



Team Project



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School Project?



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Although this is a School Project, we try to make it as realistic as possible.

Level of complexity in your solution?

The 80 – 20 Rule:

- It takes 20% of the time to finish 80% of your application -> Prototype (80% finished)
- 80% of the users only use 20% of the features

Conclusion:

- Someone always tends to make things more complicated than necessary!
- The main goal in this Project and Course is to make a functional Prototype! – Not a fully working professional Product ready for sale
- Estimated Hours: 270 hours

Learning by doing



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Compared to other courses, you need to start working from day 1!!

If you are lagging behind from the beginning, you will have problems catching up!

A typical Project



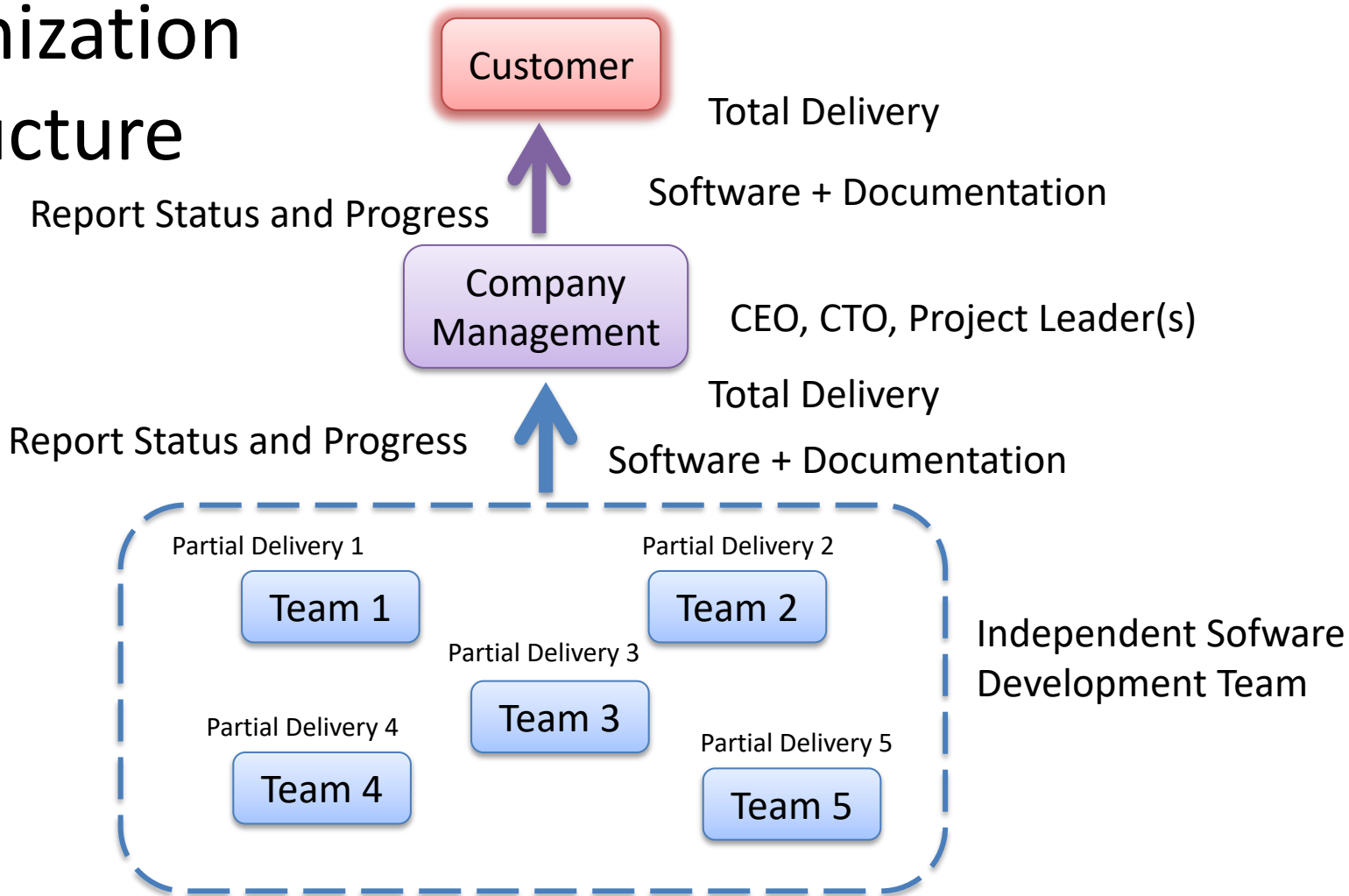
Plan your Work Properly

If you plan your work properly and work hard day by day, everything gets so much better



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Organization Structure



Software Developers Wanted

Are you interested?



Utviklingsjobb i programvarehus

Are you the one?

Vi har for tiden stor etterspørsel etter dyktige .Net utviklere.

Er genuint opptatt av programmering og har relevant erfaring ber vi deg kontakte oss.

Kvalifikasjoner:

Minimum Bachelor med vekt på programvareutvikling

Ønskelig med noen års relant erfaring - solid relevant praksis og konkret erfaring kan kompensere for utdanning

Det er ønskelig at du har god kjennskap til:

C#, .Net-rammeverk og ASP.Net

Javascript

HTML5,

SQL databaser

Smidige utviklingsprosesser (scrum etc)

Gode ferdigheter i norsk og engelsk skriftlig og muntlig er nødvendig

Søknadsfrist: Snarest

Do you have what it takes?

Now is the chance to prove it!

(This is a real job ad found on the Internet)

Easily

You can get this job when you are finished with this Project!

Resultat – Hva kunne blitt gjort annerledes?

- Mer fokus på prosessen (SCRUM)
- Mer strukturert arbeid
- Mer fokus på kontinuerlig dokumentasjon

