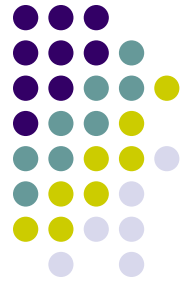




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Faculty of Engineering
University of Victoria

[www.engr.uvic.ca/~seng321/
courses1.csc.uvic.ca/courses/201/spring/seng/321](http://www.engr.uvic.ca/~seng321/courses1.csc.uvic.ca/courses/201/spring/seng/321)

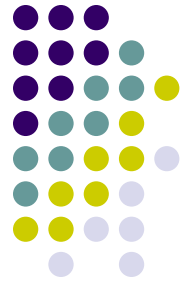
Announcements



- S2 & C2
 - Posted
 - S2 number of pages
 - Prototype sophistication
- Friday, Feb 26
 - Midterm spec will be discussed

- **Midterm**
 - **Wed, March 2**

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



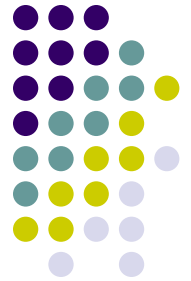
Midterm

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%



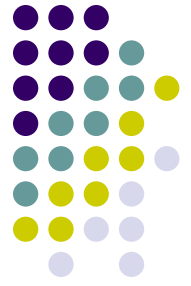
Elicitation Techniques

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
8. Nominal group technique
9. Delphi technique
10. PIECES Approach

Midterm



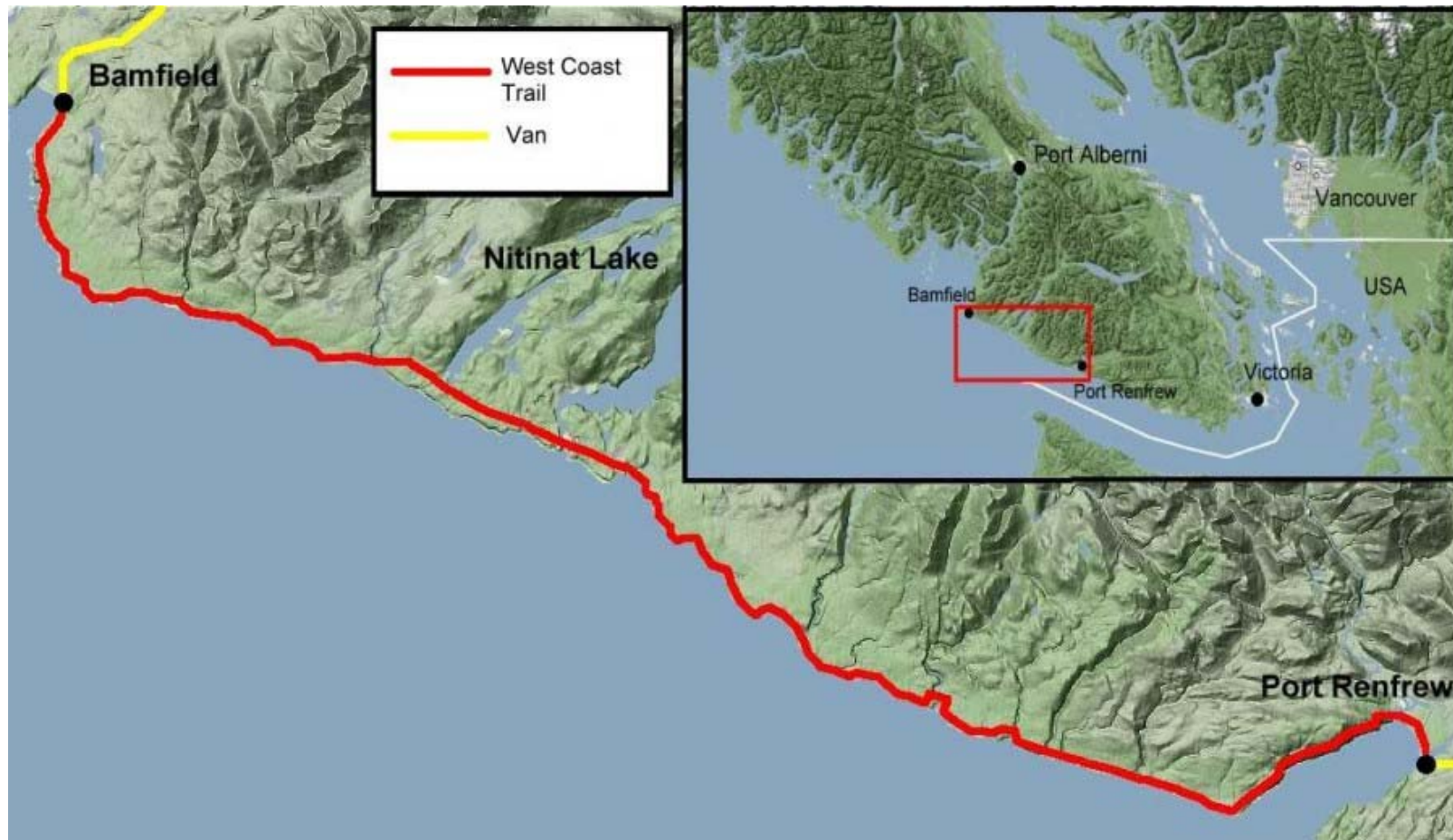
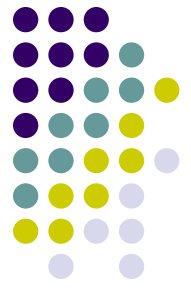
- Brainstorming



