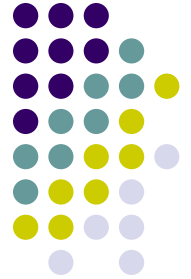




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<http://www.engr.uvic.ca/~seng321/>
<https://courses1.csc.uvic.ca/courses/201/spring/seng/321>

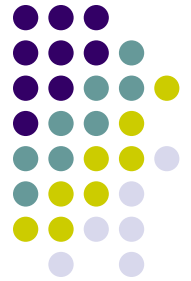


Announcements

- 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



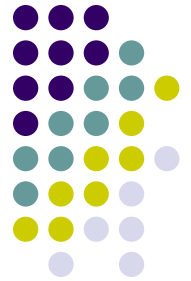
Midterm

Topics

Format

- Wed, March 2
- In class
- Closed books, closed notes, no gadgets, no phones
- All the slides including lab slides

- 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



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%

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.

Hard Goods

85 Litre Backpack
Tensor bandage
Sewing kit
Travel toothbrush
Carry pouch for personal care items
Ibuprofen (half a bottle)
Tylenol (half a bottle)
Anti-diarrhea tablets (a few)
Medical tape (10 feet)
Selection of Band-Aids
Fire starting tablets (6)
Sample size Polysporin
Soap container (to contain first aid items)
T-shirts (2)
Underwear (3)
Longjohns
Long sleeve T-shirt
Nylon shorts
Toque
Ball cap
Wicking liner socks
Wool outer socks
Wicking outer socks
Cotton sleep socks
Fleece jacket
Fleece pants
Rain poncho
Plastic rain suit (jacket and pants)
Thin cotton gloves
Rubber gloves for ladders
Gaiters
Backpacking boots

Food

7 packs Crystal light (21 litres)
700 grams cappeletti pasta (2 shared dinners serving 6)
7 servings Carnation instant breakfast
7 portions powdered milk for above
2 servings instant rice
6 pouches instant oatmeal
3 portions cream of wheat w/ powdered milk and brown sugar
2 packs pasta sauce
2 ichiban soup
6 peppermint tea
6 berry tea
6 large tray size dehydrated fruit rolls
4 portions hot chocolate
400 grams beef jerky
250 grams dried apples
Thai beef boil bag
Teriyaki chicken boil bag
Small container peanut butter
6 bagels
400 gram cheese



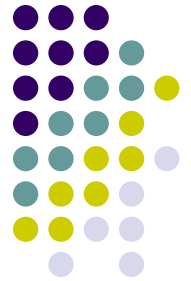
And the short list below is the excess food I had left at the end of the trip...

3 carnation instant breakfast
3 portions powdered milk (for above)
3 peppermint tea
3 berry tea
5 large tray size dehydrated dried fruit rolls
2 portions hot chocolate
150 grams beef jerky
2 ichiban soup
5 packs crystal light (15 litres)
Some peanut butter
Some rice

More Hard Goods!

Personal alarm (it's my bear scare ; >)
Headlamp
Swiss army knife
Spare batteries for camera
Spare batteries for headlamp
Sleeping bag
Thermarest
Pack cover
Insulated mug
Trail guide book (Blisters and Bliss)
Trail map (official)
Tide tables (laminated)
Novel
Pencil and paper
Fork, knife, spoon
Nylon rope (20 feet)
Stove fuel bottle, full (1 litre)
Bottle of SPF 20 sunscreen
Bottle of bug gel
Odorless deodorant
Bottle of Campsuds
BIC lighter
Match container with wooden matches
Iodine tablets (50)
Neutralizer tablets (50)
Duct tape wrapped around fuel bottle (10 feet)
Dental floss wrapped around toothbrush handle (10 feet)
Naglone water bottles (2 at 1 litre each)
Platypus with hose (2 litre)
Large plastic garbage bags (6)
Film (4 rolls, 36 exposure)
Camera