Refleksjoner fra tidligere års studenter som det er verdt å merke seg





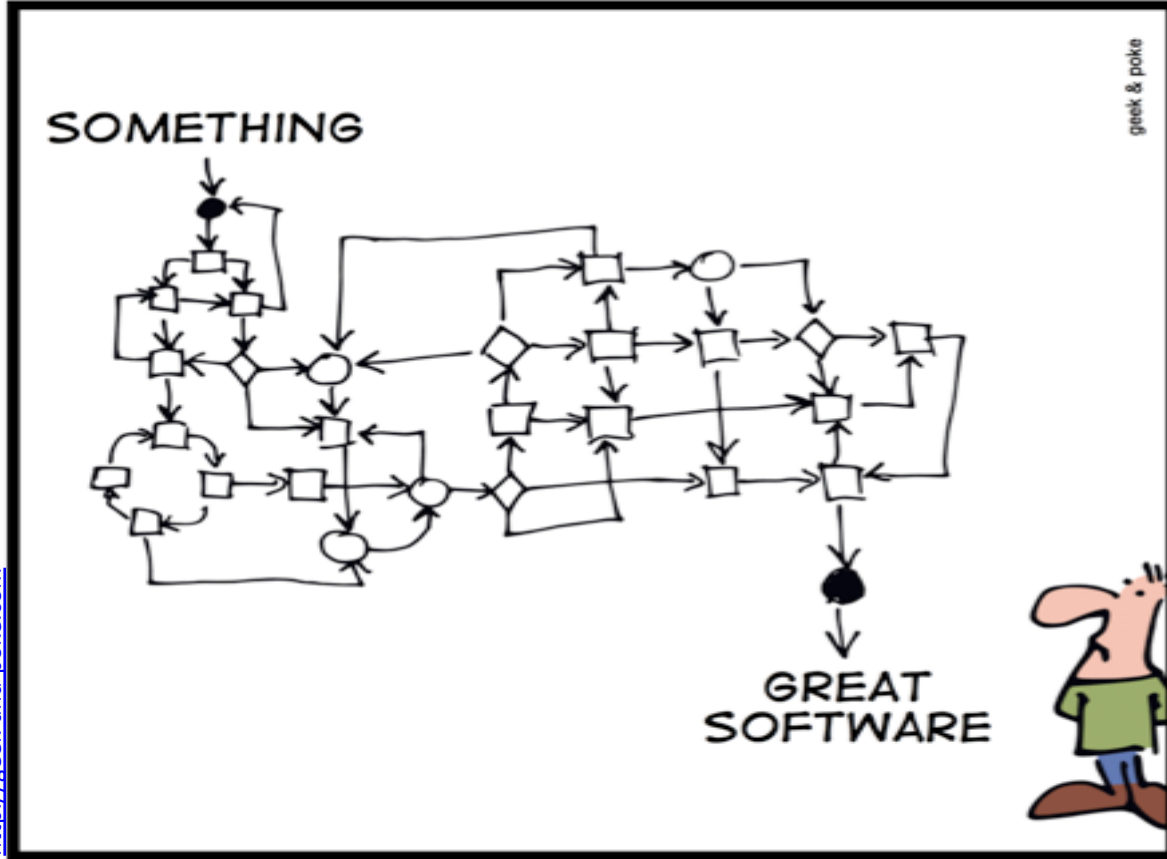
Practical Project Information



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SIMPLY EXPLAINED

O. Widder. (2013). *geek&poke*. Available:
<http://geek-and-poke.com>



DEVELOPMENT PROCESS

Project Contents & Delivery

- Planning the Project
 - Create **Software Development Plan (SDP)**
- Create Requirements & Design
 - Create **Software Requirements Specifications (SRS)**
 - Create **Software Design Document (SDD)**
 - Create Database Diagrams (as part of SDD)
 - Create UML Diagrams (as part of SDD)
- Implementation/Coding
- Testing
 - Create a **Software Test Plan (STP)**
 - Do Software Testing, Bug Reporting, Bug fixing (Create **Software Test Documentaion (STD)**)
- Deployment
 - Create **Installation Packages, Install Software** in Production Environment
 - Create **Product Documentation** (Installation Guide, User Guide)

Project Management



Implementation/Coding



Practical Requirements

- All Systems should be developed using Visual Studio/C#. The whole system, or at least a part of it should be Web-based developed using ASP.NET.
- All Solutions should use SQL Server for Data storage and ERwin for Database modeling/design. Under Development the SQL Server should be installed on each of the Developer PCs
- Azure DevOps shall be used for Source Code Control, Document storage, etc.
- Modular: The systems should consist of several Modules/Parts that share information between them using APIs/Common Libraries and the Database storage.
- **Each member in the group should have a clearly defined responsibility** (e.g. responsible for a specific Module or Application)
- All Members shall do Coding! The System should be modular so that each member can be responsible for a specific module.
- Code + GUI should be in **English**, Database/UML should also be in English, while other Documents may be in Norwegian.
- Handling Data Security and GDPR regulations (data protection and privacy) needs to be a part of the Requirements, Design and the final Solution.

Modular



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The systems should consists of several Modules/Parts that share information between them using **APIs**/Common Libraries and the Database storage

System Specifications/Requirements



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You need to create the specifications/requirements in details!

An important part of this course is about Requirements Engineering and how to create Requirements/Design at different levels.

Level of complexity in your solution?

Someone always tends to make things more complicated than necessary!



