Scrum and AMOS

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AMOS B02

Agenda

1. The AMOS process
2. The team meeting
    - Meeting preparation
    - Sprint review
    - Sprint release
    - Sprint retrospective
    - Sprint planning
3. Bill of materials
4. Software architecture

1. The AMOS Process

Scrum in Student Projects

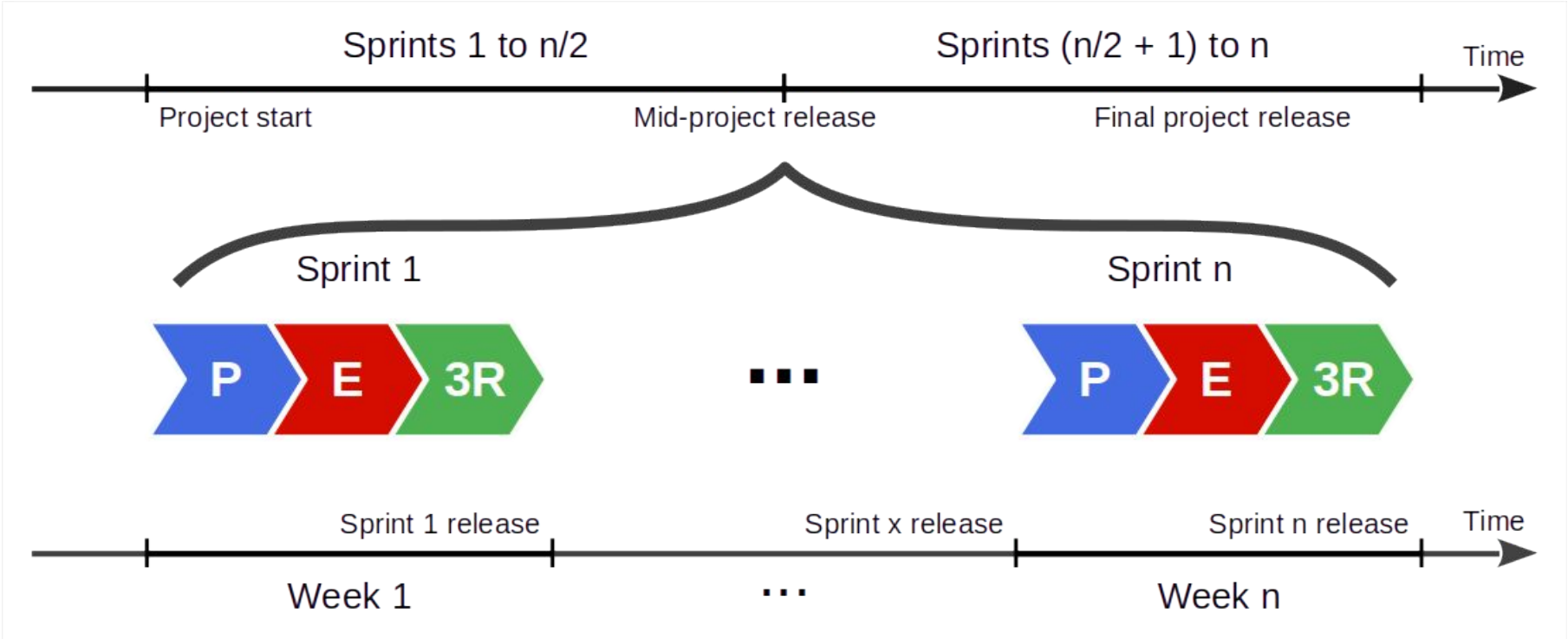
Challenges

- Widely differing abilities and experiences
- Not 100% on project, but in multiple courses
- Transient rather than persistent teams
- Not available at same place, not at same time
- Sometimes extrinsically motivated (grades)

Solutions

- Context-aware instantiation of framework
- Supporting teaching team, coaching

Overall AMOS Project Timeline



Time-boxed Sequence of Releases

A **release** is

- A named identifiable, consistent, and useful snapshot of the product

A **sprint release** is

- A release used to gather feedback from the industry partner to steer the project

A **project release** is

- A release that is deployed to production where it is supposed to perform its job

