

# Group Project

## Phase 1

# Tasks

- Establish requirements
- Competitive assessment
- Low-fidelity prototyping
- Cognitive walkthrough

# Establish requirements

- Get to know users, their tasks, use context
- Identify users
- What are they trying to accomplish?
- In what context are they likely to use your technology?

# Establish requirements

- Identify users or stakeholders
  - Find actual users or stakeholders
  - If not possible, find people who know how how actual users would use the technology
  - If not possible
    - use questionnaires, chat to reach actual users
    - Or, study information on users from valid documents and use it to “play” actual users
  - Two “users” per group member

# Establish requirements

- Observe users conduct 3-4 typical tasks
  - Concentrate on most important ones
- Ask them to give you running commentary of what is going through their head (thinking aloud)
- If you cannot observe user, then ask user to tell you a few stories about how they go about conducting typical tasks
- If they currently cannot conduct tasks, ask what they need, what they are interested in

# Establish requirements

- For each task, clarify the following
  - User’s goals (what are they trying to do?)
  - Environmental requirements
    - Physical (light, noise, weather)
    - Social (privacy, collaboration, coordination)
    - Organizational (user support, training)
  - Expected outcome

## Establish requirements

- Ask about other tasks that the users do
- Descriptions of these additional tasks need not be detailed
- For all tasks identify:
  - Frequency
  - Importance
  - Usability goals (e.g. how quickly it needs to be completed)
  - User experience goals (i.e. how should it feel?)



## Establish requirements

- Take notes on user characteristics for user profile document
- Abilities
- Skills
- Expertise
- Emotional state



## Establish requirements

- Develop list of requirements from observed tasks
- What users should be able to accomplish with technology, not how they should do it
- Specific, unambiguous, clear
- Include frequency and importance information
- Include usability and user experience goals
  - e.g. should be able to rank candidates by the number of donors in 20 seconds



## Establish requirements

- Prepare requirements document
  - Small number of high-level requirements
  - Provide additional levels of detail
- Develop user profiles
  - Could be one if all users are alike
  - Most likely you will have more than one type of user



## Establish requirements

- Validate requirements
- Get one “user” per group member to review your requirements
  - Are there missing requirements?
  - Are the details accurate?
  - Are the assigned frequency and importance accurate?
  - Are the usability and user experience goals appropriate?
  - Are the user profiles accurate and complete?



## Establish requirements

- Modify requirements document according to input from validation
- Prioritize requirements (based on frequency and importance)
  - Must include
  - Should include
  - Could include
- Prioritize users
  - Must support
  - Should support
  - Could support



## Competitive assessment

- Identify competing technologies
  - Need not be computer technologies
- If many competing, select the most prestigious/market leaders (one per group member)
- If improving an existing technology, include the technology you are improving



## Competitive assessment

- Evaluate technologies against your set of requirements
- For each requirement
  - Do they meet or exceed it?
  - What are the characteristics that enable them to meet the requirement?
  - What are the characteristics that prevent them from meeting the requirement?
  - Are they appropriately designed for the users you profiled?



## Low-fidelity prototype

- Sketch several competing user interfaces (one per group member)
- Use pens and paper
- Develop conceptual model for system
- Take into account technology constraints
- Discuss and decide on most promising ideas
- Check how they work against requirements and user profiles



## Low-fidelity prototype

- Not a competition
- Just need to get ideas from different sources
- Develop Low-fidelity prototype from best ideas
  - May just develop most promising sketch
    - Incorporate good ideas from other sketches
  - Or, build a hybrid



## Low-fidelity prototype

- Sketch all high-level screens for user interface
- Sketch some lower-level screens to show how users would complete tasks
- Do not concentrate on details or good looks
- Should be easy to comprehend
- Make clear how actions and system state are visible