Estimated
Hours:
270 hours

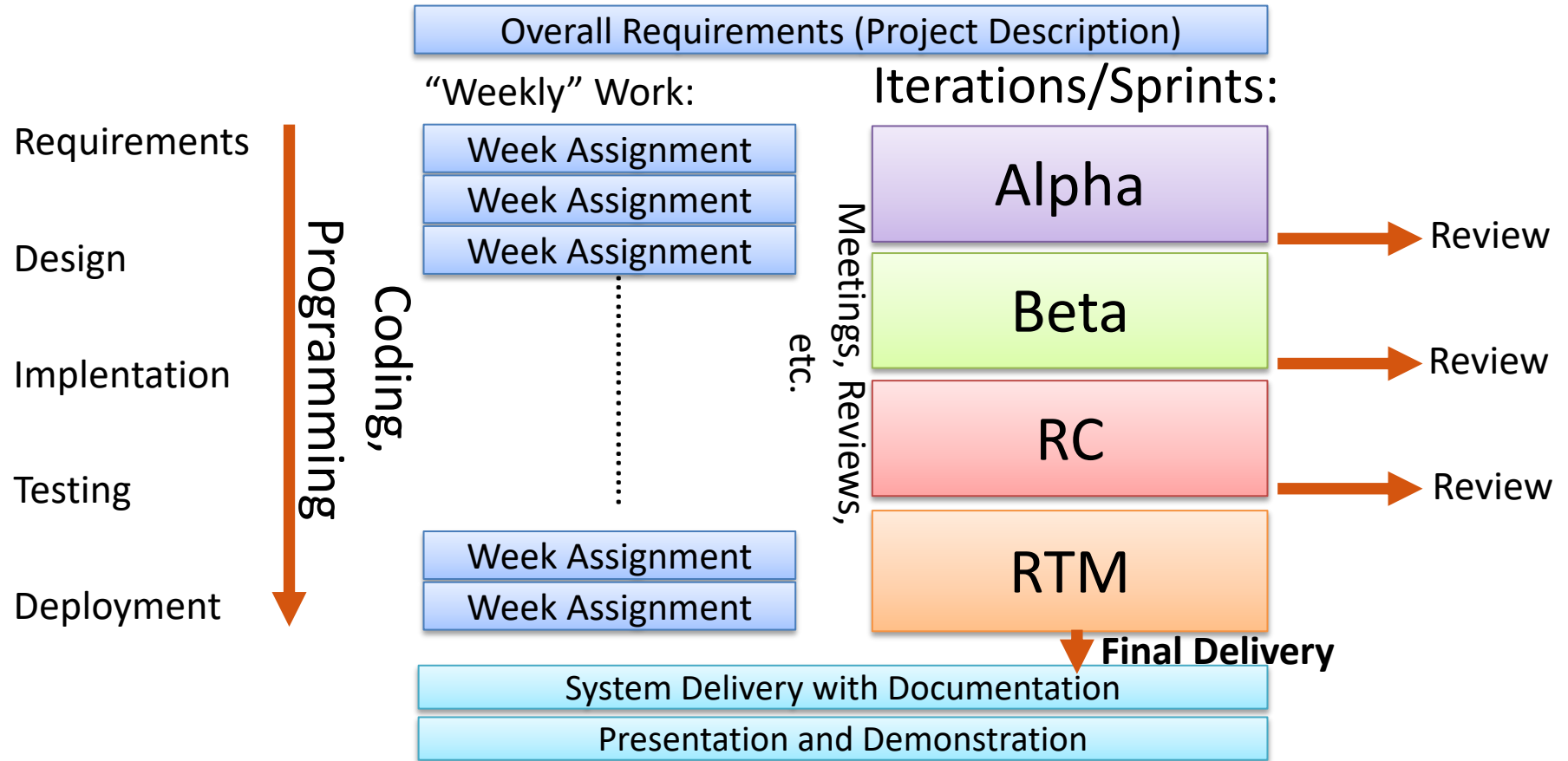


80 – 20 Rule

- It takes 20% of the time to finish 80% of your application -> Prototype (80% finished)
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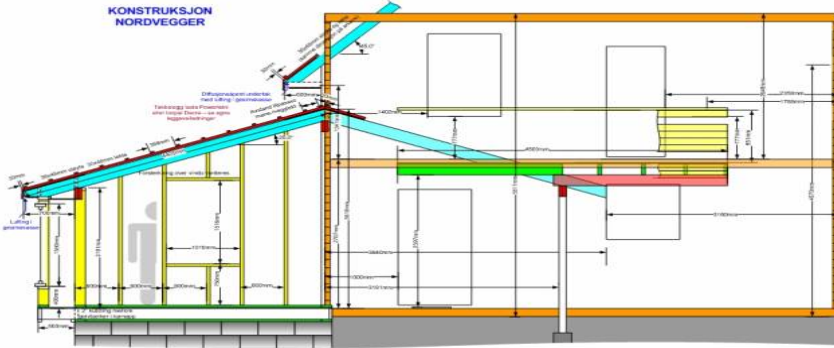
The main goal in this Project and Course is to make a functional Prototype! – Not a fully working professional Product ready for sale

Team Project Milestones



Requirements/Design

Alpha



Plans made and approved

Foundation finished, building structure started
A "proof" that you can do it, PoC (Proof of Concept)

