

Software Project: Course Intro

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A product developer & software engineer
since 2015

App Creator with 1M+ installs,
average of 4.9 stars on AppStore

TA team

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Software Project

Course structure

Assignments and teams

Software Engineering

Topics & Assignments Plan

- Introduction to SE
- SDLC and Process
- Exploring the domain
- Requirements Engineering
- Product backlog
- Scrum
- Estimating and measuring
- Architecture and Quality
- Quality Verification
- A1: Meeting your team and the customer
- A2: Requirements and Prototyping
- A3: Demo with customer
- A4: Architecture and Development
- A5: MVP V1
- A6: MVP V2
- Demo Day

Grading

- Assignments 30%
 - Project 30%
 - 10% Presentations
 - 20% Demo Day
 - Theory test 15%
 - Participation 15%
 - Peer review 10%
- $A \geq 90$
 - $B \geq 80$
 - $C \geq 70$

Teams Distribution

Teams of 5 people.

Each team should have 3 developers or more.

1. See available project ideas
2. You pick 5 ideas and fill the preference form
3. Instructors will do the distribution

Do things that matter

- Communicate with the customer
- Work as a team
- Apply best practices
- Move fast
- Build something useful

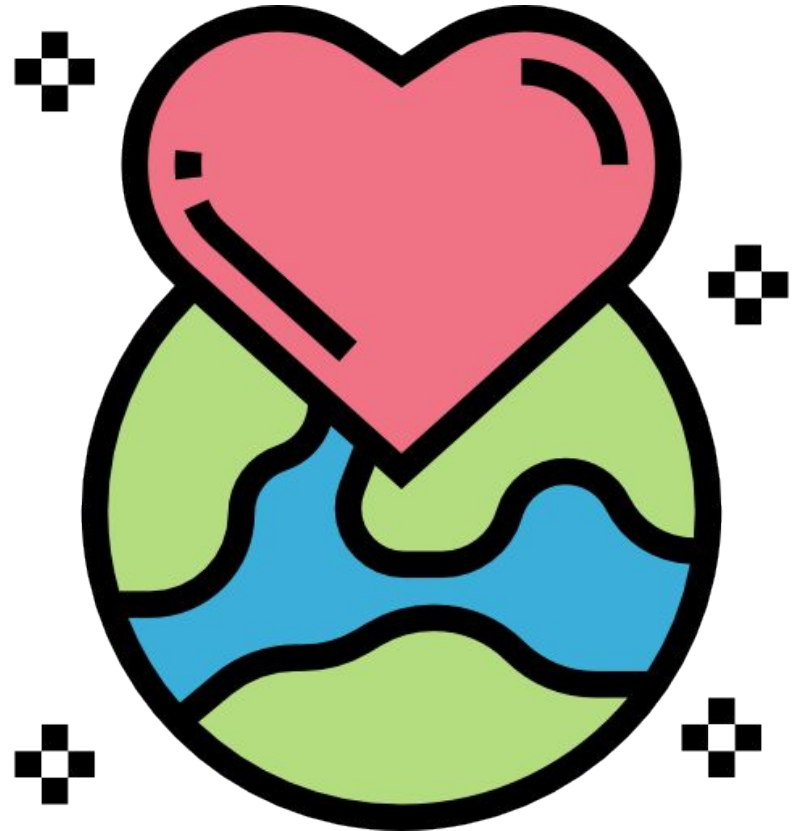
Working software is
the primary measure of progress.

So why build software?

Make money?



