LED's

CE2810

Use it later

Put this in a header file (.h) → reuse

Requirements Reuse in the context of the project



Review: What happens in
the blastoff of a project?

⇒ ID Scope, stakeholders,
goals, constraints, etc

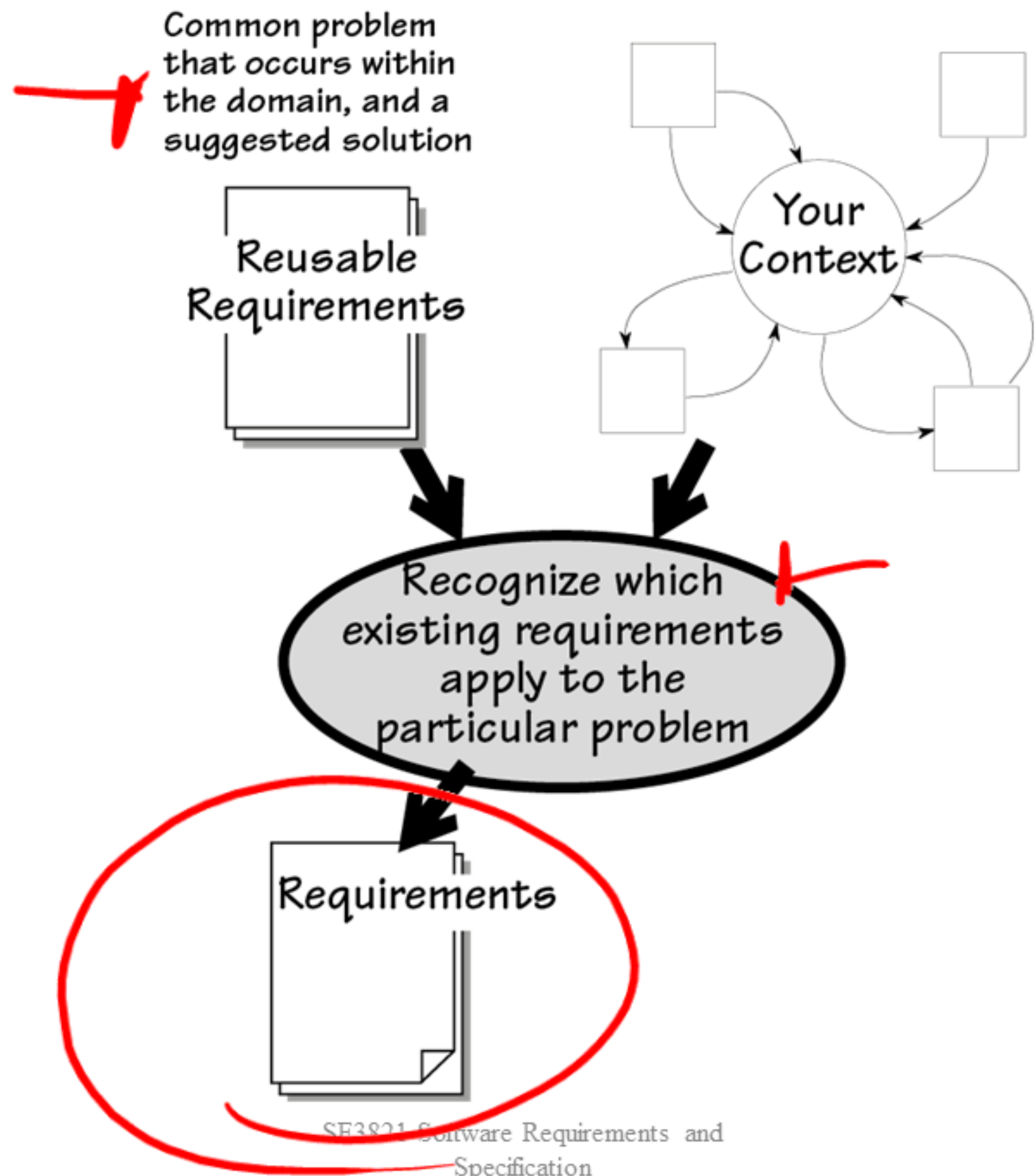
Project Blastoff

- The purpose of the project —
- The Client, the customer, and other stakeholders —
- Users of the product —
- Mandated constraints —
- Naming conventions and definitions —
- Relevant Facts and Assumptions —
- The scope of the work —

How much of the project is
the same as a previous
project!