Beta

RC



RTM

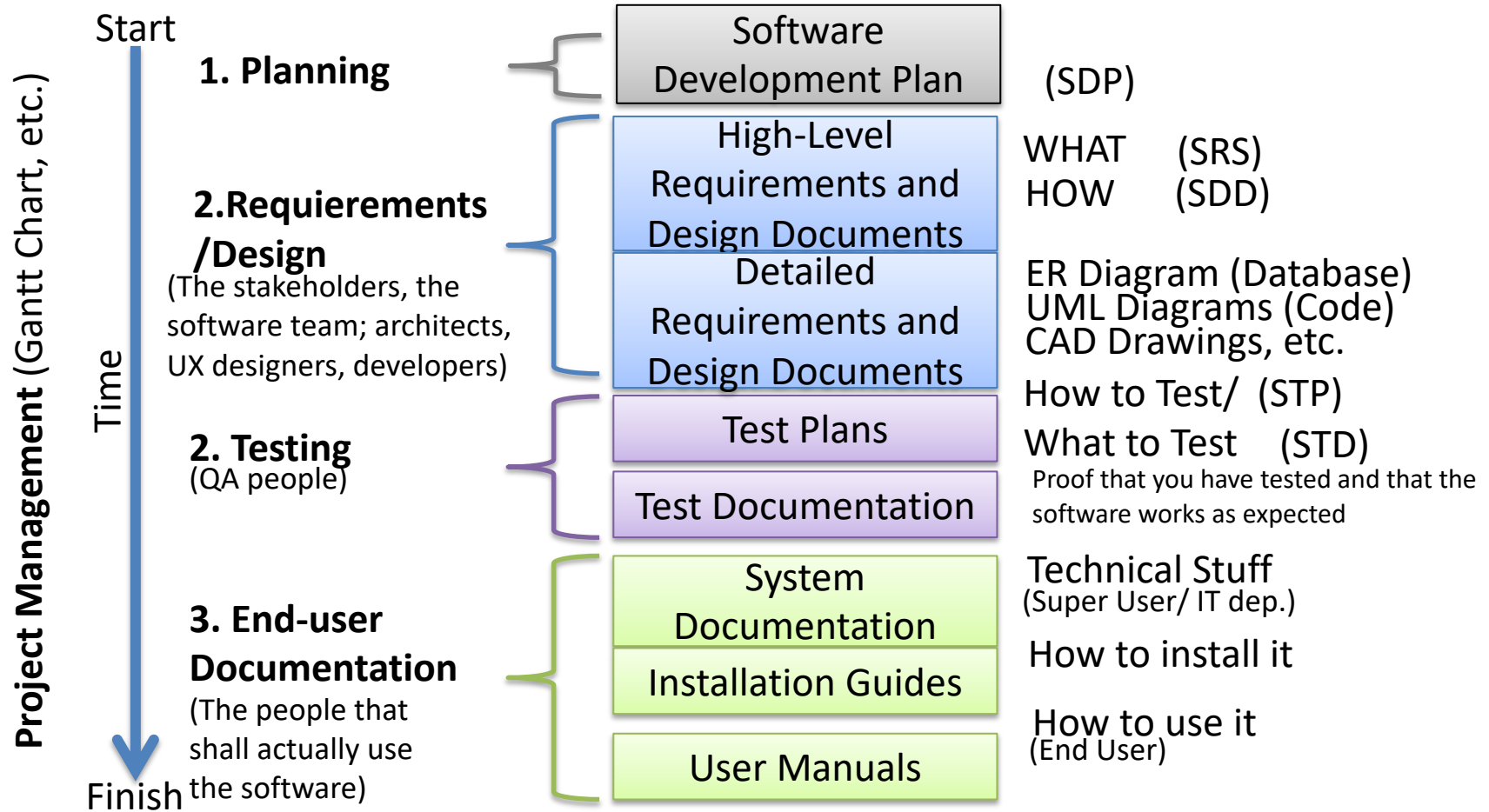


Building structure finished,
Inside work on track

Furniture, Flowers and
small adjustments missing

Ready for Sale or Move in

Typical Software Documentation





Project Planning



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Think outside the box!



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Challenge yourself!

“Thinking outside the box” is a metaphor that means to think differently, unconventionally, or from a new perspective.

Brainstorming/Kick-Off Meeting

A Project should always start with a Brainstorming

- Involve all in the group
- Discuss what you are going to do in the project
- How are you going to solve the project?
- etc.



Brainstorming/Kick-Off Meeting



Communication is the key to success!

How to avoid Communication Problems:

- Listen to all with concentration: Don't pre-judge
- Give all team members a turn: See the value in every idea
- Don't make assumptions: Ask questions to clarify
- When in doubt, communicate!!

Communication!



