Software Engineering, 2013
Not a course, it is a Job

EXTREME
ROLLERCOASTER
RIDE

SOME QUESTIONS FOR YOU?

WHY SOFTWARE ENGINEERING?

Is there a Crisis?

"The **demand** for software has grown far **faster than our ability** to produce it. Furthermore, the Nation needs software that is far more **usable, reliable, and powerful** than what is being produced today.

We have become **dangerously dependent** on large software systems whose **behavior is not well understood** and which often fail in unpredicted ways."

http://www.cra.org/govaffairs/advocacy/pitac_fs.pdf

Did you know that …

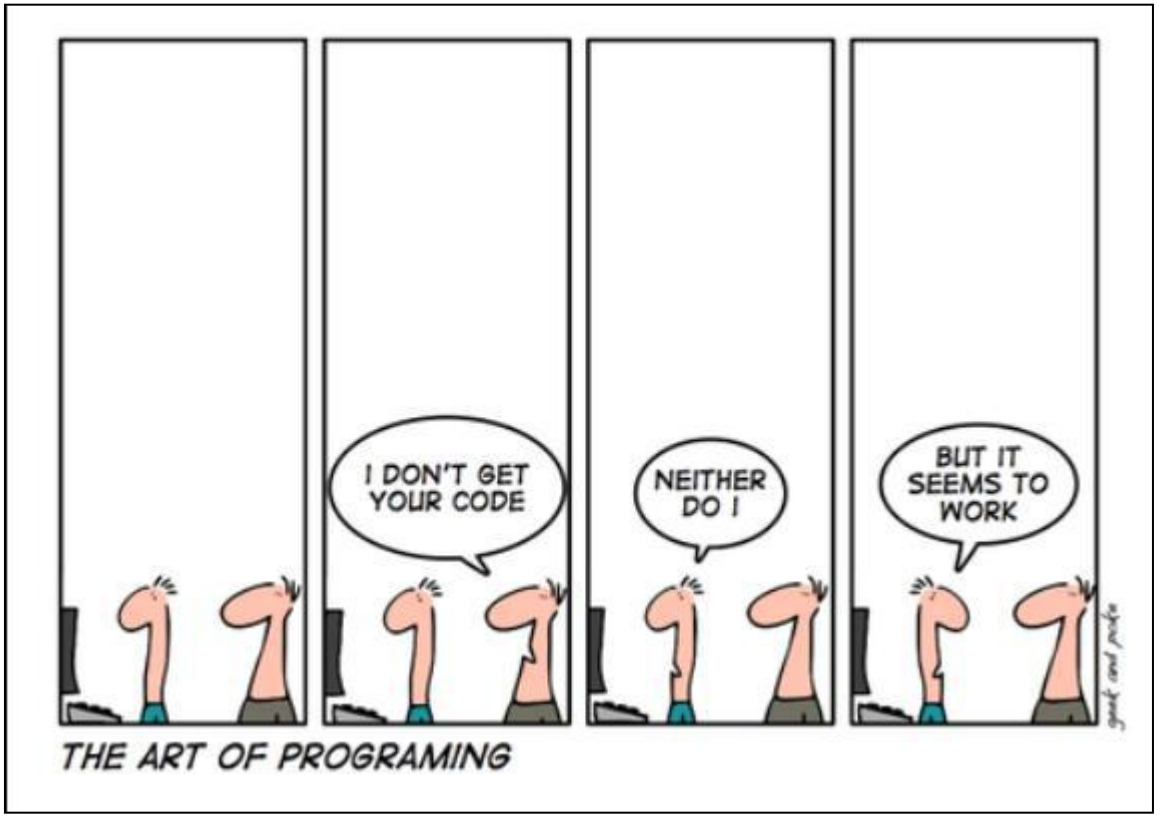
- Only **one in eight** finished software projects is considered successful.
- The probability of **cancellation** is about **50%** for biggest systems
- **3/4** delivered systems are regarded as **failures** (not used at all or don't meet customer requirements)

http://staff.frederick.ac.cy/com.bd/Software%20Engineering/Readings/The%20Software%20Crisis.pdf

Hacker or an Engineer?

"My code runs ... What else is there?"

A Student



Software Process

A structured set of activities required to develop a software system:

- Requirements
- Analysis
- Design
- Implementation
- Deployment
- Testing

“Software Engineering is about writing documents” ...