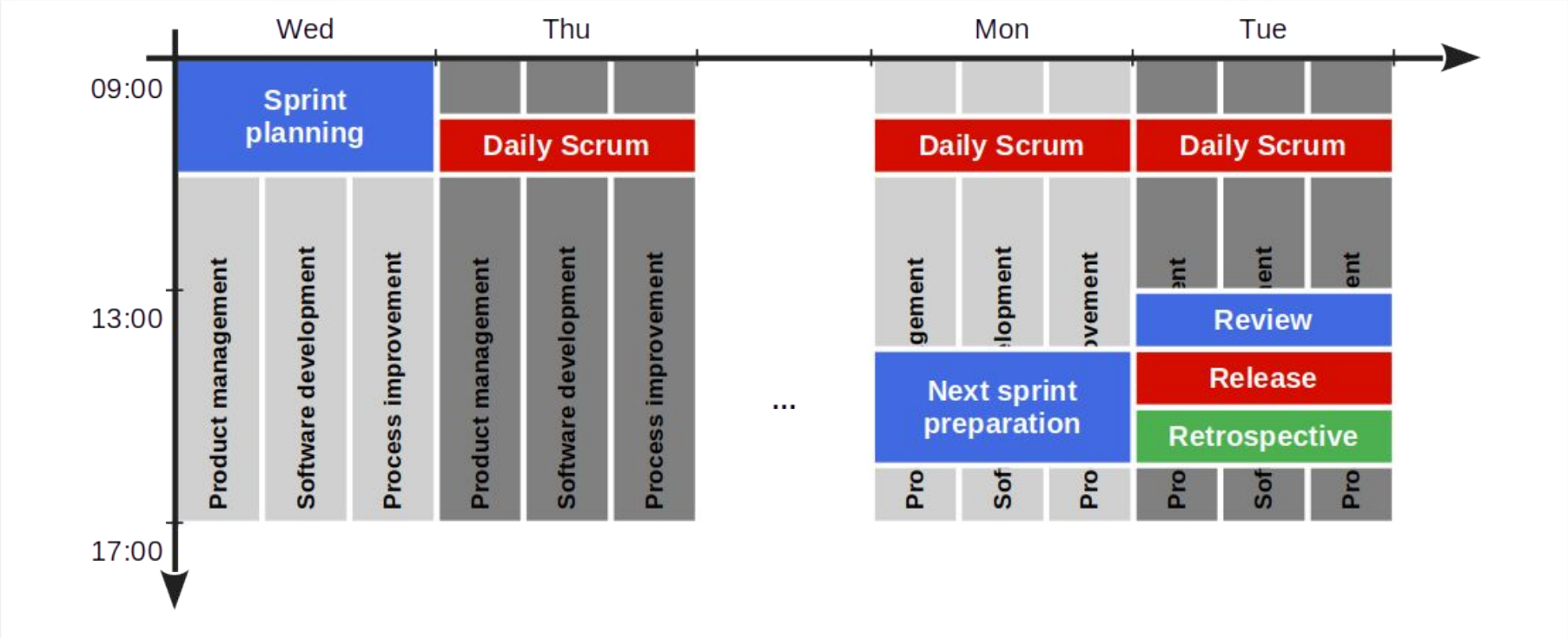
In the AMOS Project there are two releases (mid-project and final release)

Project Schedule

Please see the **Schedule** tab of the **Course Organization** doc

2. The Team Meeting

Logical Structure of a Scrum Sprint



The AMOS Team Meeting

1. Meeting Preparation

Release manager

- Ensures that a working demo system will be available
- Tags release candidate with **sprint-xx-release-candidate**
  - Where xx is your sprint number (see project schedule)

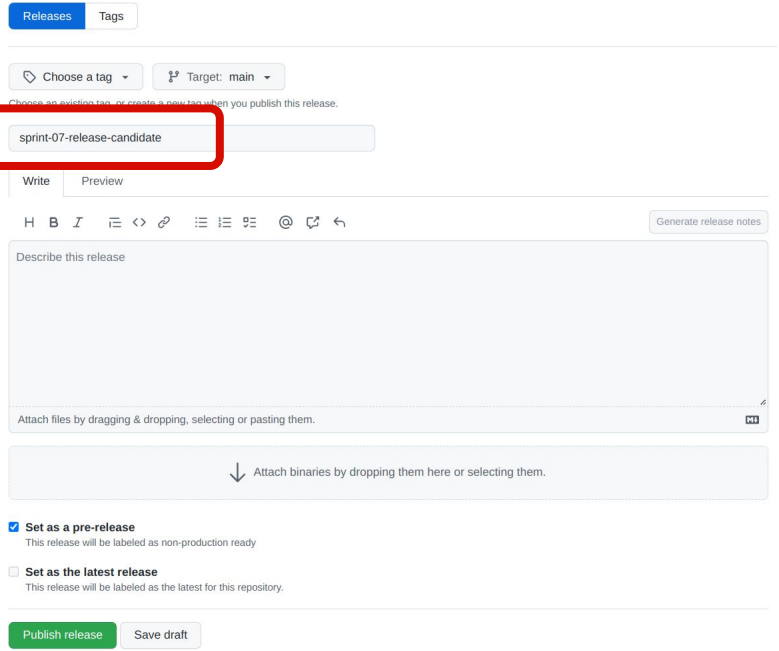
Product owner

- Ensures that product backlog is ready for sprint planning
  - Includes new feature requests
  - May include bugs as issues
  - May include refactorings

