CPSC 310 – Software Engineering

# Lecture 1 – Introduction

Marc Palyart

Many thanks to Elisa Baniassad, Meghan Allen, Eric Wohlstadter, Philippe Beaudoin, Gail Murphy, David Shepherd, Thomas Fritz and Neil Ernst

# Developing software systems is hard
# Ariane-5

http://youtu.be/gp_D8r-2hwk

*"The failure occurred because the horizontal velocity exceeded the maximum value for a 16 bit unsigned integer when it was converted from it's signed 64 bit representation. This failure generated an exception in the code which was not caught and thus propagated up through the processor and ultimately caused the SRI to fail."*

Ref: ARIANE 5 Flight 501 Failure Report by the Inquiry Board

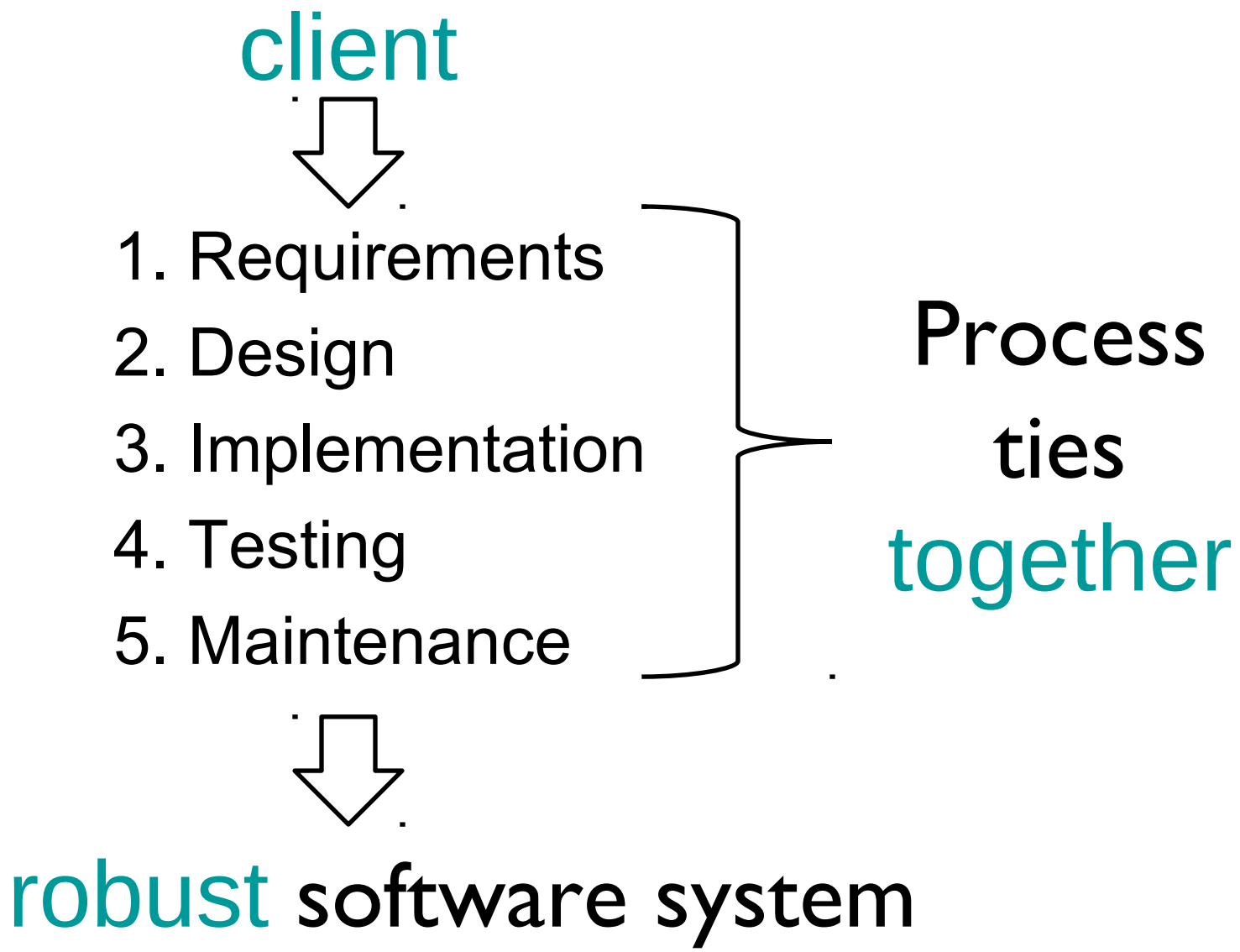
# What is Software Engineering?

