Software Development and UI Design

Dr. Marta Kristín Lárusdóttir
Associate professor at Reykjavik University
Requirements Analysis and Design
17. August 2018

Content

- What is software and why are we making it?
- Phases of software development
- User

What is Software?

- **Application software** is intended to perform certain tasks.

- Examples of application software include

  – office suites, gaming applications, database systems and educational software.

- Application software can be a single program or a collection of small programs.

  – This type of software is what consumers most typically think of as "software."

https://www.techopedia.com/definition/4356/software

www.ru.is

Why Are We Making Software?

www.ru.is

Analysed in the course

- To make the work of the user easier
- Save time and money for the user
- It is fun to make software
- To make the software handle hard calculations
- To earn money
- To connect to people all over the world
- Improve users' needs
- To solve issues that people can not solve
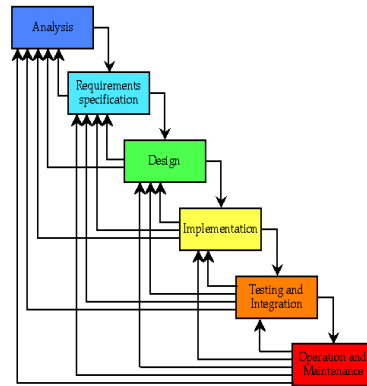- Bridge the gap between users and computers

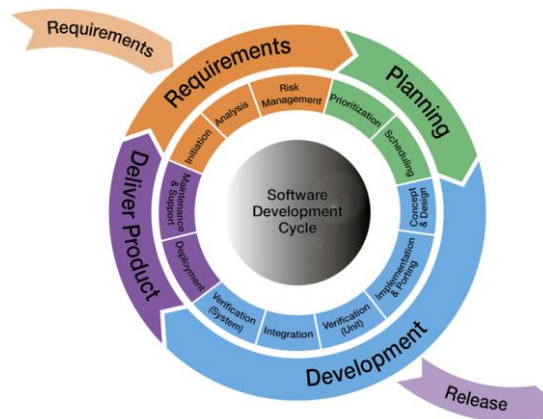www.ru.is

Phases when Making Software

www.hr.is

Phases when Making Software

- Initiation
  - Project proposal document
- Analysis
  - Requirement analysis report
- Design
  - System Design Documents
  - Test specifications
- Implementation
  - Code
  - Documentation
- Testing
  - Test results, based on test spec
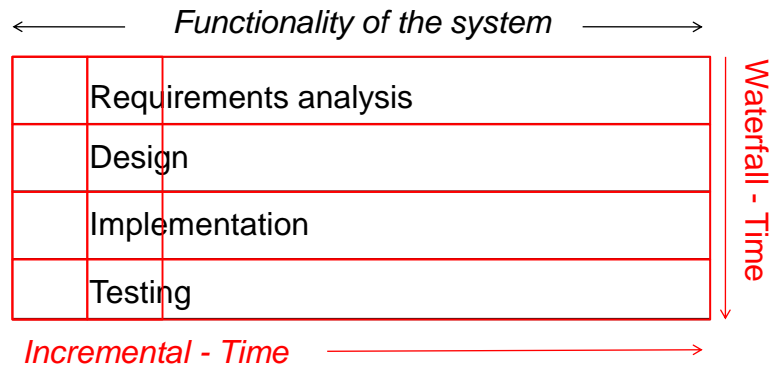

www.ru.is

Iterative & Incremental Software Development

www.ru.is

The Flow in Software Development

Functionality of the system

	Requirements analysis
	Design
	Implementation
	Testing

Waterfall - Time

Incremental - Time

These Steps Need to be Taken

- Either all requirements analysed at the same time
  - Then you would do all the design, and so on !!
  - Waterfall process
- Or
  - Requirement analysis, design, implementation and testing in a 2 week period

- Either way
  - All these need to be done
  - It is just a matter of in which order

Focus of the course

- This course focuses on the analysis and design and some parts of testing
  - What it involves and methods which can be used
- We leave out
  - Project management
  - Big part of initiation
  - Code development by programming languages (implementation)
  - The above will be learnt in other courses
- We start with user analysis and requirement capture
  - Usually takes place after problem analysis phase but sometimes blend into each other

www.ru.is

Including the Users Perspective in Software Development

www.hr.is

Analysis

Methods with Users Participation

Interviews

Meetings

Field study

Workshops

www.ru.is

Requirements
specification

Methods to Specify User Requirements

Personas

Mr. and Mrs. Macomb are retired schoolteachers who are now in their 70's. Their Social Security checks are an important part of their income. They've just sold their big house and moved to a small apartment. They know that one of the many chores they need to do now is to tell the Social Security Administration that they have moved. They don't know where the nearest Social Security office is and it's getting harder for them to do a lot of walking or driving, so they would like to do this on the computer if it is easy and safe enough. However, they are somewhat nervous about doing a task like this by computer. They never used computers in their jobs; but their son, Steve, gave them a computer last year, set it up for them, and showed them how to use email and how to go to Web sites. They have never been to the Social Security Administration's Web site, so they don't know how it is organized. Also, they are reluctant to give out personal information on Web sites, so they want to know how safe it is to tell the agency about their new address this way.

Scenarios

User Stories

1. 90% of students can find information about how to apply for funding (effectiveness)

2. It takes each student less than 2 minutes to apply for funding (efficiency)

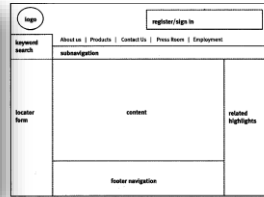3. Students grade their overall satisfaction above 4 on average on a 1- 5 scale (Satisfaction)

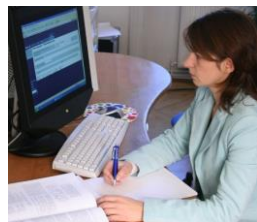Usability Goals

www.ru.is

Design — Methods for Designing the UI

- Based on user analysis and requirements
- Various stages of user interface design
  - Paper prototypes, wireframes, intermediate and detailed design

www.ru.is

Testing and Integration — Methods for Evaluating with Users

Expert evaluation

Remote testing

Formal evaluation

Informal evaluation

www.ru.is

Survey: Usage of These Methods

Yuan Jia   Marta Kristín Lárusdóttir   Åsa Cajander
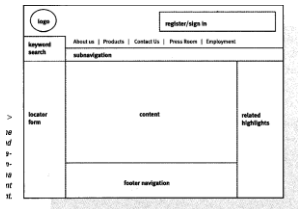
www.ru.is

Most Frequently Used Methods

Interviews

Meetings

Low-fi prototyping
/wireframes

Workshops

www.ru.is

The Highest Rated Methods

Informal evaluation

Workshops

Formal evaluation

Highest rated

Rarely used??

www.ru.is