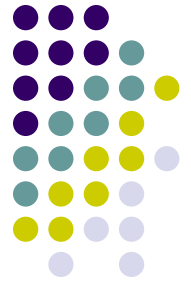




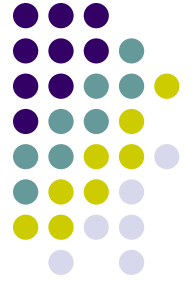
Elicitation Techniques

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**

JAD: Joint Application Design Structured Brainstorming



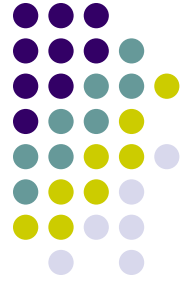
- IBM Joint Application Development (JAD)
 - Developed at IBM in the 1970s; many success stories
- Structured brainstorming IBM-style
 - Full of structure, defined roles, forms to be filled out
- Two major steps
 - Three phases each, and six (human) roles to be played
- Four main tenets of JAD
 1. Effective 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



JAD: Overview

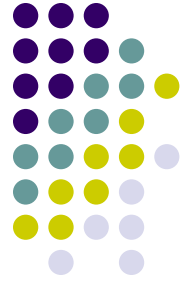
- Two main steps
 1. *JAD/Plan* — used for elicitation (brainstorming)
 2. *JAD/Design*— used to design software
Step 2 not discussed in this course

- Three phases in each step
 1. *Customization*
 2. *Session*
 3. *Wrap-up*



JAD: Six Roles

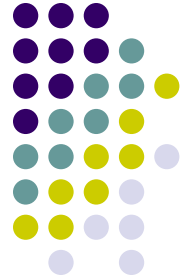
1. *Session leader* — organizer; facilitator; JAD expert; good people skills; enthusiastic; sets tone of meeting
2. *Analyst* — scribe; produces official JAD documents; experienced developer who understands the big picture; good philosopher/writer/organizer
3. *Executive sponsor* — manager who has the 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



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

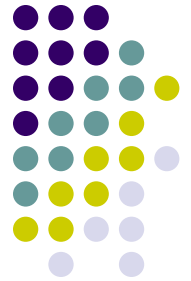
JAD/Plan: Stages



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.