Potential for requirements reuse

reuse



Review: SE2811

- What are the three aspects to a software design pattern?

~~Gay of Four ..~~
Reusable

- What are the three aspects to a software design pattern?

⇒ "cookbook solution"

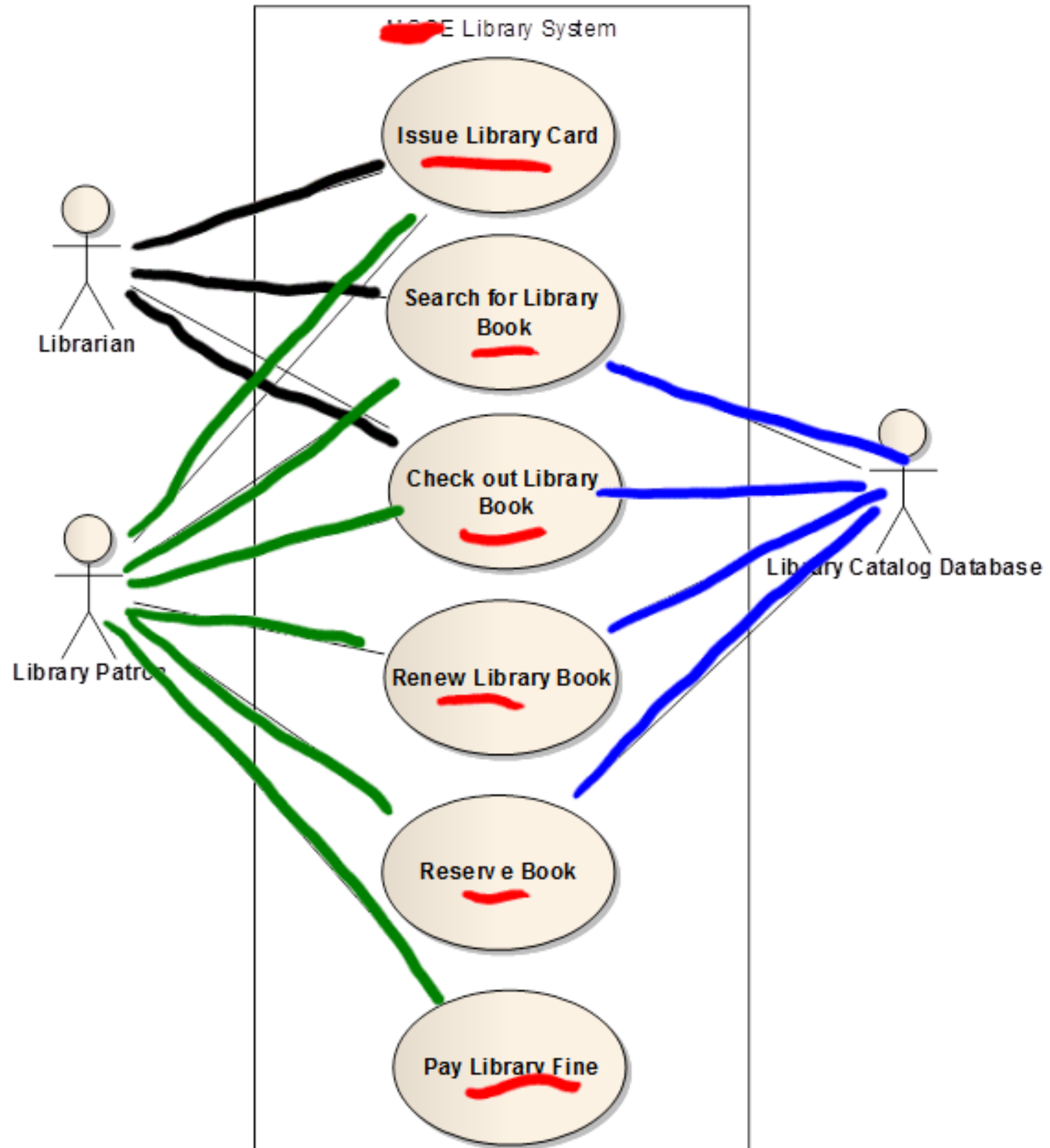
Review: SE2811

1. A Common Problem.

2. A generally agreed upon solution to the common problem.

3. Consequences of the solution.

Problem context



- What steps are involved?

