Software Engineering Project Workshop (SENG202)

Matthias Galster

Deliverable 1 – general feedback

September 7, 2020

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Shared space for this session

- Google Docs
  - https://docs.google.com/presentation/d/1PX2rvmsh184ugiB48qiMP6yfKWO9R8fpkODjsaH5B7k/edit?usp=sharing
- Link also on Learn
  - COVID-19 section under “Schedule changes” for 7 September
- Everybody can edit
  - No need to log in

Reminders

- Time left for Phase 2

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
September 7	September 8	September 9	September 10	September 11	September 12	September 13
September 14	September 15	September 16	September 17	September 18	September 19	September 20
September 21						

- Submit your weekly individual reflection (Mondays, 5:00pm)
  - Reflected on week 6 (?) – week 7 is next (due next Monday)

- Keep logging as you go (follow instructions)

- Labs (location TBC [e.g., online or “hybrid”]; watch Learn page)
  - Changed allocation of teams to sessions
  - Tutorial session and quiz: Advanced VC; stand-ups and feedback sessions

Changed allocation of teams to sessions

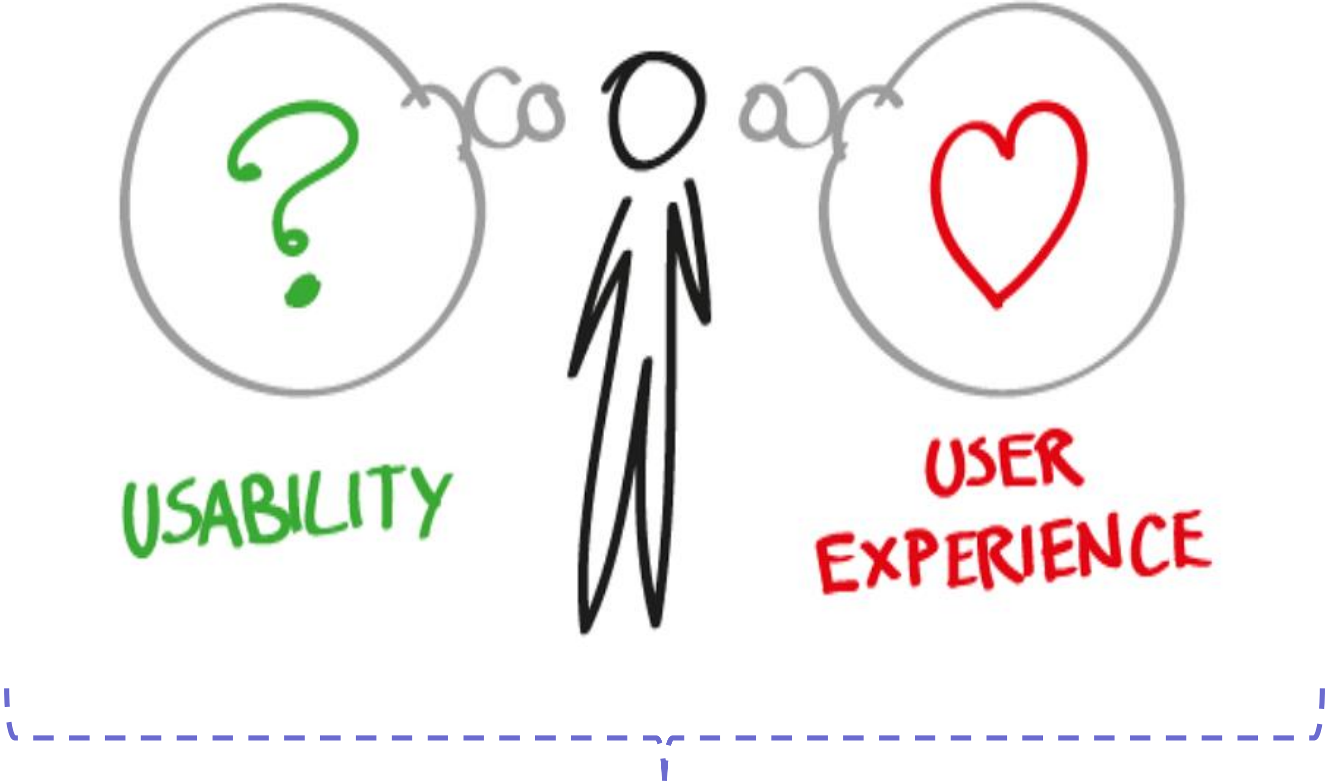
- Wednesday
  - Weekly status updates (5-minutes “stand-ups”) and feedback
    - Ernest Rutherford 140
    - Teams 1, 3, 5, 7, 9
  - Tutorial
    - Teams 2, 4, 6, 8, 10
- Thursday
  - Weekly status updates (5-minutes “stand-ups”) and feedback
    - Ernest Rutherford 141
    - Teams 2, 4, 6, 8, 10
  - Tutorial
    - Teams 1, 3, 5, 7, 9

Deliverable 1 – general remark

- First phase is often part of “norming”
  - Clarify expectations, logging, etc.