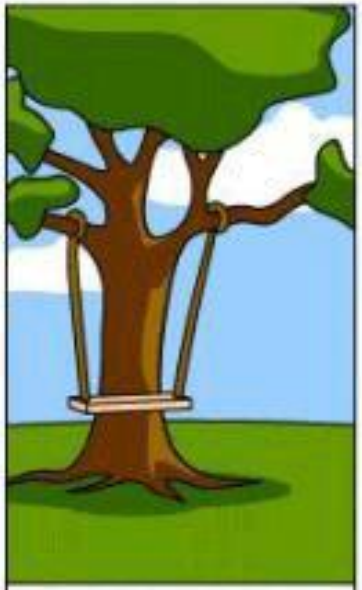
A graduate student

My Goal

“Introduce the core concepts of Software Engineering: what it means to work on a team to make a product by an immovable deadline.”

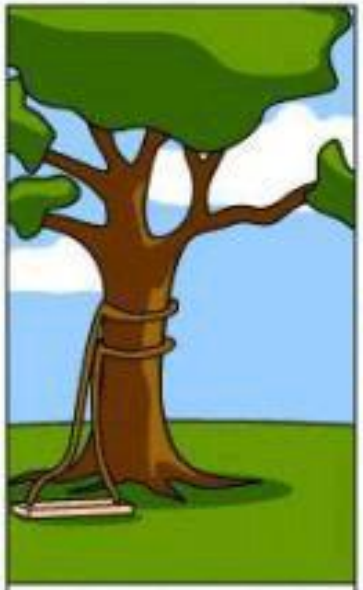
Kevin Cathey

How the customer explained it



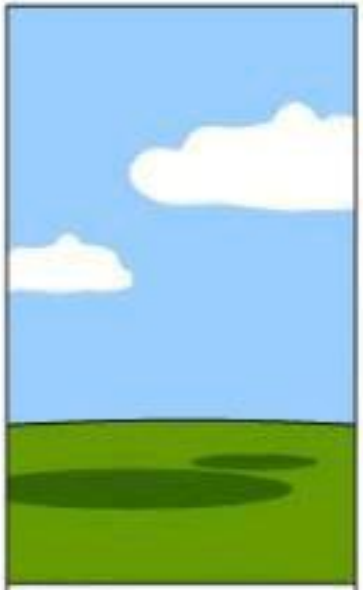
How the Project Leader understood it

How the Analyst designed it

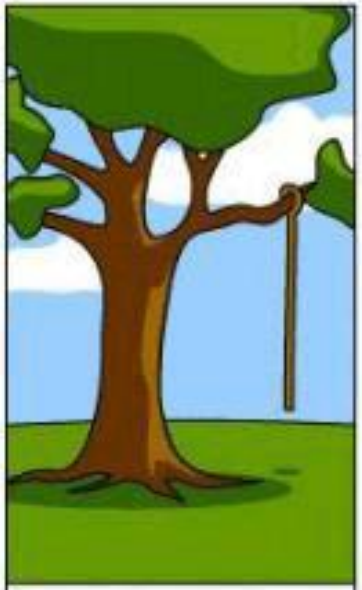


How the Programmer wrote it

How the Business Consultant described it

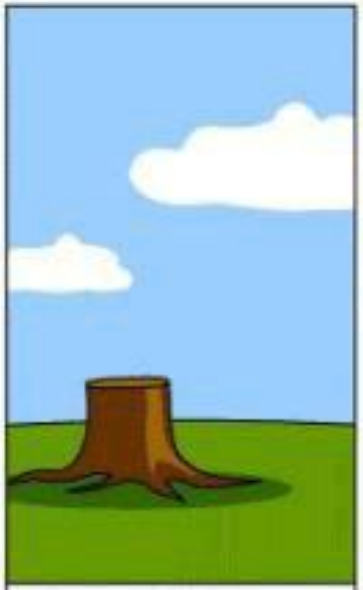


How the project was documented



What operations installed

How the customer was billed



How it was supported

What the customer really needed

Agile Software Development

Agile processes focus on iterative and incremental development, customer collaboration, and frequent delivery through a light and fast development life cycle.

