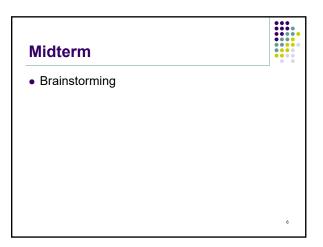




# Elicitation Techniques 1. Reuse old requirements or existing system 2. Questionnaire 3. Interviews 4. Observation and apprenticeship 5. Ethnographic studies 6. Brainstorming 7. JAD: Joint Application Design 8. Nominal group technique 9. Delphi technique 10. PIECES Approach



### **Brainstorming**

- Brainstorming consists of two phases:
  - 1. The Storm: Generate ideas
  - 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:
  - - 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
- · 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)

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### **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.

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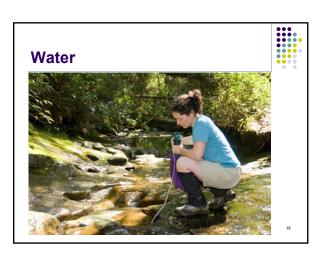


### **Voting and Blending Techniques**



- 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</li>
  - 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 1<sup>st</sup> phase)

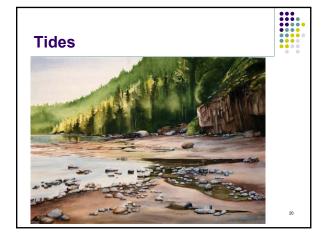
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### **Common Brainstorming Mistakes**

- · 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

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# **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**



- 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

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### **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