Given

1. Must have book checked out.

2. Request to renew book.

3. System approves request.

4. New due date provided.

Hold on book?

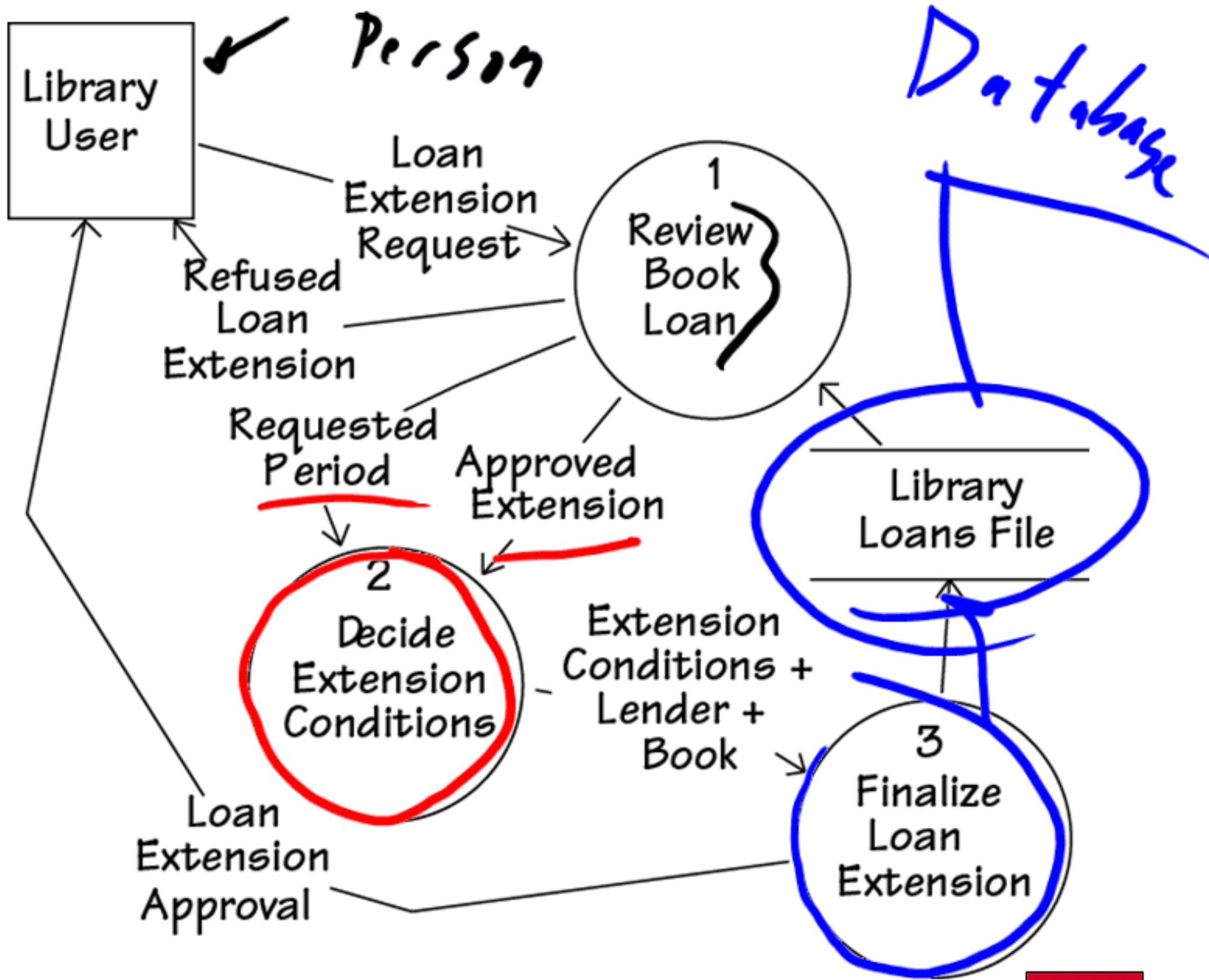
Renew too many times?

Overdue books?