Brainstorming

- Brainstorming consists of two phases:
 1. **The Storm:** Generate ideas
 2. **The Calm:** Prune the ideas to get a final list
- All stakeholders can participate in brainstorming sessions to generate unconventional ideas
- The sessions are held early on at the start of project *when there are many uncertainties and unknowns*

Westcoast Trail





Brainstorming Roles

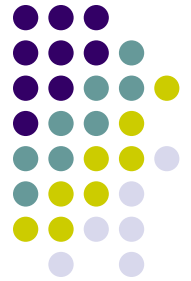
- Assign two separate people the special role of:
 1. **Scribe**
 - writes down all ideas
 - can also contribute and ask clarifying questions during first phase, but not critical questions
 2. **Moderator / Leader** can be:
 - a) *Traffic cop* enforces “rules of order”, but doesn’t throw his/her weight around otherwise.
 - b) *Agent provocateur* assumes more of a leadership role, comes prepared with wild ideas and throws them out as discussion wanes. Looks for variations and combinations of other suggestions.

Pack it in & Pack it out



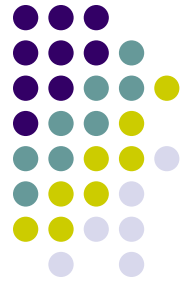
Brainstorming

Phase I: The Storm



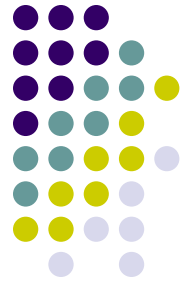
- Goal: generate as many ideas as possible
 - Quantity vs. Quality
- To encourage participation:
 - *No criticism or debate is permitted*
 - No names attached to ideas
 - Nothing said will be held against participants later on
 - Original idea list isn't circulated outside of the meeting
- Scribe writes down all ideas where all can see
 - Whiteboard, paper taped to wall
- *Wild ideas are encouraged*
 - Participants should NOT self-censor or spend too much time wondering if an idea is practical. Just shout it out

Water and bridges



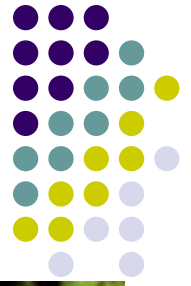
Brainstorming

Phase II: The Calm



- Goal:
 - Review, consolidate, combine, clarify and expand ideas
 - Prioritize and Prune ideas
- Explain ideas more carefully and categorize them into “maybe” and “no” using some pre-agreed consensus method
- Make sure meeting is at most 90-120 minutes (longer meetings tend to lose focus)

Mudd

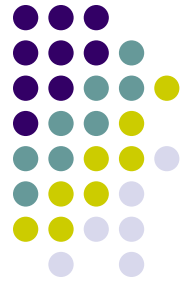


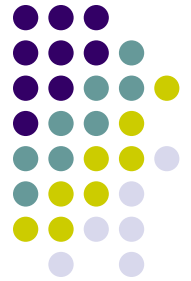


Pruning Ideas

- There are several choices to prune:
 - Vote with threshold or campaign speeches
 - Blend ideas
- To keep things friendly, It is desirable to decide on the pruning process beforehand.