JAD/Plan: Stages



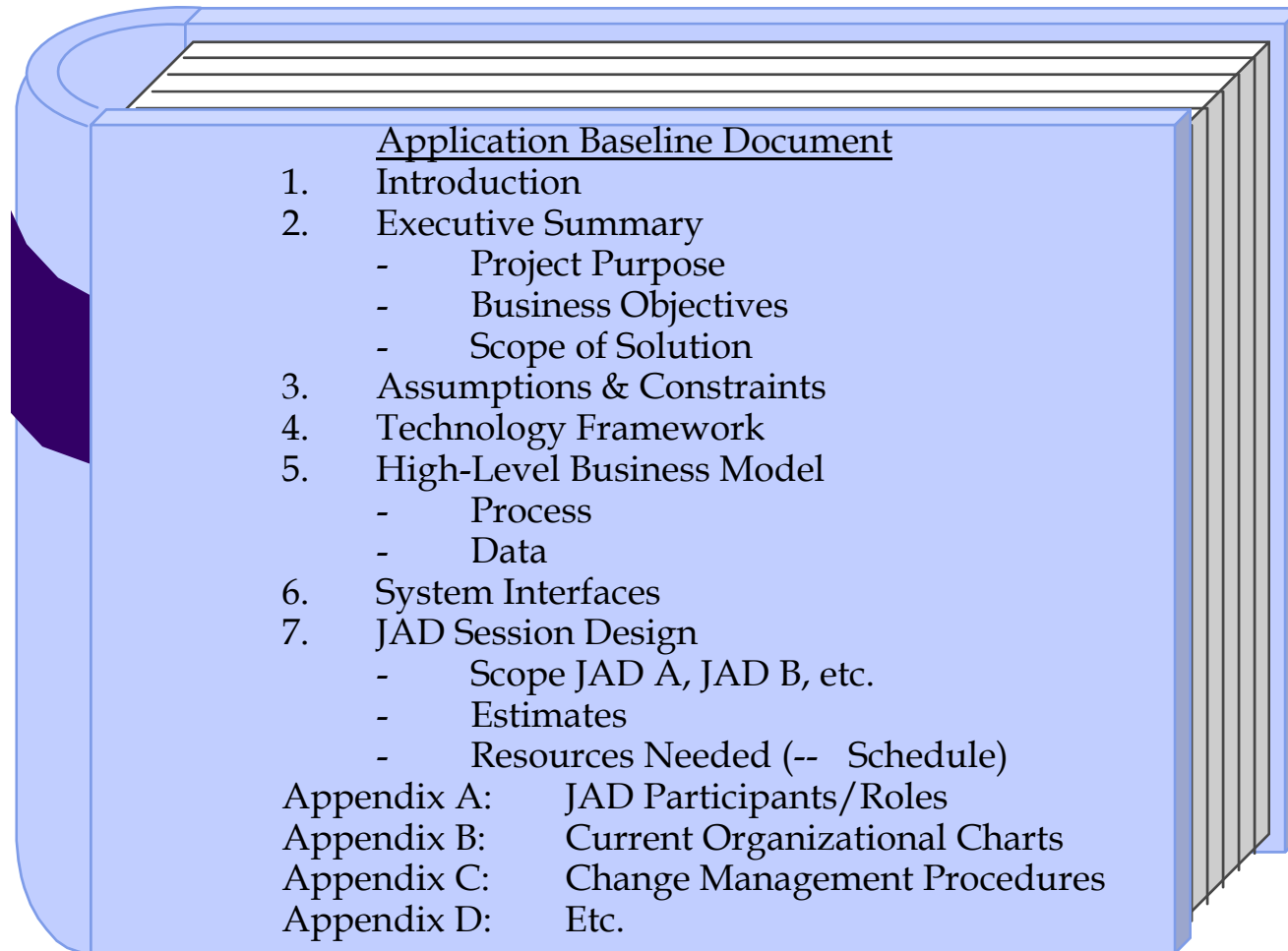
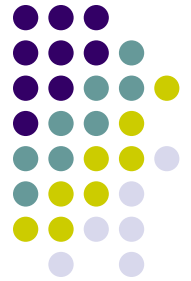
2. *Session*

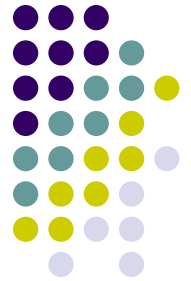
- Session leader welcomes participants, presents task to be discussed, establishes ground rules and context for discussion, makes initial suggestions.
- Brainstorming
- At the end of the session, evaluate suggestions and agree upon recommendations/requirements to be passed to JAD/Design team.