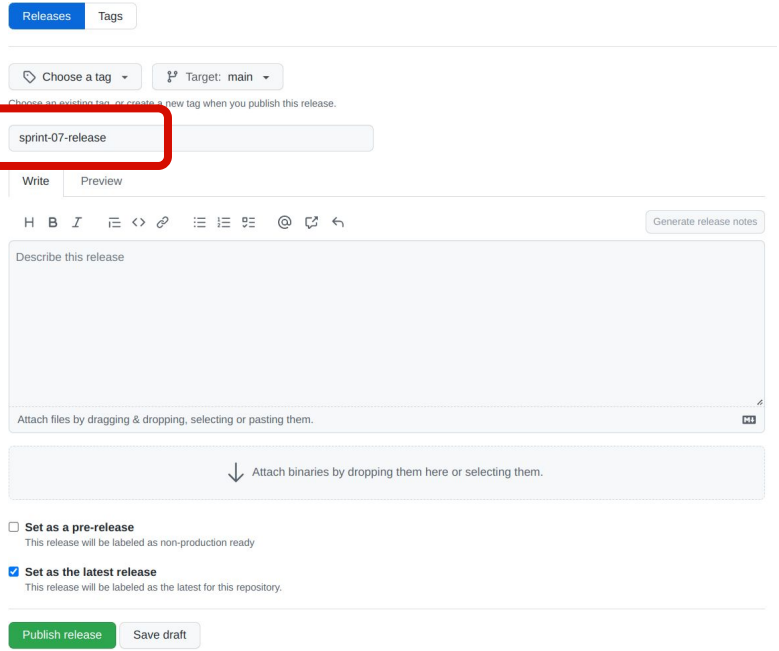
This should be done in a **next sprint preparation** meeting

Tagging Release Candidates and Releases

Release candidate



Release [1]



[1] Do not rename release candidate

2a. Sprint Review

Release manager

- Checks-out fresh code base using release candidate tag
- Compiles, builds, and runs tests for release candidate
- Deploys release candidate to test environment

The release manager does not run the review

2b. Sprint Review

Product owner

- Walks through “Awaiting review” column item by item
  - Asks developer to demo item under review
  - Checks fulfillment of acceptance criteria
  - Checks fulfillment of definition of done, if required
  - Checks other criteria incl. logging output for problems
  - If successfully implemented
    - Moves item to feature archive
    - Asks developers about real size, add it to the item
  - If not successfully implemented
    - Moves item back to product backlog

2c. Sprint Review

Software developer (individually)

- Is called upon by product owner for backlog item
  - Demos backlog item as requested by product owner
  - Answers questions about item design and implementation
  - Provides real size as determined after implementation

3a. Sprint Release

Product owner

- Decides whether release candidate should be released
  - Only in case of significant regression should you not release
  - Later in the course you will use a definition of done
  - Specifics depend on type of release
- Consults with software developers if necessary

3b. Sprint Release

Release manager

- If the release candidate is to be released
  - Deploys sprint release to operations environment
  - Tags release with **sprint-xx-release** where xx is your sprint number
- If there is a change log (optional)
  - Updates change log with release information

4a. Sprint Retrospective

Scrum Master

- Reviews this sprint’s impediments and improvements
  - Reports on progress
  - Reviews remaining problems
- Performs roll call, asks:
  - What has gone well?
  - What hasn’t gone well?
  - What can we do better?
- Puts new impediments and improvements into imp-squared backlog

4b. Sprint Retrospective

Everyone

- Answers to happiness index

5a. Sprint Planning

Product owner

- Reprioritizes product backlog items, if necessary, on-the-fly
- Works through top-prioritized backlog items one-by-one until finished
  - For each product backlog item, explains it, asks developers to estimate and commit
  - You are finished, if the team does not want to take on more backlog items

5b. Sprint Planning

Software developers (as team)

- Estimate size of each backlog item using planning poker
- After planning, commit to backlog items in sprint backlog