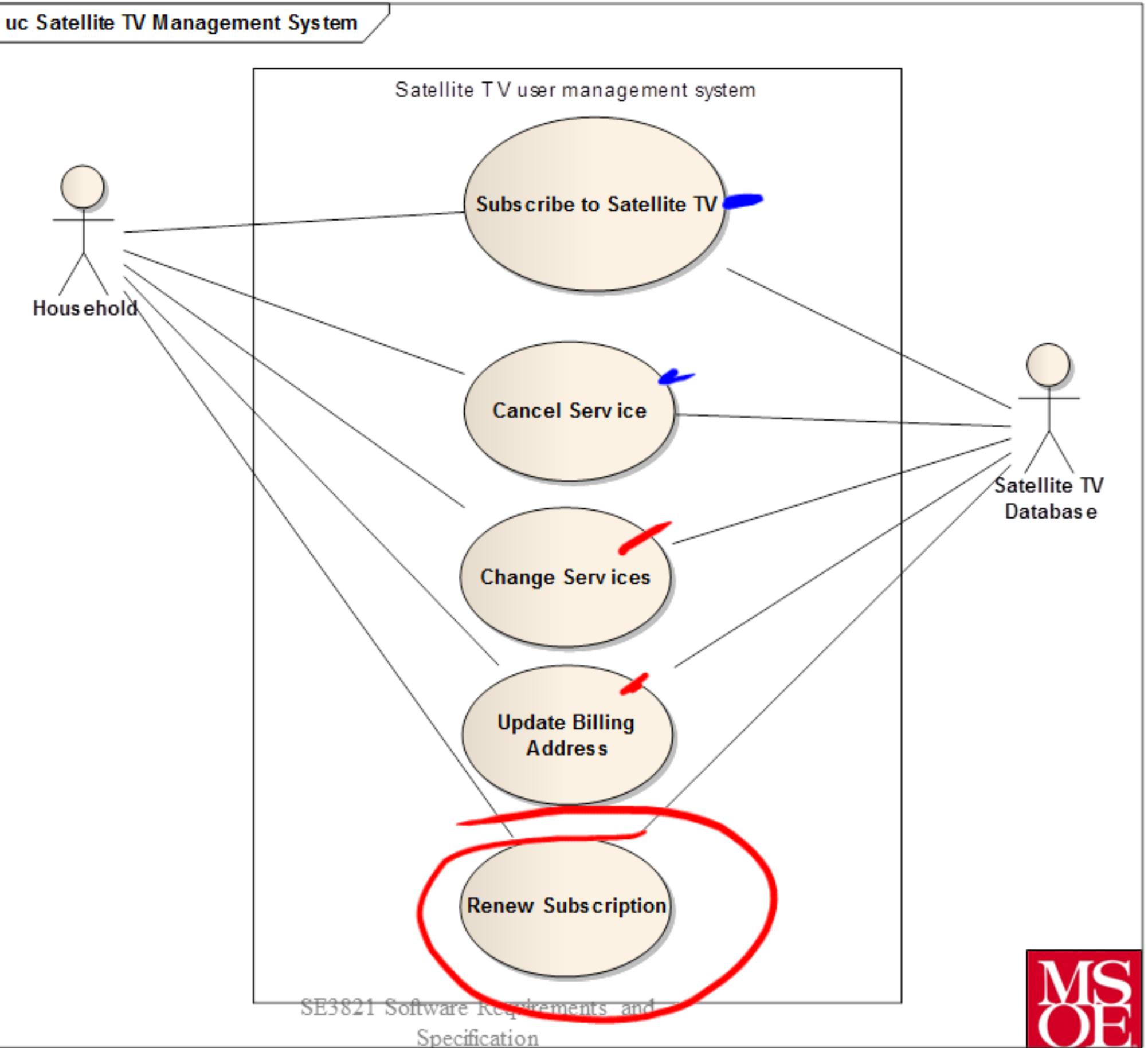
Renewing a book

A Context Diagram of this

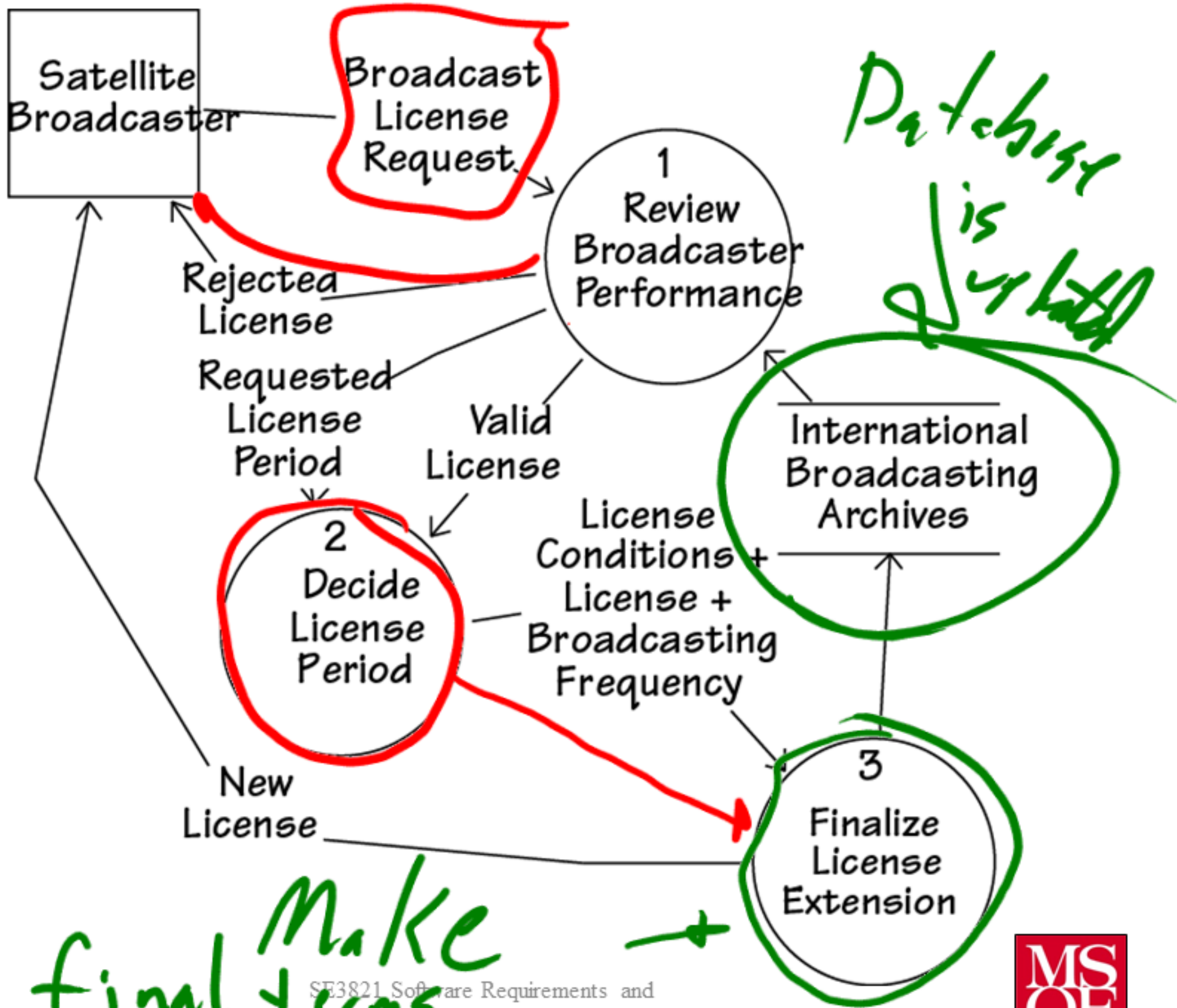
A Context Diagram of this



A Satellite TV System



A Context Diagram Example



What you need to identify reusable requirements

What you need to identify reusable requirements

- The ability to work at different levels of abstraction —
- The ability to categorize in different ways ~
- The ability to see that lenses and glass spheres with water are both magnifying devices
- The ability to spot similarities between apparently different things
- The ability to disregard physical artifacts
- The ability to see things in the abstract

The Medical Product

- What areas of requirements might be reusable from another project?

⇒ Base application = Maybe -

⇒ Medical DB access system. -

⇒ Authentication?

⇒ Alarm system.

⇒ Camera App / ~~Barcode~~
Barcode scan

Expressing Business

Patterns in a reusable sense

- Pattern Name *—*
 - A descriptive name to make it easy to communicate the pattern to other people
- Forces *- why?*
 - The reasons for the patterns existence
- Context *- where is it relevant?*
 - The boundaries in which the pattern is relevant
- Mechanics *—*
 - A description of the pattern *- Details*
- Related Patterns
 - Other associated patterns *- Similar related things.*