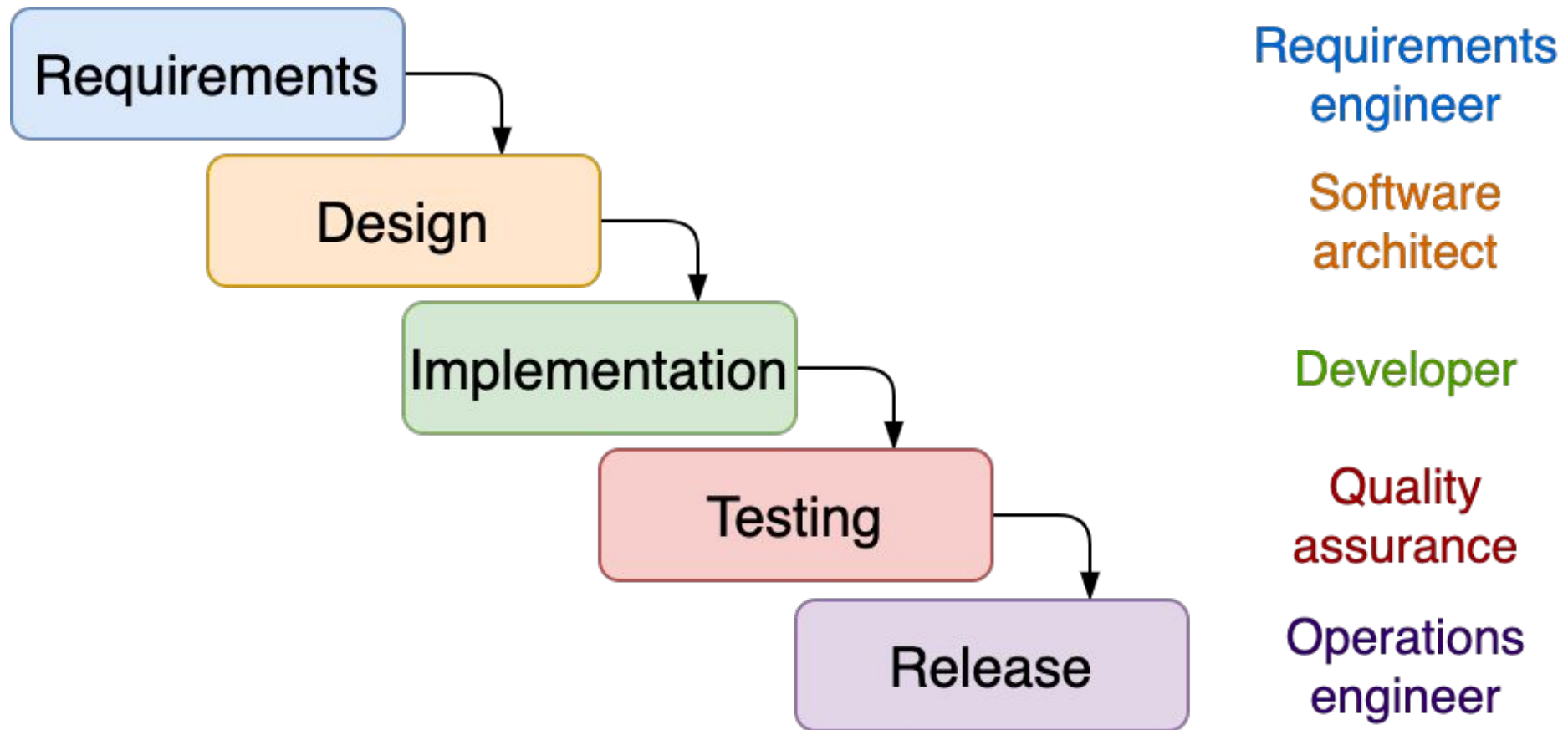
Make the world
a better place?