Story Points

Story points

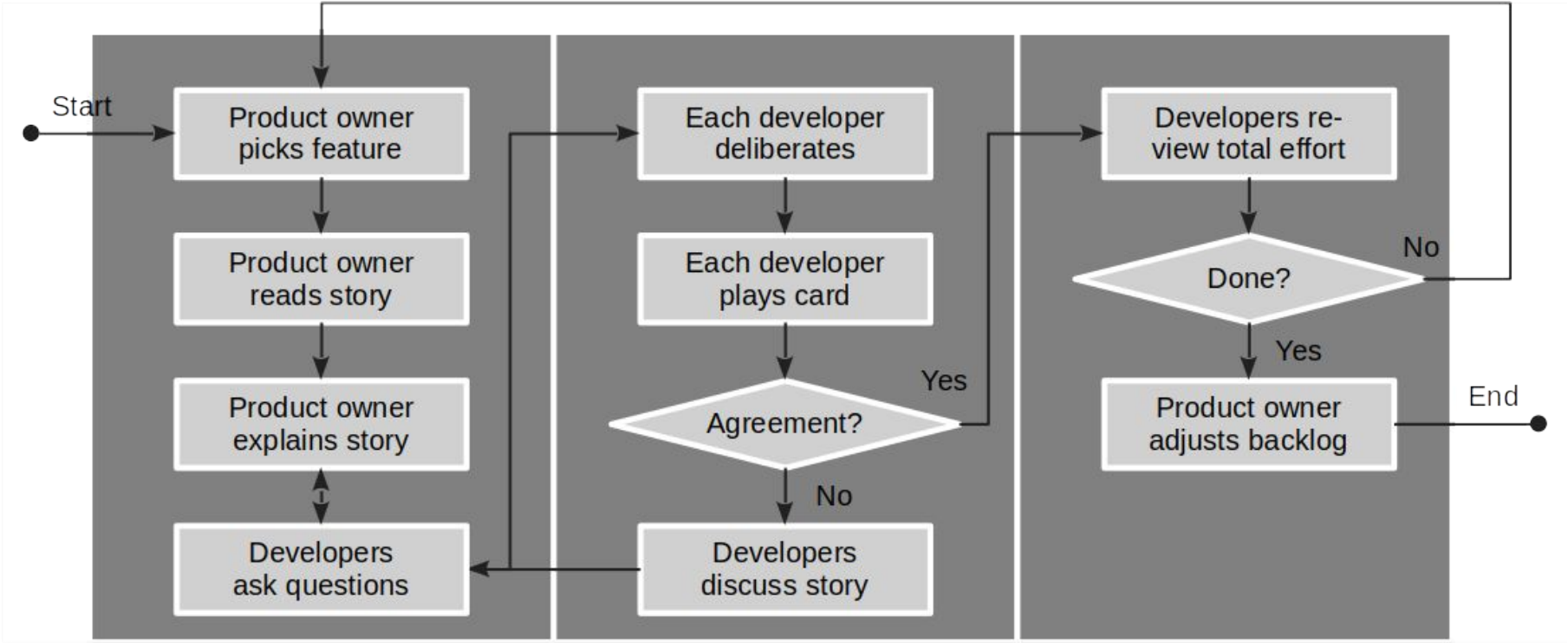
- Is an arbitrary numeric measure of size of a given backlog item

Properties

- Is a measure of size, not of effort or duration
- Measured in non-linear increments, forcing choice
- Is socially agreed upon, depends on team estimation history
- Is independent of a particular person (and their skills)
- Is mapped to time using the team's velocity (development speed)

Points	Meaning
0	No size
1	Trivial size
2	Small size
3	Medium size
5	Large size
8	Very large size
13	Too large (size)

Sprint Planning with Planning Poker [1]



[1] A simple planning poker cards replacement can be found in your planning document

6a. Meeting After-work

Product owner

- Updates planning document to consistent state
  - Cleans up product and sprint backlog
  - Ensures feature archive is current

6b. Meeting After-work

Software developer (as team)

- Plan programming tasks (1 feature = 1+ tasks)
  - Agree on which developer(s) work(s) on which tasks
  - If pair programming, ensure you document the pair

6c. Meeting After-work

Scrum Master

- Works on impediments and improvements during sprint
- Documents resolutions in imp-squared backlog

An Efficient Team Meeting Takes 90 Min. (or Less)

#	Section	Duration
1	Meeting preparation	-
2	Sprint review	~35%
3	Sprint release	~5%
4	Sprint retrospective	~20%
5	Sprint planning	~40%
6	Meeting after-work	-

3. Bill of Materials

Bill of Materials [1]

A **bill of materials** (of some artifact) is

- A linear list of materials (the parts) constituting the artifact (the whole)

A bill of materials can contain any kind of material

- Not just software

If purely software, the bill of materials is also called the

- Software bill of materials (SBOM)

[1] German: Stückliste

Software Bill of Materials (SBOM)

For each dependency, provide this (recommended, not required) information

Field	Name	Example
1	Context	com.google.code.gson
2	Name	gson
3	Version	2.3.1
4	License	Apache-2.0
5	Comment (optional)	Pulled from Maven Central

Regular Deliverable: Software Bill of Materials

Please initialize your software bill of materials and keep it up-to-date

- You can limit this to your first-level dependencies

You can use a tool, e.g. a build tool plugin to generate the SBOM

Please update every time you change your dependencies

4. Software Architecture

Agile Architecture?!