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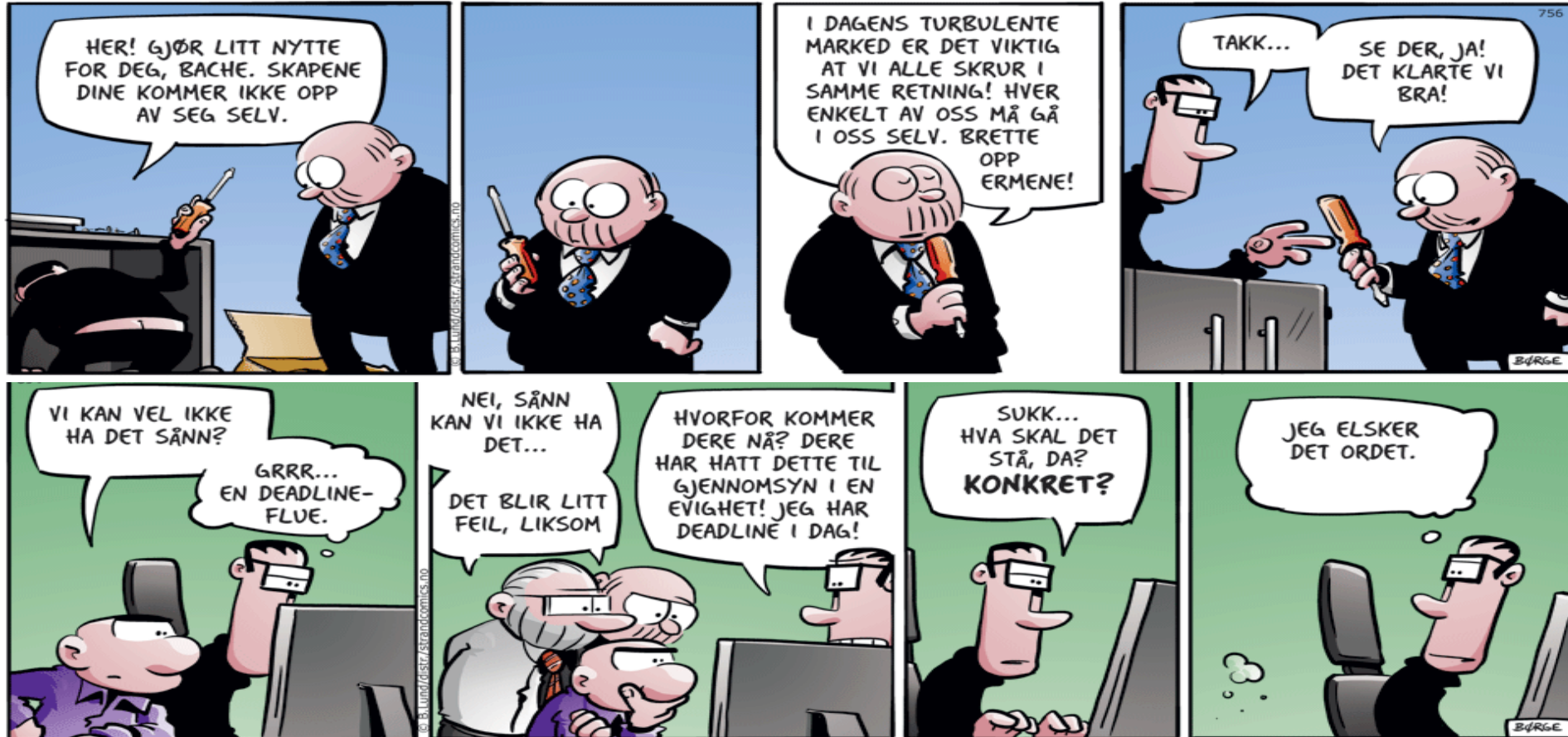
- Problems inside the team? – Discuss it immediately within the team!
- If no improvements – involve the supervisor as soon as possible!

Documentation



Team Work!