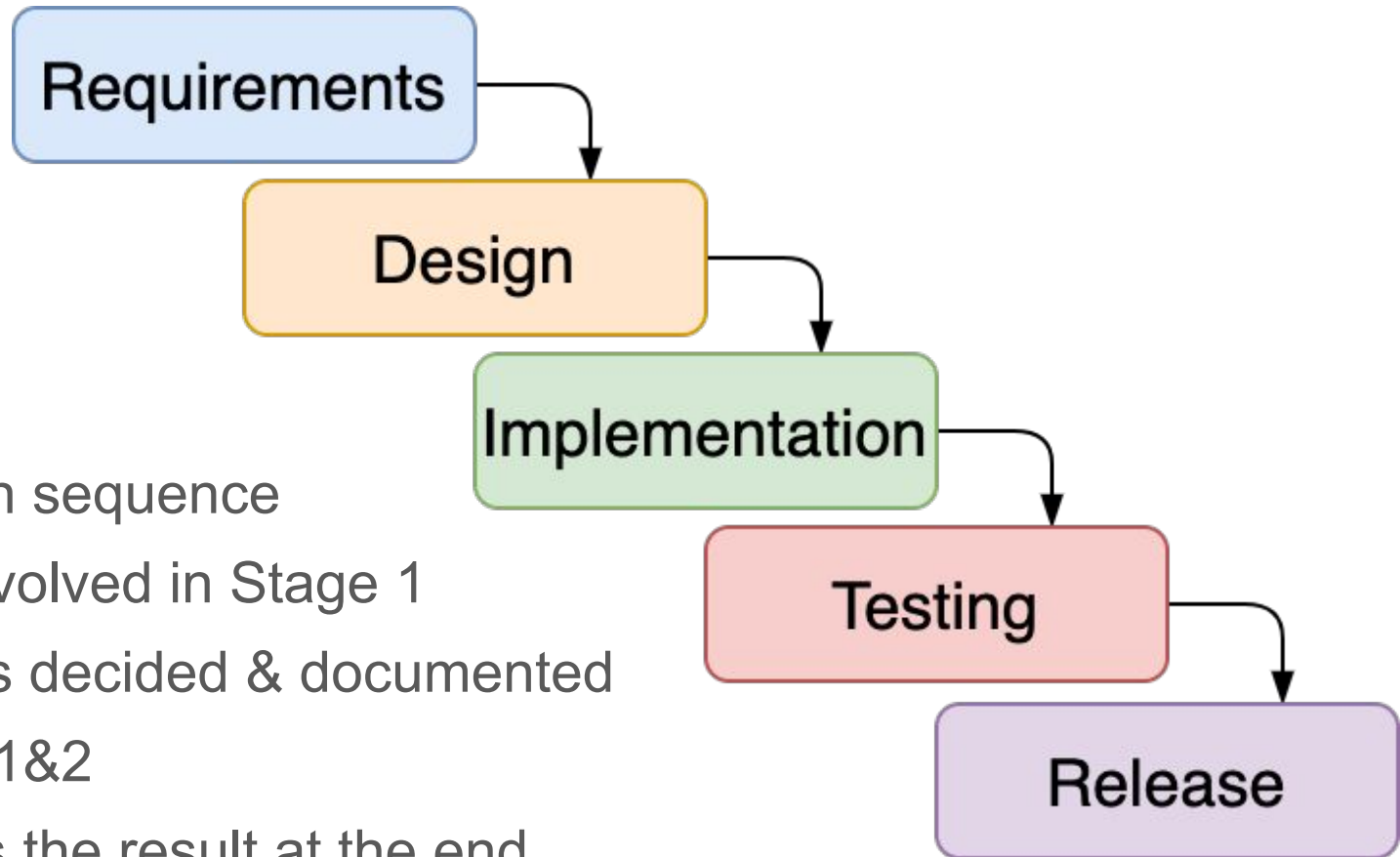
Our highest priority is
to **satisfy the customer**
through **early and continuous delivery**
of **valuable software**.

**Explain SDLC, Waterfall and
Agile evolution**

Traditional SDLC and Roles



Waterfall



- Stages come in sequence
- Customer is involved in Stage 1
- What to build is decided & documented during Stages 1&2
- Customer sees the result at the end