- Types of tasks different in Phase 2 and Phase 3

How useful is design



Of design and design document

(rather than the software)

Easy to avoid penalties (examples)

- Incomplete deliverables; late deliverables (individuals)
- Check submission guidelines (e.g., file name conventions)
- Changed templates, section headings, forms, etc.
- Changed order of sections of design document
- Number all (sub-)sections, include page numbers
- Use correct dates, check grammar, spelling; avoid casual writing

Contributions and consistency

- Unbalanced contributions
  - Between team members
  - Sometimes inconsistency between logs and contributions

- Consistency in quality
  - Quality of different parts of the deliverable varies
  - Maybe quality depends on who worked on what?

- Consistency in content
  - Between sections
    - E.g., context, requirements, acceptance tests, stakeholders
  - Sometimes within sections
    - E.g., requirements: software works offline but updates remote database

Traceability and rationales

- Traceability
  - Ensure traceability between stakeholders, use cases, requirements, etc.
  - Use labels for anything that will be cross-referenced; reduces ambiguities
  - Order tables, lists, etc. in some way, e.g., by priority, importance

- Rationale behind decisions?
  - E.g., priorities, link to stakeholders, use cases, key driver analysis
  - Be careful of spurious accuracies
    - E.g., is there really much difference between an 8 and a 9 for risk
    - What makes the difference between them? H/M/L might be enough?
  - Consider adding separate explanation

What is the project about?

- Executive summary
  - Should be about the whole document

- System context and relevant business information
  - Scope often vague – may cause difficulties later on
    - Cannot meet every requirement
    - Clearly identify what is in and out, and why
    - Is there a shared vision, short and snappy – elevator pitch
    - Check realism and relevance, e.g., legal requirements – check for all countries?
  - Comparison with existing products?
    - Include links and references to other products
    - If weaknesses in other products: how does your product overcome these?
  - Advantages and disadvantages

What do we want to develop and for whom?

- Stakeholders and concerns
  - Too many or too few stakeholders?
  - Priorities, explanation
  - Should be consistent with context, etc.

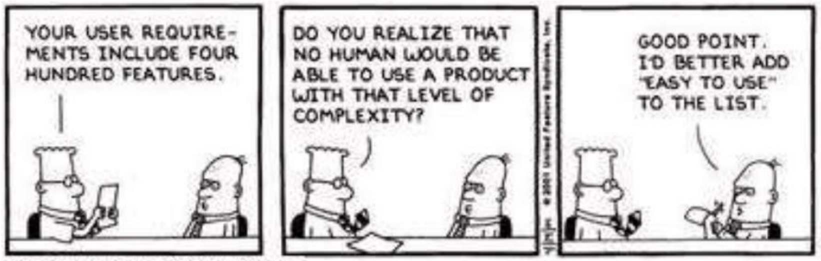
- User stories and use cases
  - Use correct naming and descriptive names
  - Use case in diagrams are not “flows” or steps in a sequence
  - Relationships between use cases
  - Actors?
  - Missing and/or too generic use case diagrams

Requirements

- Functional requirements, quality requirements
  - SMART?
  - INVEST?
  - Coverage of use cases
  - Priorities (scale, distribution)
  - Need to link to use cases

- Key drivers need justification

I'LL DESIGN THE SYSTEM AS SOON AS YOU GIVE ME THE USER REQUIREMENTS.
scottadams@aol.com
www.dilbert.com
BETTER YET, YOU COULD BUILD THE SYSTEM, THEN I'LL TELL YOUR BOSS THAT IT DOESN'T MEET MY NEEDS.
3/1/03 © 2003 United Feature Syndicate, Inc.
I DON'T MEAN TO FRIGHTEN YOU, BUT YOU'LL HAVE TO DO SOME ACTUAL WORK.
THAT'S CRAZY TALK.