3. *Wrap-up*

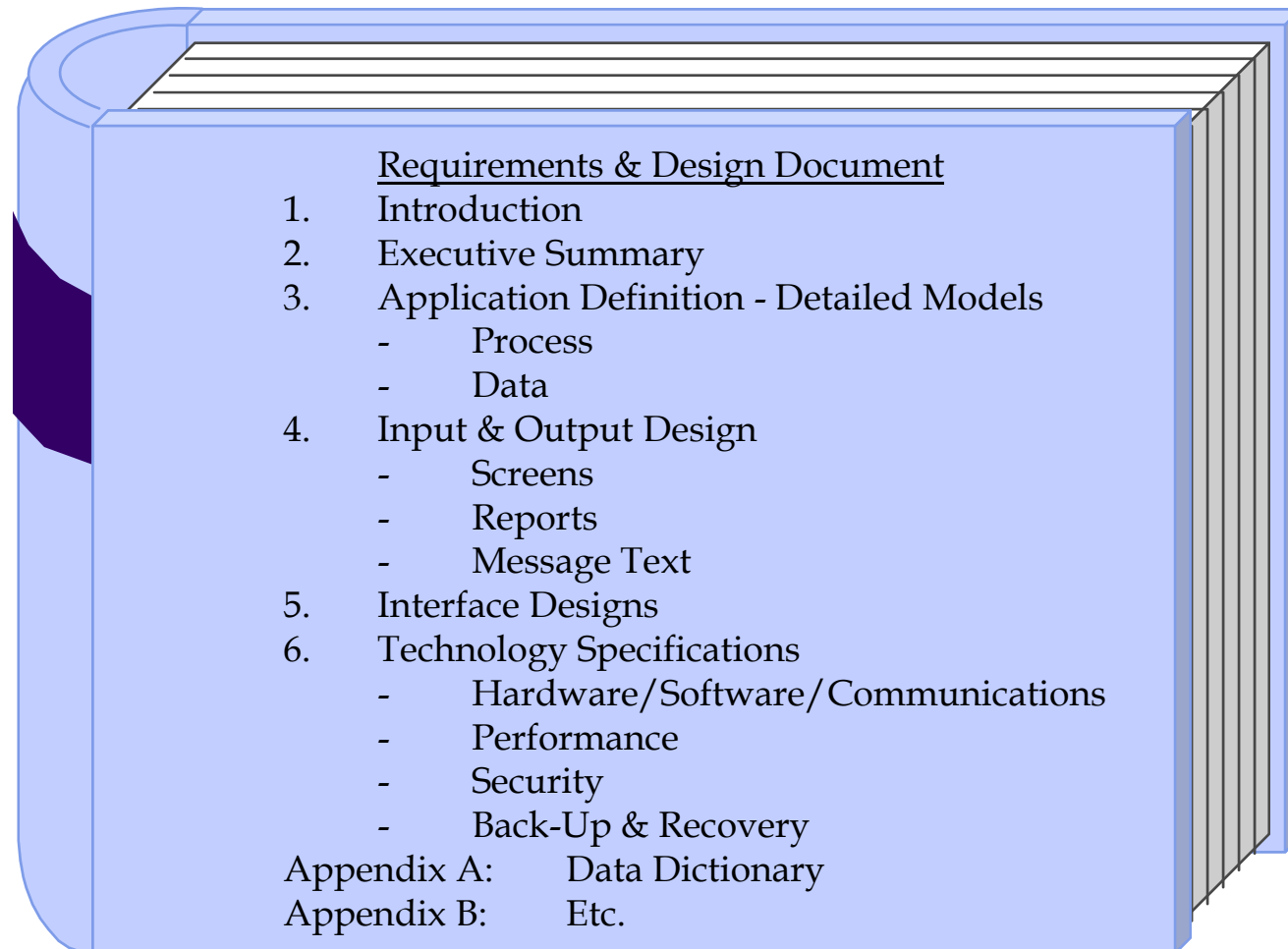
- Analysts write up what has been agreed upon using standardized JAD forms. Annotate recommendations with rationale.
- All participants review the documents. Changes are made as needed. Executive sponsor signs off.