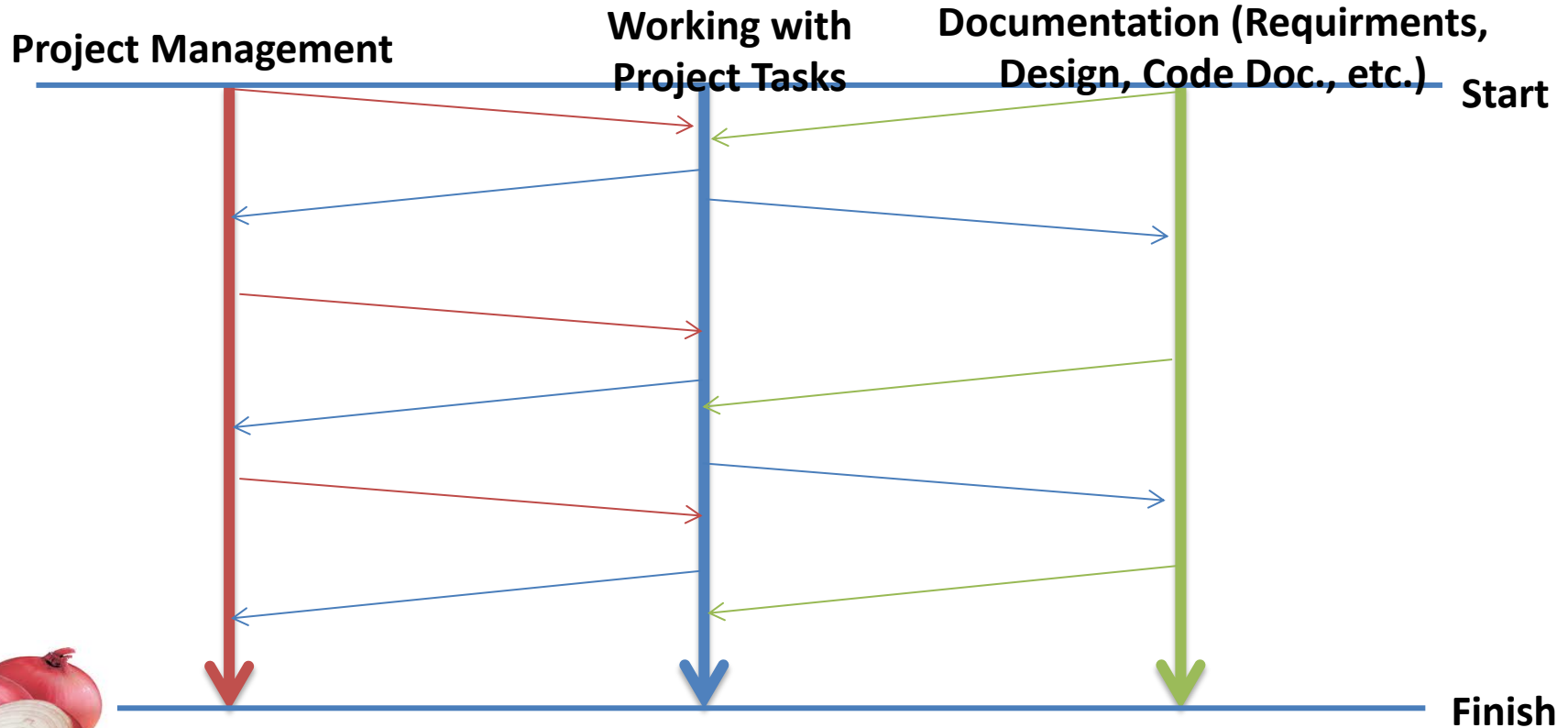
- Everyone must participate!!





This requires effort from you!

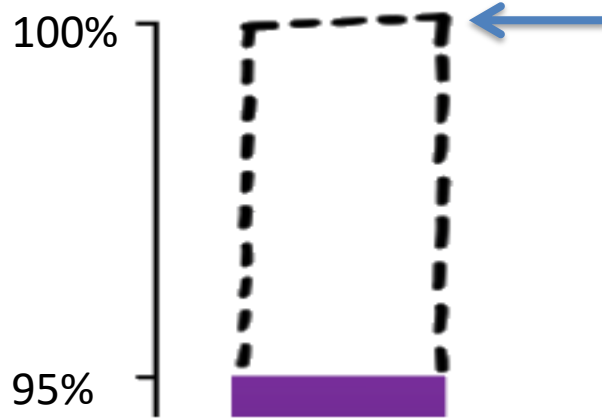
How to Work in the Project Period



Important: Work with these activities in parallel!!!



Do not do anything “half-baked”!



“95%” is not good enough in Software Engineering!

Finally..

- This Course is Research-based using the Project/PPBL Approach as the main learning method
- The Teacher don't have all the answers (very few actually ☹️) !
- Use the Resources within the Team!
- Use existing Tutorials, Exercises, recommended Textbooks, Web pages, etc.
- Communicate & Collaborate within the Team!
- Software Development is all about to work in a Structured manner!

References



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VI MÅ SETTE EN
LANSERINGSDATO,
BACHE.

KAN DU IKKE BARE
SPØRRE DEM SOM JOBBER
I PROSJEKTET? VET IKKE
DE HVOR MANGE TIMER
DE TRENGER PÅ Å
BLI FERDIGE?



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ER DU GAL? DE
ER INGENIØRER! DE
BLIR ALDRI FERDIGE!

SANT NOK. VI
MÅ GI DEM NOE
MENINGSFULLT Å
STREKKE SEG MOT.



... OG DET
ER?

... EN MENINGSLØS
MESSEDATO.



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