Software Engineering

Class 3

Fall 2023

Group A & B & F
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Class SCHEDULE

- **[Set 20 & 22]** **Class 1: Project KickOff.**
- **[Set 27 & 29]** **Class 2: Backlog check.**
- **[Oct 4 & 6]** **Class 3: Deliver Backlog. Sprint 0 Planning.**
- *[Oct 11 & 13]* *Bank holidays*
- **[Oct 18 & 20]** **Class 4: Deliver Demo S0. Retrospective Sprint 0. Sprint 1 Planning.**
- **[Oct 25 & 27]** **Class 5: Sprint 1 check [Q1]**
- *[Nov 1 & 3]* *Examen, no class.*
- **[Nov 8 & 10]** **Class 6: Deliver Demo S1. Retrospective Sprint 1**
- **[Nov 15& 17]** **Class 7: Sprint 2 Planning [Q2]**
- **[Nov 22 & 24]** **Class 8: Sprint 2 check.**
- **[Nov 20 & Dec 01]** **Class 9: Deliver Demo S2. Retrospective Sprint 2. Sprint 3 Planning.**
- *[Dec 06 & 08]* *Bank holidays*
- **[Dec 14 & 16]** **Class 10: Deliver Final PRODUCT (S3).**

1.- PRODUCT BACKLOG Review

What is inside a product Backlog:

- USER STORIES
- TECHNICAL REQUIREMENTS
- CODE SPIKES
- TECHNICAL DEBT
- BUGS

2.- SPRINT PLANNING (I): What is sprint planning

- Retrospective recap
- Product and market updates
- Planning conversation: Sprint goal + velocity + planning
- Recap the plan and first action for everybody

2.- Sprint planning (II): Estimates: HOW-TO

STORY POINTS: Story points are units of measure for expressing an estimate of the overall effort required to fully implement a product backlog item or any other piece of work.

PLANNING POKER:

a. Take the smallest user story in your backlog, rate it as 1.
b. Agree on point scale of about six numbers: 1, 2, 3, 5, 8, 13, (21)
c. Briefly discuss the user story
d. Everyone silently selects a point card
e. Everyone reveals the card at the same time
f. If outliers exists, discuss and restart.

2.- SPRINT PLANNING (III): What to DO

- Chose the Scrum Master & Fix the time for the daily meeting
- Select the more relevant stories
- Estimate the complexity for each one
- Fill the “Sprint Template” sheet with the following data:
  - Team data (Sprint Setup)
  - The selected PBI (Product Backlog Items)
  - PBI Estimations
- Split each PBI into tasks & estimate task time
- Assign Tasks to team members
- YOU CAN START THE DEVELOPMENT !

3.- WHAT IS A SPRINT ZERO

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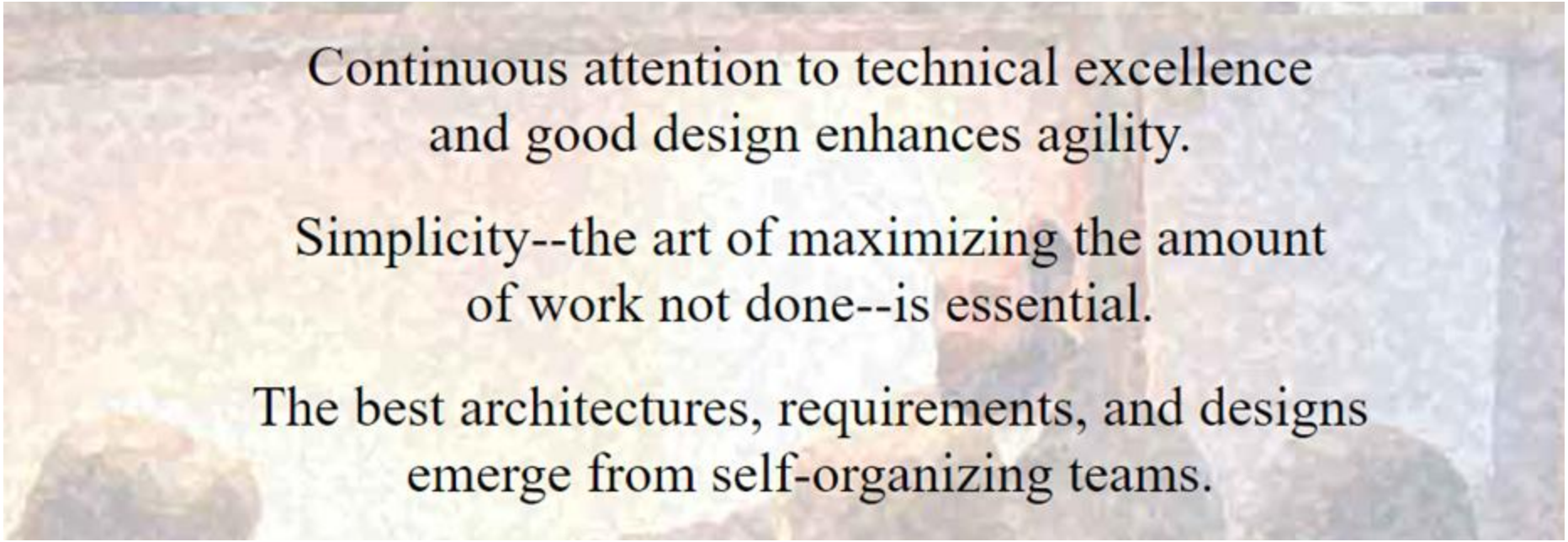
- Sprint Zero exists to create the basic skeleton for the project so that future sprints can truly add incremental value efficiently.
- It may involve some research spikes.
- Minimal design up front is done in Sprint Zero so that EMERGENT DESIGN is possible in future sprints --->> a flexible enough framework so that refactoring is easy.