Ladders

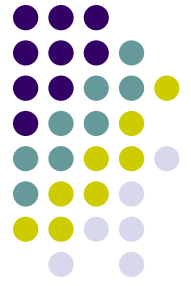




Voting and Blending Techniques

- **Vote with threshold**
 - Each person has n votes
 - Keep ideas with more than m votes
 - Have multiple rounds with smaller n and m
- **Vote with campaign speeches**
 - Each person has $j < n$ votes
 - Keep ideas with at least one vote
 - Have someone who did not vote for an idea defend it for the next round
 - Have multiple rounds with smaller j
- **Blend Ideas**
 - Combine and remove too crazy ideas (not part of 1st phase)

Water

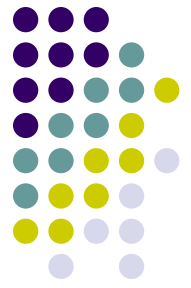




Common Brainstorming Mistakes

- Look out for:
 - Haggling over details
 - Hurt feelings
 - Time limits
 - Quiet vs. talkative participants
- *Participants censoring themselves for fear of being criticized (especially in highly competitive environments or inexperienced participants)*
- Organization culture (military) may discourage free thinking

Tides



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.

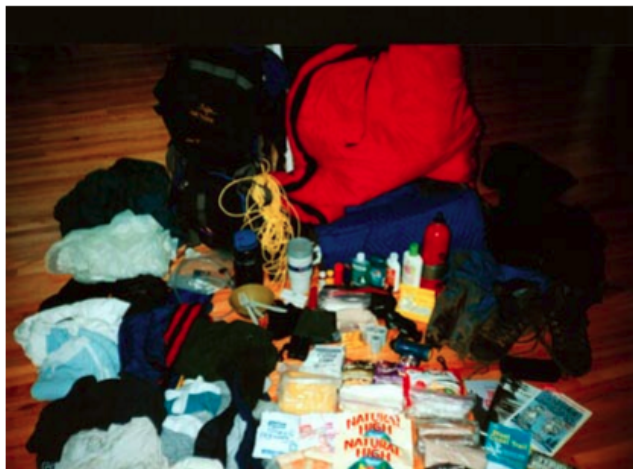
Of course you can bring toothbrushes and toothpaste, brushes and combs, contact lens kit and saline solution, nail scissors, disposable razors and such items on the trail.

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...

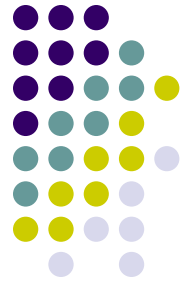
3 carnation instant breakfast
3 portions powdered milk (for above)
3 peppermint tea
3 berry tea
5 large tray size dehydrated dried fruit rolls
2 portions hot chocolate
150 grams beef jerky
2 ichiban soup
5 packs crystal light (15 litres)
Some peanut butter
Some rice

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)
Naglene water bottles (2 at 1 litre each)
Platypus with hose (2 litre)
Large plastic garbage bags (6)
Film (4 rolls, 36 exposure)
Camera

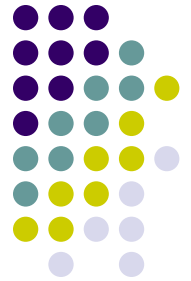
Spitwads

Brainstorming Process



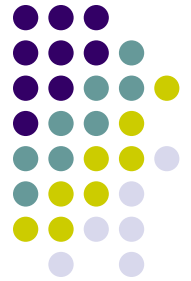
- Ask question: **How is success measured?**
- Write down answer silently
- Toss spitwads into a basket
- Redistribute, read, and record spitwads
- Reach common understanding
- Eliminate duplicates
- Prioritize by voting
- Discuss highest priority selections





Elicitation Techniques

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