People working together to create a robust software system that satisfies the client.

# Bad SE practices create…

- Projects running
  - over-budget
  - over-time
- Software of low quality
- Software that do not meet requirements
- Software difficult to maintain
- Stressed employees
- Poor customer value

# Phases of Software Engineering



# SE *vs* Typical class projects

| | Class project | Industry project |
|---|---|---|
| Time | 1-2 weeks | Years, months |
| People | 1-4 | 10 - 100s |
| LOC | 100s | Millions |
| Capital at stake | 0 | Millions |

# About me…

Marc Palyart

mpalyart@cs.ubc.ca

ICCS X469 (X-Wing)

***Office hours:***

- Right after class, Monday/Wednesday/Friday
- I'm always available by appointment. Please ask if you need extra time or privacy.

# Announcements

- Labs start during the week of Sept 10th and will be focused on the project.

- Lab attendance is mandatory. You will lose 1% of your overall grade for each lab you miss without an acceptable reason. If you must miss a lab, please notify your TA and team-mates before the lab starts.

# Communication

Ask course related questions on Piazza

If you have a personal issue to discuss (eg, missing a lab due to illness) please post Piazza message to instructors only.

Please:

- Ask questions (use folders properly)
- Answer questions from the other students.
- No questions 24h before exams
- Do visit me during office hours.

# Resources

- Course web page
  - http://www.ugrad.cs.ubc.ca/~cs310
- Blackboard Connect (grades, might take time)
  - http://connect.ubc.ca
- Piazza (discussions)
  - piazza.com/ubc.ca/winterterm12014/cpsc310

# How to study?

- Know the facts
  - Listen actively in class
  - Take notes
  - Do the readings seriously
  - Strive to identify factual information, while appreciating experiences described in anecdotal information
- Practice applying the facts
  - In-class activities are good for this
  - Be an active member of your team

# Project

- Large-scale development project
  - Tries to simulate “real-life” challenges
  - Uses tools/toolkits (Java, Eclipse, Git, GWT)
    - JavaScript optional
  - You can’t do everything yourself and will need to rely on your teammates
  - 4 students per team
  - TAs take ScrumMaster/Facilitator role

# Continuous Evaluation (project grade)

- Several bigger assignments
  - Learn the tools and toolkit
  - Elicit requirements / create product backlog
  - Create initial design
  - First milestone version (end of first sprint)
  - Second milestone version: release candidate (end of second sprint)
- "Daily Scrum" each week
  - 5 to 10 minute standup meeting in lab with TA
  - Discuss progress (accomplished tasks) and plan tasks

# Grading

- 35% Project and Assignments
- 40% Final
- 20% Midterm
- 5% Participation

- you must pass the final exam, the project, and the project sprints to pass the course
- Your “Daily Scrums” will be part of project grade
- peer evaluations will form part of the grading scheme for the project.

# Participation Grade

5% for your class activity submissions

When you submit your activity on Piazza (or on paper if necessary) a TA will mark it for participation rather than correctness. Frivolous or incomplete submissions will receive 0.

Take time to answer questions from your classmates. This will determine part of your participation grade.

# Copying, plagiarizing and credit

- Borrowing is a big part of software development
- However this class is about building your skills
- **DO**:
  - make use of APIs to help your project
  - collaborate where specified
  - work individually otherwise
  - give credit if you got “inspired” by something you saw on line.
- **DO NOT**:
  - copy code wholesale from an uncredited source
  - think we won’t be able to tell!!!

# Keys to success

- Attend lectures & lab
- Stay up-to-date on readings
- Pull your load in the group
- Work on your project consistently rather than leaving it until the end
- Be courteous to teammates
- Understand & use the tools

# After CPSC 310 you will be able to…

- Explain the technical and interpersonal challenges of software development
- Communicate technical matters with programmers, managers, and clients effectively
- Perform the activities/phases of software development effectively using modern methodologies and tools.