Agile methods eschew detailed planning

- The proof of the software is in the feedback of the customer

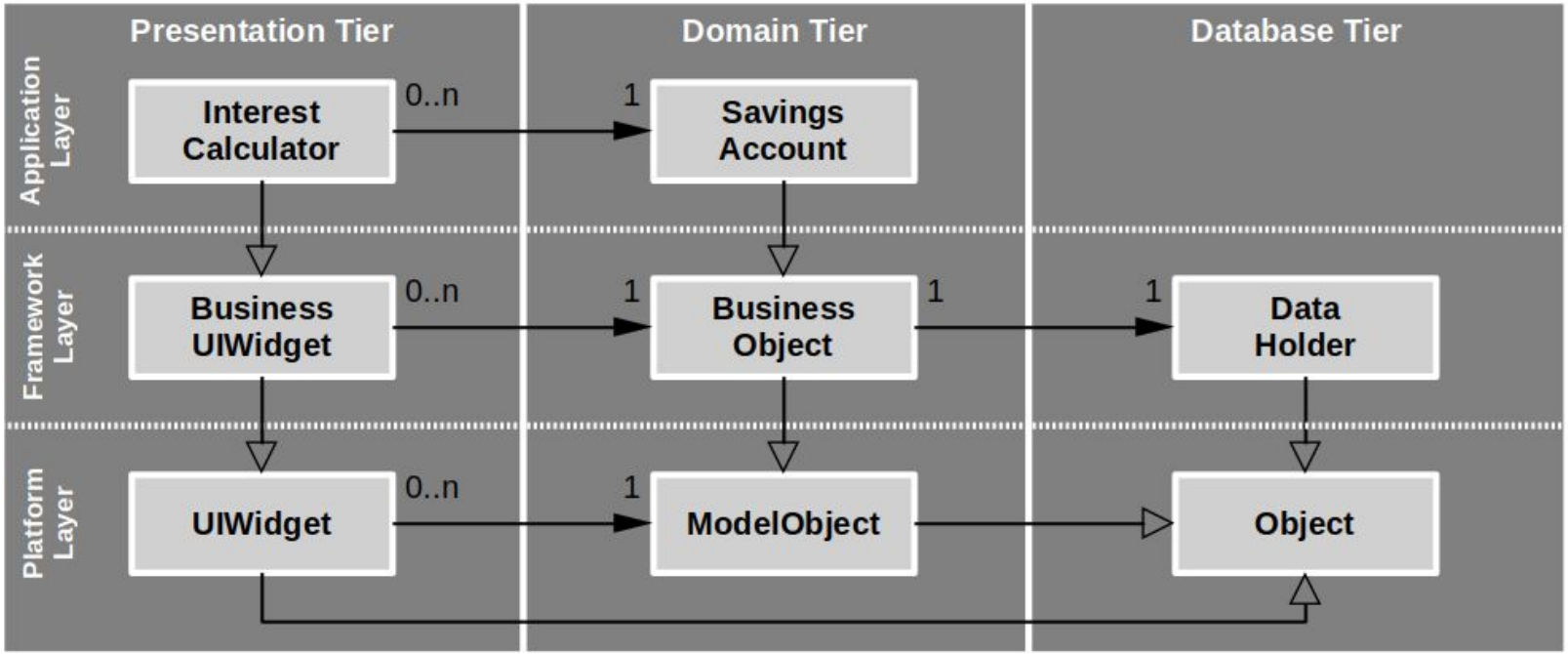
Software architecture is the overall design of a system

- Including static (structural) and dynamic aspects
- Covering everything of wide impact to the system
- Ignoring everything with limited (localized) impact

Agile software architecture is software architecture that

- Emerges from risk-adjusted planning / visibility
- Delays architectural investment to the last minute

Runtime Objects / Tiers vs. Code / Layered Architecture



One-time Deliverable: Architecture Description

Provide a description of the initial planned architecture including (at a minimum)

1. The runtime architecture
2. The code (static) architecture
3. The tech stack you are building on

Feel free at the end of the project to review planning with reality

Summary

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3. Bill of materials
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Thank you! Any questions?

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