JAD Plan Deliverable

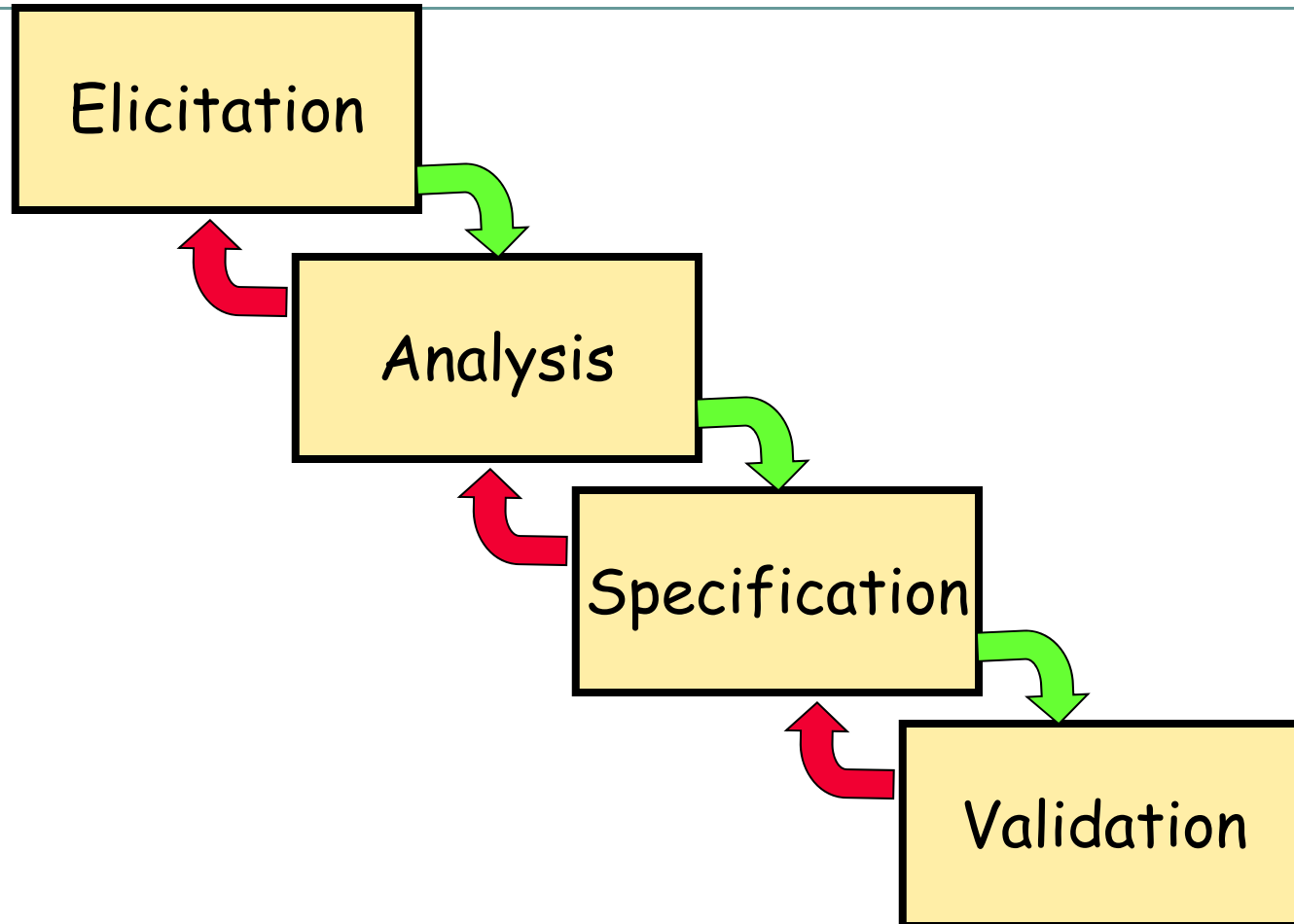
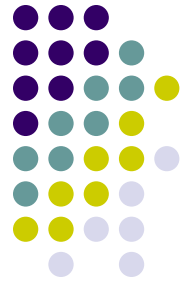