The Work Environment

T06 Cool Soft

T07 Mega Soft

T08 Smart Soft

T12 Top Soft

T11 Share Soft

Real Software Systems

- Project ideas from industry (real customers : NGOs or startup companies)
- Every company will work on a different project/ different technologies
- Your project will be launched in real life
- The customer will answer questions about your requirements and watch your demos during the semester

SE Workshop

- The project ideas will be presented today during the workshop
  - Robusta
  - Shoghlanah
  - Arability
  - Medaad
  - من الماء حياة

Project Selection

- You should listen carefully to all ideas
- After the workshop is done, you talk as a group with your team mates to discuss
- In your meeting the week after, we will come and you will tell us why you want the specific project.
- Based on your reasons, we will assign the projects

The Competition

- All the companies will compete for the following titles:
  - Best Company (all members worked together and followed the process successfully to deliver the product) –All members take medals)
  - Best Component (all component members excelled in delivering their component)
  - Best Company Manager
  - Best Team Lead
  - Best Reviewer
  - Best Focal Point
- recommendations for internships

Coolsoft 2009

Coolsoft 2011

Smartsoft 2010

Terasoft 2012

Former _softians said:

"It is a life changing experience."

"...We've learnt how to take responsibility, to perform well under pressure, to work [with conscious] on our tasks, to take challenges to the next level – always"

"...it really has motivated me to work and focus on all the other subjects too."

"... It even got me motivated to care more about school."

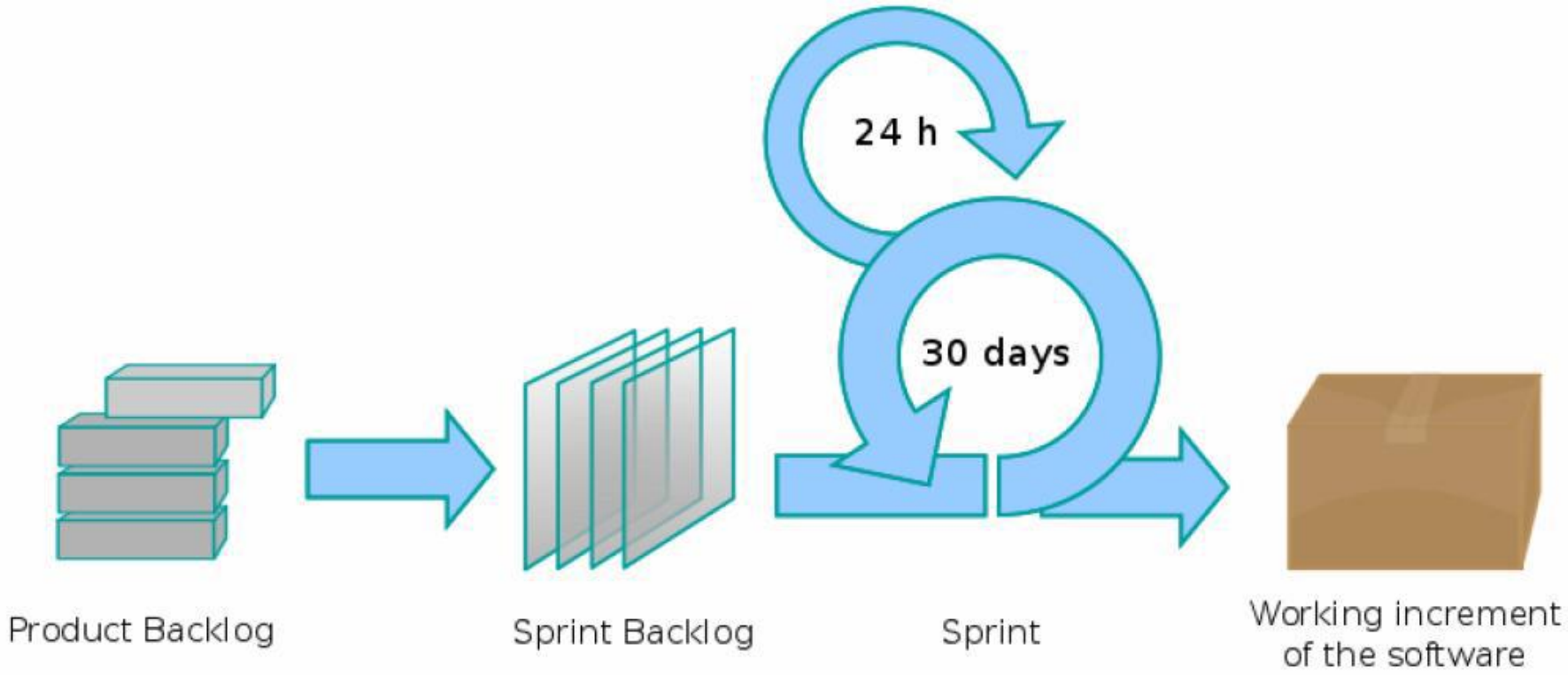
FAIL

Video

Agile, specifically Scrum..