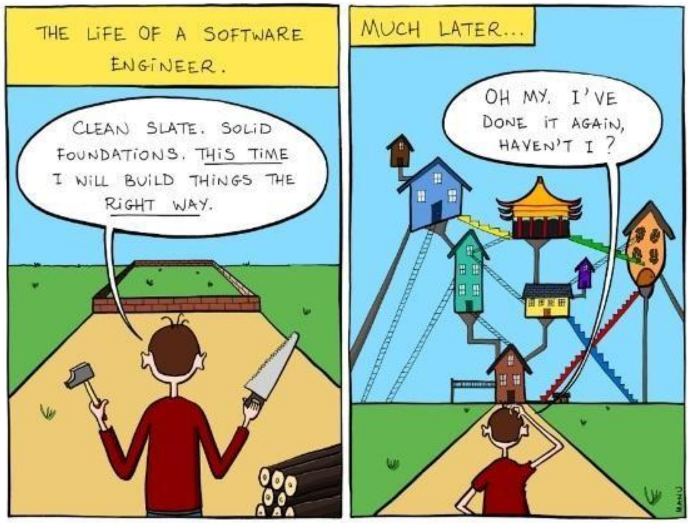

YOUR USER REQUIREMENTS INCLUDE FOUR HUNDRED FEATURES.
DO YOU REALIZE THAT NO HUMAN WOULD BE ABLE TO USE A PRODUCT WITH THAT LEVEL OF COMPLEXITY?
GOOD POINT. I'D BETTER ADD "EASY TO USE" TO THE LIST.

Deployment

- Deployment must match your business vision
  - E.g., networked clients, but what is this server?
- Must match use cases
  - What is needed to make use cases happen?
- Consider adding textual description

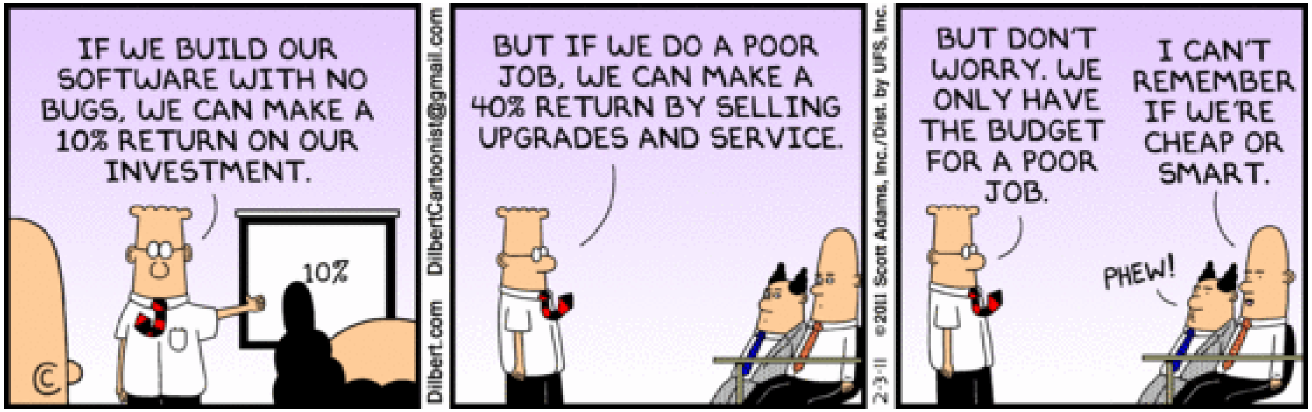
Class diagram

- Should be readable
- Method visibility, e.g., private getters and setters?
- Sparse use of interfaces, abstract classes, decompositions, etc.
- General design principles, cohesion and coupling?


THE LIFE OF A SOFTWARE ENGINEER.
CLEAN SLATE. SOLID FOUNDATIONS. THIS TIME I WILL BUILD THINGS THE RIGHT WAY.
MUCH LATER...
OH MY. I'VE DONE IT AGAIN, HAVEN'T I ?