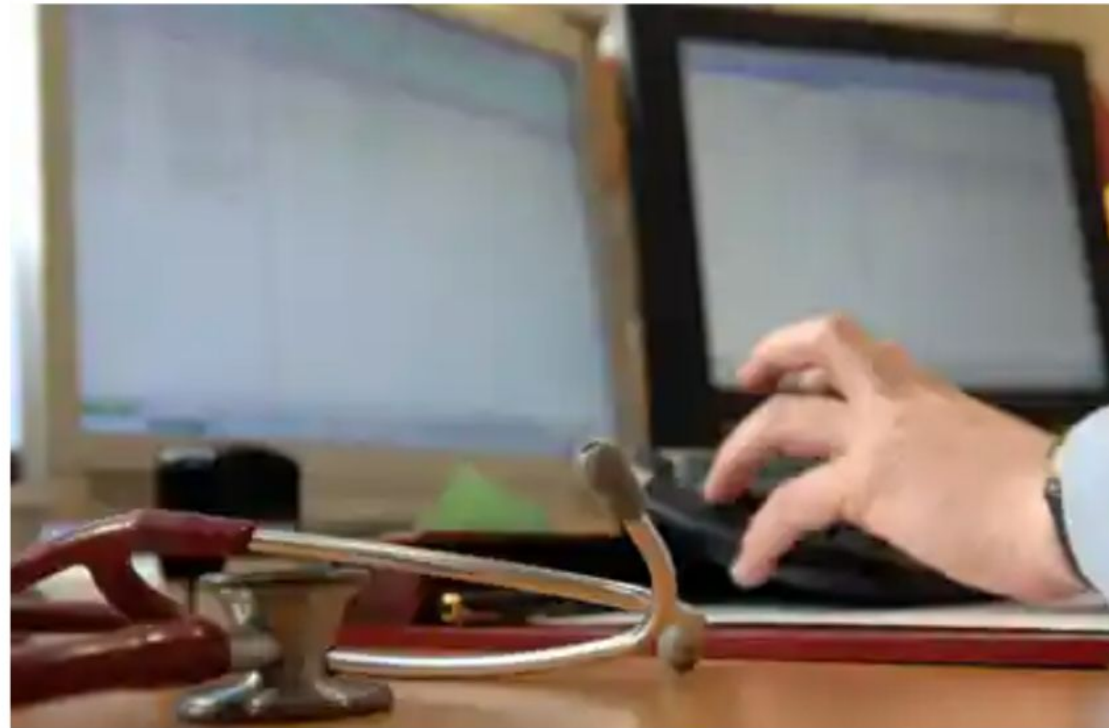
PROBLEMS WITH WATERFALL

- Development is hard to plan & predict
- You learn in the process
- Change is inevitable
- Flexibility is a must

● This article is more than 6 years old

Abandoned NHS IT system has cost £10bn so far

Bill for abortive plan, described as 'the biggest IT failure ever seen', was originally estimated to be £6.4bn



▲ The public accounts committee found that new regional IT systems for the NHS are also being poorly managed
Photograph: Martin Godwin for the Guardian

An abandoned NHS patient record system has so far cost the taxpayer more than £10bn, with the final bill for what would have been the world's largest civilian computer system likely to be several hundreds of millions of pounds higher, according to a highly critical report from parliament's public spending committee.

AGILE MANIFESTO

Customer collaboration over contract negotiation

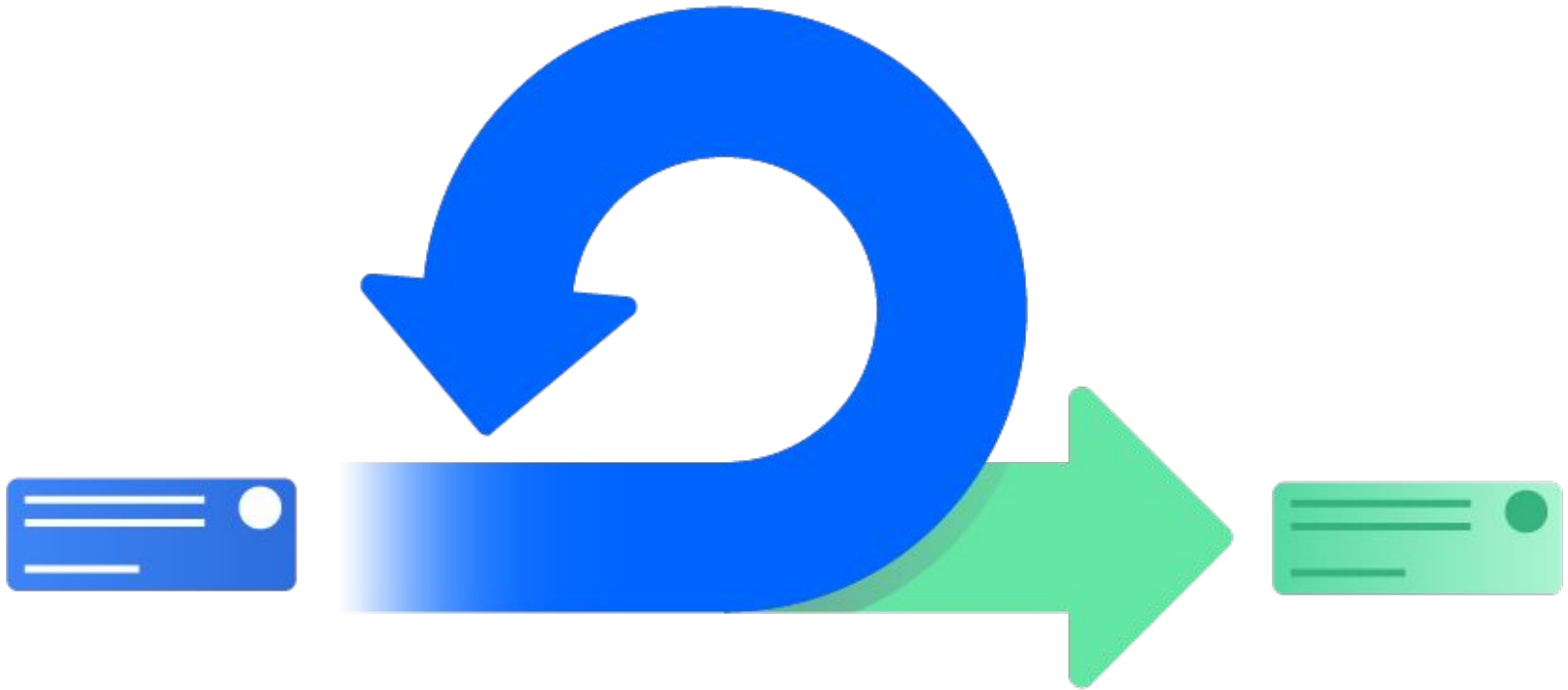
Responding to change over following a plan

