CRC Cards

Thursday, October 25

Announcements

IEF feedback

Sprint 3 is released

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Class Hierarchies

`Vehicle`: manages the fuel level

`Car`: Does the driving

`Boat`: Does the sailing

Each class in the hierarchy has a particular responsibility

RDD

The central idea is that in a "good" object-oriented design, every object has **clear** and **well-defined responsibilities.**

Responsibilities are not concentrated centrally, but are **well-distributed amongst the objects**.

Single Responsibility Principle

Every class should have a **single responsibility**.

There should never be more than one reason for a class to change.

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RDD Design

There are 4 steps:

1. Find the **classes** in your system

2. Determine the **responsibilities** of each class

3. Determine how objects **collaborate** with each other to fulfill their responsibilities

4. **Factor** common responsibilities to build class hierarchies

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Finding classes

Start with the **user stories;**

Look for **noun phrases;**

Refine to a list of **candidate classes.**

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As a user I want to create an account, so I can add items to my cart.

As a **user** I want to create an **account**, so I can add **items** to my **cart**.

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CRC sessions

CRC stands for Class-Responsibility-Collaborator

Class name	
Responsibilities	Collaborators

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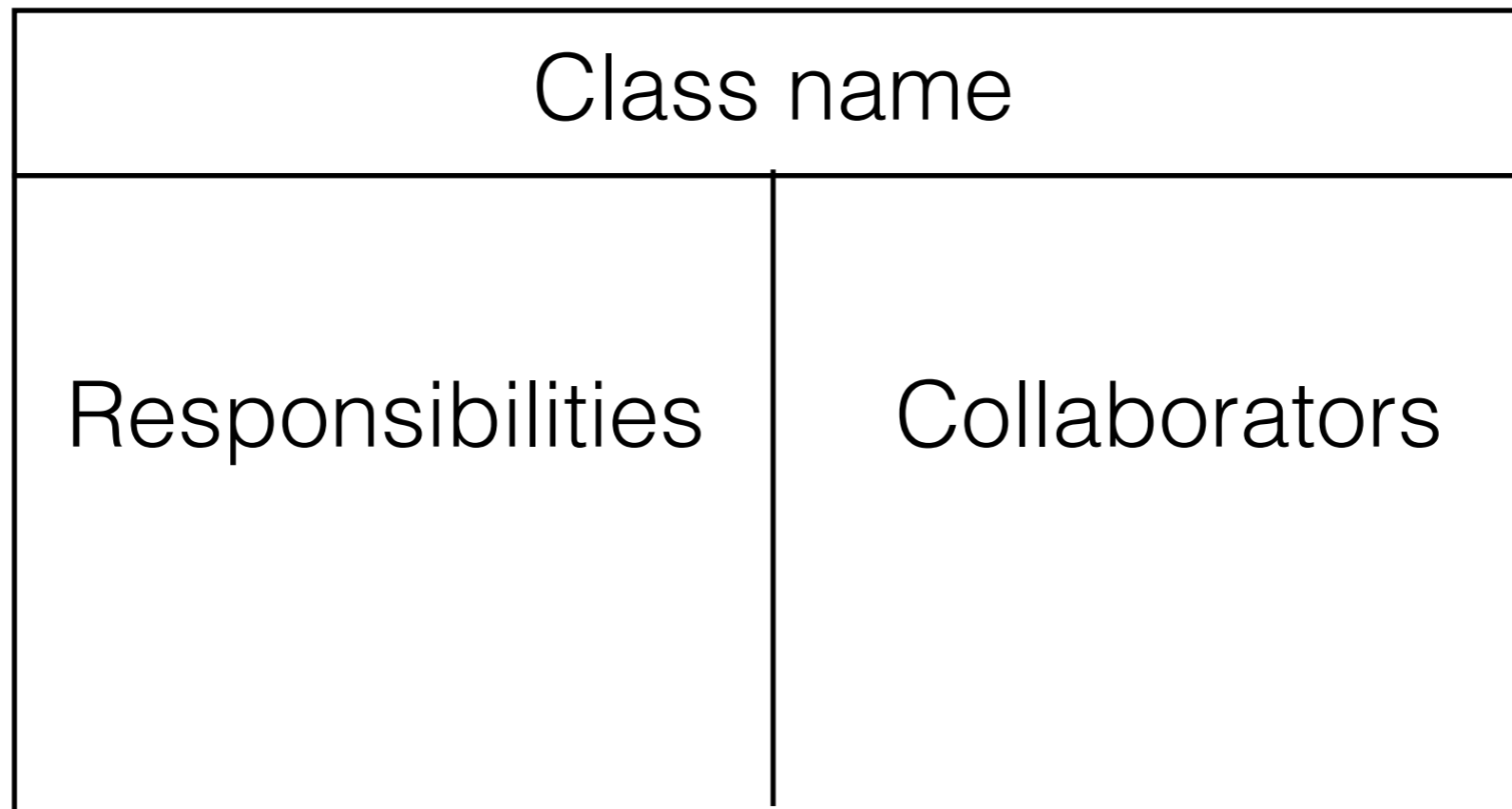
Identifying responsibilities

Look for verbs in the user story. See which represent responsibilities.

Assign them to class cards.

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As a **user** I want to <u>create</u> an **account**, so I can <u>add</u> **items** to my **cart**.

Assigning responsibilities

Be lazy: Don't do anything you can push to someone else

Be tough: Don't let others play with your toys

Be socialist: Evenly distribute system intelligence

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Finding Collaborators

For each responsibility:

1. Can the class **fulfill** the responsibility by itself?

2. If not, **what does it need,** and from what class it can obtain it from?

For each class:

1. What does this class **know?**

2. What **other classes** need its information or results?

3. Classes that **do not interact** with others should be **discarded.**

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Factor out common responsibilities

Common responsibilities should be factored out into superclasses.

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As a user I want to view a list of my previous orders so I can check my spending.

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As a merchant, I want to view open orders so I can fulfill them.

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RDD Steps

Find the **classes** in your system

Determine the **responsibilities** of each class

Determine how objects **collaborate** with each other to fulfill their responsibilities

Factor out common responsibilities to build class hierarchies.

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Class exercise (pairs)

Model a library system using CRC Cards.

See the requirements sheet for the user stories.

Write your names on the top card

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