- Scrum: the most popular agile software management process.
- Requirements Engineering, Planning, Design, Refactoring and Testing
- Software Configuration Management (Mostly through the project)
  - Version Control
  - Bug Tracking
  - Automated Building
- Extreme Programming techniques

Scrum



From: http://en.wikipedia.org/wiki/File:Scrum_process.svg

Scrum

“Teams should be self-managing, self organizing, and cross-functional to maximize team performance. All of the team members are responsible for both the success and the failure of sub-systems and of entire systems”

http://www.iacis.org/iis/2008_iis/pdf/S2008_950.pdf

Scrum Masters

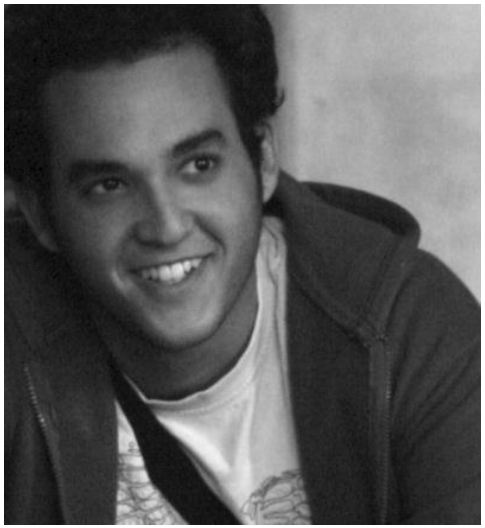
- Every Company has a scrum master
- The scrum master is a coach who supports every company
- They don’t code for you or debug for you but they guide you to resources.
- Treat them the way you would treat your boss in real life

The Scrum masters

T11 Sharesoft
Eng.dinatarek@gmail.com

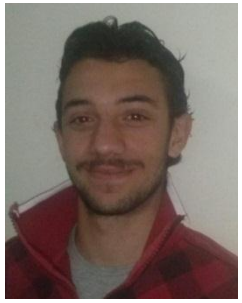
T07 Megasoft
Ndomar.14@gmail.com

T12 Topsoft
yousrahazem@gmail.com



T08 Coolsoft
yahiaelgamal@gmail.com

T08 Smartsoft
mgmohamedganem@gmail.com



Scrum is a life style

- Meetings:
  - You might need to organise up to 3 meetings with your company
  - Attempt to do all the work in the meetings, not at home
- (Think of it as a job)
  - Empowers teams (requires a character and attitude)
  - You review yourselves
  - You make your own decision of how to do things
- Mentors & focal points

Extra this year: Training Track

- These projects are real and needed
- Beside the activity in the “process” in the course, we will dedicate two slots per week for large training sessions in web development
- Attendance will be required
- Internships

Meetings/Absence or Lateness

- After 5 minutes late, you are considered absent and you still must to attend.
- What if you don’t attend, you lose the mark of the week’s submission
- We expect you to be early. Always aim to be around earlier.
- Any excuses have to be documented

What to do next

- Make sure you attend the workshop on Thursday
- Deadline: By Friday 8/2/2013 11:59 pm
  - Subscribe to your company's googlegroup:
    - Companyname-13@googlegroups.com (for example: smartsoft-13@googlegroups.com)
  - Send to your scrum master's email the following:
    - Gmail username
    - Create a github account (https://github.com/)
    - Application number
    - Full Name

Some Advice

- From now on, we switch to our virtual world.
- Doing well throughout the course is your only way to do well in it
- Answer questions and get candy
- There is no open door policy in this course, you have to email me to ask for an appointment and state the reason.
- Don’t skip your coach (unless the complaint is regarding your coach)
- Start early, ask early, follow the steps and templates given and you won’t have any problems

From now on, forget ...

- Terms like: Course, TA, JTA or Tutorial
- Extensions (of deadlines)
- Being late
- Caring for grades
- Excuses: I had a quiz, an exam, a wedding or whatever..
- Excuses: Too much work …
- Throwing blames: I did the work but he submitted it
- Tazbeet: a hero doing the work for others…