Business people and developers must **work together daily** throughout the project

Deliver working software **frequently**: working software is the primary measure of progress

At regular intervals, the team **reflects** on how to become more effective, then **tunes** and **adjusts** its behaviour accordingly

Iterative Development: Sprints in Scrum



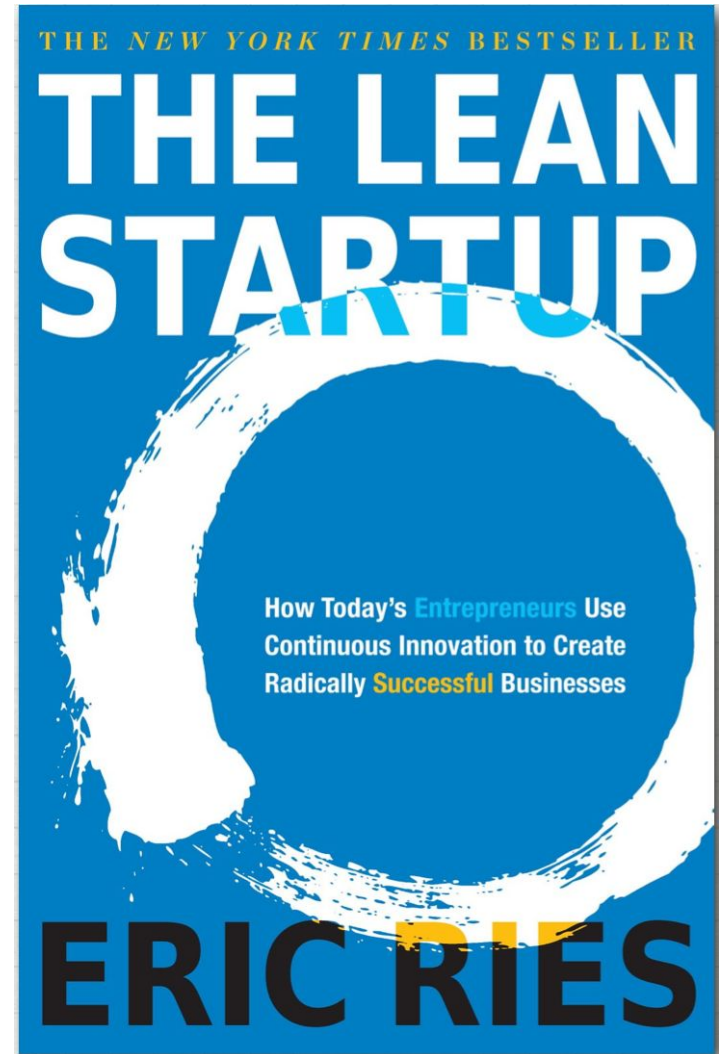
MODERN AGILE: HYPOTHESIS TESTING

Product ideas we have
are hypothesis, and must
be tested

Take decisions based on
data: analytics is
essential

We need to move fast:
build, launch and observe

Pivot when necessary



Agile is learning:

Take a small step.

Reflect upon it.

Take another step.