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http://www.engr.uvic.ca/~seng321/
https://courses1.csc.uvic.ca/courses/201/spring/seng/321

Announcements

- S2 & C2
  - Posted
  - S2 number of pages
  - Prototype sophistication
- Fri, March 4
  - S2a due
- Tue, March 8
  - S2b due
  - Presentations in labs
  - Attendance required
- Thu, March 10
  - C2 due
  - Feedback on S2a & S2b

- Midterm
  - Wed, March 2
  - Tomorrow

- Final Exam
  - Sat, April 16
  - 19:00-22:00
  - ECS 125

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Midterm

Format

- Wed, March 2
- In class
- Closed books, closed notes, no gadgets, no phones

- All the slides including lab slides

Topics

- Software life cycle models
- Software quality attributes
- Functional vs. non-functional requirements
- Prioritizing requirements
- Cost and value
- What vs. how
- Project & stakeholder types
- Customers, developer and links
- Fishbone diagrams
- Elicitation techniques — pros and cons
- Latent and tacit knowledge
- UML — 14 diagram types
- Structure charts

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SENG 321 Calendar

Quiz 1	Wed, Feb 24	In class	2% of course
Midterm (revised)	Wed, Mar 2	In class	14% of project
Deliverable S2a (revised)	Fri, Mar 4	S2a Detailed req spec; conceptual design	10% of project
Deliverable S2b (revised)	Tue, Mar 8	S2b Class presentation of S2a to customer	5% of project
Deliverable C2 (revised)	Thu, Mar 10	C2 feedback on S2a&S2b	5% of project
Deliverable S3a	Tue, Mar 15	S3a Technical Design Spec	15% of project
Deliverable S3b	Tue, Mar 22	S3b Manual	10% of project
Deliverable C3	Thu, Mar 24	C3 feedback on S3a&S3b	10% of project
Easter break	Mar 25-28	Fri, no class	
Deliverable S4	Mar 29-31	S4 project demo	10% of project
Deliverable C4	Mar 29-31	C4 feedback on S4	5% of project
Last Day of Classes	Fri, Mar 31		
Final Exam	Sat, Apr 16	19:00-22:00 ECS 125	35%

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www.ecosummer.com/west-coast-trail/what-to-bring

What to Pack:

- 75 – 80 L backpack
- Warm sleeping bag and thin liner (ideally silk or other breathable fabric – optional)
- Water resistant and windproof jacket (with hood) and pants
- Fleece jacket and pants
- Shirt with long sleeves / T-shirt
- Hiking pants / shorts
- Poly-propylene underwear
- 2 - 3 pairs of hiking socks
- Toque and thin, light gloves
- Hiking boots (plus spare laces) – well worn in!
- Gaiters
- Sandals for river crossings and around camp
- Bathing suit and towel
- Plastic bags to waterproof clothing in pack
- Sun protection (glasses, hat or ball cap and sunscreen)
- Insect repellent
- 15 ft. of clothesline
- Small personal first aid kit including blister treatment
- Headlamp (with spare battery and bulb)
- Pocketknife or multi-tool
- Personal water bottle and water purifying tablets (optional)
- Trekking poles (optional)
- Toiletries* and personal medication
- Camera, extra SD card and spare battery

A Note About Personal Grooming Supplies

Let's face it, you'll be spending your days hiking the West Coast Trail – this is no place for cosmetics and beauty supplies. But we know there are some things you just won't be able to do without…here's what you should know:

There are no sanitary facilities other than outhouses on the trail. No showers, no bathtubs – only fresh and saltwater pools where using soap and shampoo (even biodegradable products) is not appropriate. Please pack wet disinfecting and cleaning wipes that can be burned as garbage while you're on the trail.

Of course you can bring toothbrushes and toothpaste, brushes and combs, contact lens kit and saline solution, nail scissors, disposable razors and such items on the trail.

www.parryloeffler.com/wct/packing.htm

Elicitation Techniques

1. Reuse old requirements or existing system
2. Questionnaire
3. Interviews
4. Observation and apprenticeship
5. Ethnographic studies
6. Brainstorming
7. JAD: Joint Application Design

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JAD: Joint Application Design Structured Brainstorming

- IBM Joint Application Development (JAD)
  - Developed at IBM in the 1970s; many success stories
- Structured brainstorming IBM-style
  - Full of structure, defined roles, forms to be filled out
- Two major steps
  - Three phases each, and six (human) roles to be played
- Four main tenets of JAD
  1. Effective use of group dynamics—facilitated and directed group sessions to get common understanding and universal buy-in
  2. Use of visual aids—to enhance understanding with props, prepared diagrams
  3. Defined process
  4. Standardized forms for documenting results

http://www.umsl.edu/~sauterv/analysis/488_f01_papers/rottman.htm

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JAD: Overview

- Two main steps
  1. *JAD/Plan* — used for elicitation (brainstorming)
  2. *JAD/Design*— used to design software