## Cognitive walkthrough

- You will conduct a cognitive walkthrough technique described in section 15.3.1 of the Preece, Rogers & Sharp's *Interaction Design*
- Conduct walkthrough with actual users or, if not possible, user representatives
- You have to conduct three cognitive walkthroughs (each with a different "user")



## Cognitive walkthrough

- Identify four key tasks from your user interviews/observations
- Bring your low-fidelity prototype
- Low-fidelity prototype should sketch how user interface would behave for the selected tasks
- Assign users one task at a time to complete using your prototype



## Cognitive walkthrough

- For each step in a task
  - Ask: what would you do next?
  - Ask: can you find the action you are looking for in the prototype?
  - Show them how the system would react after they select an action (e.g. show a sketch of the screen that would be activated)
  - Ask: how would you interpret the system's response?



## Cognitive walkthrough

- Before starting, tell users that you are not testing them, but that they are helping you improve your prototype
- Do not be defensive about your design
- Document successfully completed tasks
- Document in more detail any issues found by the users (e.g. don't know what to do, can't find what they want)



## Cognitive walkthrough

- Classify any issues by severity and frequency
- Revise low-fidelity prototype based on issues found during cognitive walkthrough



## Deliverables

- Section 1- Establishing requirements (about 10 pages)
  - Introduction
    - Background information on the system you are designing
    - Expected users, use context
    - What will the system be used for?



## Deliverables

- Section 1- Establishing requirements (about 10 pages)
  - Method
    - Who did you interview/observe (no real names please)
    - How did you interview/observe them
    - Briefly describe output from sessions
    - Describe process of using output to develop requirements
    - Describe how you validated the requirements



## Deliverables

- Section 1- Establishing requirements (about 10 pages)
  - Requirements
    - Sorted by priority (must, should, could)
    - Organized hierarchically
      - High level requirements broken up into more specific requirements



## Deliverables

- Section 1- Establishing requirements (about 10 pages)
  - User profiles
    - Describe the typical users of your technology
    - Sorted by priority
    - For each different type of typical user, describe
      - General characteristics (e.g. age, gender, background)
      - Skills, abilities, expertise
      - Relevant requirements
      - Use context
      - Frequency of use
      - Other relevant information (e.g. emotional state)



## Deliverables

- Section 2- Competitive assessment (about 5 pages)
  - Selection of competitive technologies
  - Subsections for each assessed technology
  - For each requirement
    - Is it met or exceeded? Why?
    - For each user profile for which the requirement is relevant
      - Is that type of user appropriately supported given their characteristics



## Deliverables

- Section 2- Competitive assessment (about 5 pages)
  - Summary
    - Do competitive technologies meet requirements?
    - If applicable, how does the technology you are improving compare
      - What are the main areas to improve
    - What can give you a competitive edge?



## Deliverables

- Section 3- Low-fidelity prototype (about 5 pages plus pictures)
  - Method
    - Describe the process of developing your prototype
      - Competing sketches
      - Design of low-fidelity prototype
      - Cognitive walkthrough
  - Describe competing sketches (show pictures of them)



## Deliverables

- Section 3- Low-fidelity prototype (about 5 pages plus pictures)
  - Describe low-fidelity prototype (show pictures)
  - Describe outcome of cognitive walkthrough
  - Describe any changes you made based on the results of the cognitive walkthrough (show pictures)



## Deliverables

- Who did what? (one page)
- Tell me the role each group member played during this phase



## Format

- Use a 1" or smaller 3-ring binder
- Use titled section separators
- Cover should include group name, group member names and title of project
- First page should be a table of contents
- Make it neat, well-organized and visually appealing



## Grading

- Completeness
- Quality of writing
- Quality of designs
- Depth of discussions
  
- Each group member will get an individual grade through ICON
- Different group members may get different grades



## Due dates

- Due October 11, at the beginning of class
- Each group should send me one email with group members' availability to meet during the week of 9/24
  - We will meet to see what progress you are making
  - Clarify issues, answer questions
  - May not be able to meet with all group members