JAD Design Deliverables



Requirement Engineering Process



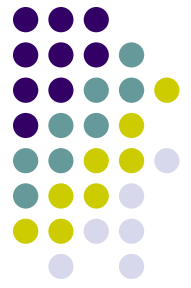


Validation vs. Verification

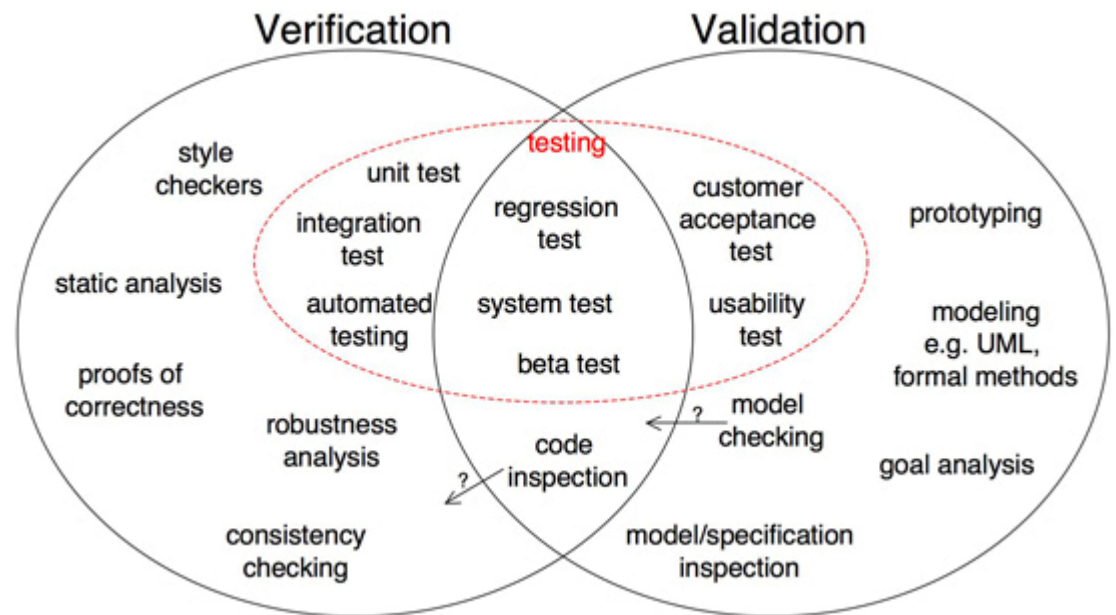
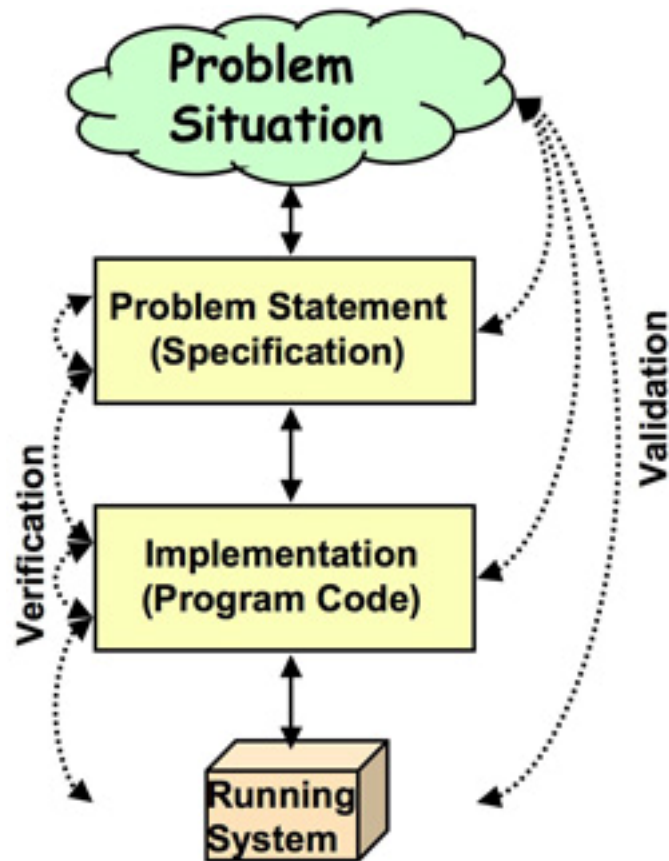
- **Validation** — Evaluate software requirements specification wrt. customer requirements:
 - Are we building the right system?
 - Is the specification what the customer wants?
- **Verification** — Evaluate software artifact wrt. existing artifacts:
 - Are we building the system right?
 - For example,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



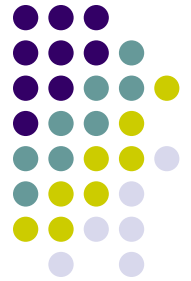
Thus, validation is concerned with checking that the system will meet the customer's actual needs, while verification is concerned with whether the system is well-engineered, error-free, and so on. Verification will help to determine whether the software is of high quality, but it will not ensure that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



Validation vs. Verification



Steve Easterbrook
University of Toronto



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