     Step 2 not discussed in this course
- Three phases in each step
  1. *Customization*
  2. *Session*
  3. *Wrap-up*

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JAD: Six Roles

1. *Session leader* — organizer; facilitator; JAD expert; good people skills; enthusiastic; sets tone of meeting
2. *Analyst* — scribe; produces official JAD documents; experienced developer who understands the big picture; good philosopher/writer/organizer
3. *Executive sponsor* — manager who has the ultimate responsibility for the product being built; provides strategic insights and guidance into company's high-level goals/ practices; later on, makes executive decisions as required

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JAD: Six Roles

4. *User representatives* — selection of knowledgeable end-users and managers; come well-prepared with suggestions and ideas of needs; will brainstorm for new or refined ideas; will eventually review completed JAD documents
5. *Information system representative* — technical information system expert; helps users think big, knows what is easy/ hard/cheap/expensive; mostly there to provide information rather than make decisions
6. *Specialist* — technical expert on particular narrow topic: security, application domain, law, middleware, mobile platforms, web design, enterprise, UI design

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JAD/Plan: Stages

1. *Customization*
   - Good preparation is key; JAD session will *not* be just an informal free-flow of ideas.
   - Executive sponsor picks participants. Likely conducts brief orientation of JAD structure for each.
   - Session leader and executive sponsor familiarize themselves with problem/clients/subject area:
     - Identify likely points of contention, and clarify what is to be within/outside the scope of the JAD session.'
   - Prepare materials for session.

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JAD/Plan: Stages

2. *Session*
   - Session leader welcomes participants, presents task to be discussed, establishes ground rules and context for discussion, makes initial suggestions.
   - Brainstorming
   - At the end of the session, evaluate suggestions and agree upon recommendations/requirements to be passed to JAD/Design team.

3. *Wrap-up*
   - Analysts write up what has been agreed upon using standardized JAD forms. Annotate recommendations with rationale.
   - All participants review the documents. Changes are made as needed. Executive sponsor signs off.

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JAD Plan Deliverable

Application Baseline Document
1. Introduction
2. Executive Summary
   - Project Purpose
   - Business Objectives
   - Scope of Solution
3. Assumptions & Constraints
4. Technology Framework
5. High-Level Business Model
   - Process
   - Data
6. System Interfaces
7. JAD Session Design
   - Scope JAD A, JAD B, etc.
   - Estimates
   - Resources Needed (– Schedule)

Appendix A: JAD Participants/Roles
Appendix B: Current Organizational Charts
Appendix C: Change Management Procedures
Appendix D: Etc.

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JAD Design Deliverables

Requirements & Design Document
1. Introduction
2. Executive Summary
3. Application Definition - Detailed Models
   - Process
   - Data
4. Input & Output Design
   - Screens
   - Reports
   - Message Text
5. Interface Designs
6. Technology Specifications
   - Hardware/Software/Communications
   - Performance
   - Security
   - Back-Up & Recovery

Appendix A: Data Dictionary
Appendix B: Etc.

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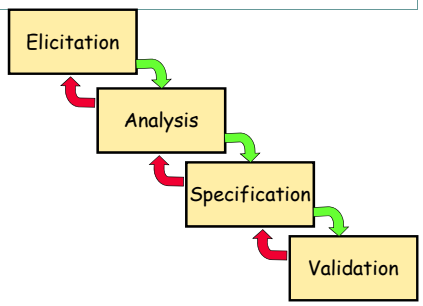
Requirement Engineering Process



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Validation vs. Verification

- Validation — Evaluate software requirements specification wrt. customer requirements:
  - Are we building the right system?
  - Is the specification what the customer wants?
- Verification — Evaluate software artifact wrt. existing artifacts:
  - Are we building the system right?
  - For example, does the design implement the spec?

Thus, validation is concerned with checking that the system will meet the customer's actual needs, while verification is concerned with whether the system is well-engineered, error-free, and so on. Verification will help to determine whether the software is of high quality, but it will not ensure that the system is useful.

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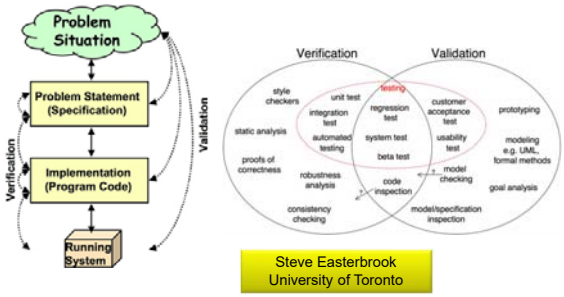
Validation vs. Verification



Steve Easterbrook
University of Toronto

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www.easterbrook.ca/steve/2010/11/the-difference-between-verification-and-validation/

Validation Criteria

- Validation criteria include:
  - Correctness
  - (Un)ambiguity
  - Completeness
  - Consistency
- We are checking:
  - Whether the software requirements specification captures stakeholders' requirements
  - User satisfaction that the system as specified will meet their needs, is usable and useful

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