Acceptance tests

- Acceptance criteria often not sharp enough
  - How would one decide if a test passes or fails ("Use case should work")
- No test cases
- Safest to assign to roles rather than specific people
- Differentiate criticalities – should reflect requirements priorities


IF WE BUILD OUR SOFTWARE WITH NO BUGS, WE CAN MAKE A 10% RETURN ON OUR INVESTMENT.
10%
Dilbert.com DilbertCartoonist@gmail.com
BUT IF WE DO A POOR JOB, WE CAN MAKE A 40% RETURN BY SELLING UPGRADES AND SERVICE.
2-3-11 ©2011 Scott Adams, Inc./Dist. by UFS, Inc.
BUT DON'T WORRY. WE ONLY HAVE THE BUDGET FOR A POOR JOB.
I CAN'T REMEMBER IF WE'RE CHEAP OR SMART.
PHEW!

Risks

- Incomplete, e.g., non-technical risks
- Major risk is unknown or changing requirements
  - Balance between planning and uncertainty is towards uncertainty
  - If uncertainty is major risk, how does a step-by-step plan reflect this?
- Need to include responsibilities
- Realistic risk mitigation strategies

WHAT'S THE LATEST ON THE SOFTWARE RELEASE DATE?
Dilbert.com
@ScottAdamsSays
WE'RE RIGHT ON TIME FOR THE PRE-ALPHA LAUNCH, UNLESS WE RUN INTO SOMETHING UNEXPECTED.
1-16-16
© 2016 Scott Adams, Inc. /Dist. by Universal Uclick
HOW OFTEN DOES THAT HAPPEN?
WHENEVER I NEED IT.

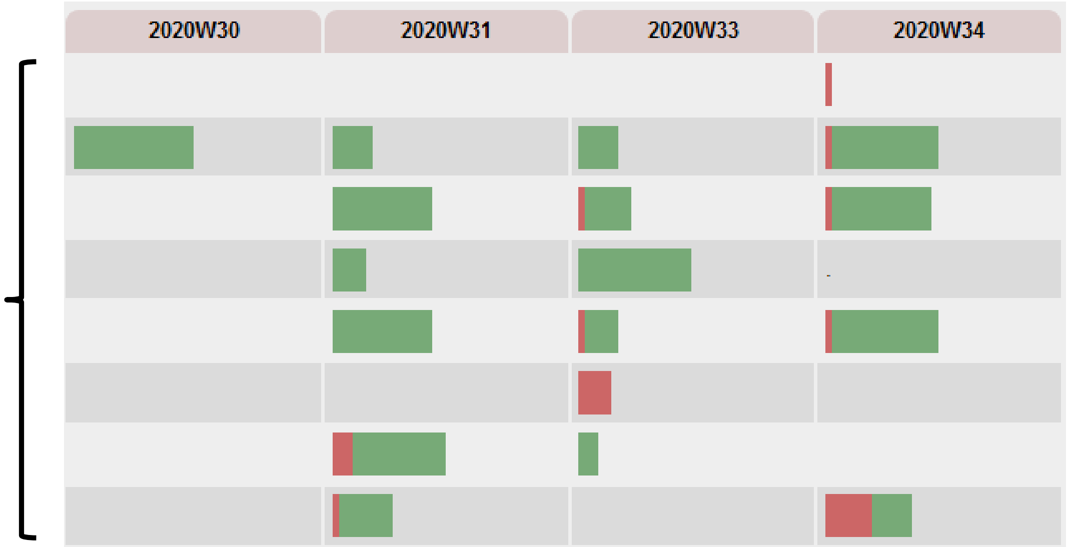
Project plan

- Is all about management
  - Other commitments, buffers, freeze dates
  - Key is how will you know how you are doing?
    - If plan is for management, then measurement is fundamental
  - Make it visual
    - Start with deliverables and milestones
    - Everything else is “how”
    - If we cannot understand plan, we cannot use it to manage

IS THE SOFTWARE ALMOST DONE?
YES, ALMOST.
Dilbert.com @ScottAdamsSays
NOT THE FINAL RELEASE – MORE LIKE A BETA MVP.
MAYBE MORE OF AN ALPHA.
1-15-16 © 2016 Scott Adams, Inc. /Dist. by Universal Uclick
HAVE YOU EVEN STARTED?
THE MENTAL STUFF IS ALMOST DONE.

Phase 2

Repository history of random team



Credentials?

Schedule until final due date

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
September 7	September 8	September 9	September 10	September 11	September 12	September 13
September 14	September 15	September 16	September 17	September 18	September 19	September 20
September 21	September 22	September 23	September 24	September 25	September 26	September 27
September 28	September 29	September 30	October 1	October 2	October 3	October 4
October 5	October 6	October 7	October 8	October 9	October 10	October 11
October 12	October 13	October 14	October 15	October 16	October 17	October 18