3.- HOW TO PLAN A SPRINT ZERO

- For minimal design up front, the team picks up a very few critical and small stories
- The team designs and prepares the development and production environment and programming languages.
  - Design outline.
  - Framework.
  - Database.
  - Needed skills.
  - Resources.
- User stories: You have a clear and defined output for the sprint
- Delivering the user stories includes putting the skeleton/framework in place.
- Sprint Zero delivers value !!!

SW Design and Architecture : Principles behind the “Agile Manifesto”



https://agilemanifesto.org/

Intentional architecture vs. Emergent architecture

- Intentional architecture – Defines a set of purposeful, planned architectural strategies and initiatives, which enhance solution design, performance, and usability and provide guidance for inter-team design and implementation synchronization.
- Emergent design – Provides the technical basis for a fully evolutionary and incremental implementation approach. This helps developers and designers respond to immediate user needs, allowing the design to evolve as the system is built and deployed.

https://www.scaledagileframework.com/agile-architecture/

DESIGN DECISIONS as User Stories

- We treat design decisions as user stories
- This way, a design decision is worked on in a Sprint as any other element in the Sprint Backlog
- You can manipulate them as any other object.
- Depending on the type of decision, it can be a separate element in the Sprint Backlog or it can be a specific task detailed within a user story.

YOU DECIDE !!

SOFTWARE DESIGN in SCRUM

- Scrum is strict : at the end of the Sprint, you have to deliver a piece of working software that is built according to a Definition of Done
  ...and design represents "no business value"
  ....however the development team must make sure they do design, committing to a planning they make themselves.

- There is no special moment for the design of the software architecture in Scrum. There is no "software architecture Sprint."
- Architecture in Scrum emerges, it is not created somewhere, or at some specific time.
- Architecture and design should evolve as the team decides how they are going to address the requirements on the backlog. This activity should be ongoing.

[FOR A LONGER DISCUSSION: For larger, or scaling-up products this can be a disaster waiting to happen --> Technical debt !!!]

How to tackle SOFTWARE DESIGN in SCRUM: Principles

- AGILE: “just enough design”
- Build architecture through stories
- Model and implement incrementally
- Evolves over time while supporting needs of current users
- Avoids overhead and delays associated with phase-gate and BUFD-methods
- Ensures the system “always runs”
- Design Documentation: Scrum is not a methodology. It is a framework. As such, it mandates neither more nor less, documentation.

How to tackle SOFTWARE DESIGN in SCRUM: HOW_TO

Choose the thing that is quickest to implement

EVERY-SINGLE-TIME

- If the software is a success, then in a few years you will *maybe* have another opportunity to change one of the technologies or the architecture and design ;-).

SPRINT EVALUATION

DEMO RUNNING in PRODUCTION ENVIRONMENT (not localhost !) [NOT ON SPRINT 0] Y/N

ONE TASK COMPLETED and be part of the DEMO BY EACH TEAM MEMBER Y/N

SOURCE CODE MANAGEMENT PATTERN DEFINED (Github branching strategy) 0-10

USING KANBAN (Github project management) 0-10

COHERENCE between the data in tools: Trello-Excel-Github-Demo 0-10

TRELLO UPDATED (Acceptance criteria) 0-10

WORKING Product Backlog Items at the Demo [NOT ON SPRINT 0] 0-10

Sprint template Evaluation 0-10

SPECIAL BONUS POINT (+1) per INDIVIDUAL CONTRIBUTION

FOR THE NEXT WEEK session: Deliver Sprint 0 Retrospective Sprint 0. Sprint 1 Planning

1. End of Sprint 0. Run demo with WORKING SOFTWARE. Show design decisions and frameworks running.
2. Review Sprint 0: Run retrospective.
3. Sprint 1 planning