Cognitive Design Studio
Quarter Half Over

Tension: Encourage you to take ownership of your project and helping to keep you moving in positive directions.

Extremely fortunate to have great TAs and IAs.

Upcoming

- Exam II: Thursday May 12th Chapters 7-14 and Lectures

- This week: Discussion of contextual interviews (and often the need for a second round), example projects, and general project advice. Focus on key challenges.

- By Wednesday (May 4 5PM) specific project related questions to 102C@hci.ucsd.edu. Will discuss on Thursday.

- Tuesday May 10: Informal class meeting. Opportunity for TA/IA Advice for Project Groups
General Advice

Everyone in your group needs to focus on how to keep your project moving forward

- Don’t let lack of progress on any one issue stop other progress
- Don’t use something as an excuse to not do other things
- Don’t get caught up in what you might have done
- Focus on making the project successful
- Be wise and efficient in use of your time (especially in group meetings)
- Be realistic
- Be pragmatic

Remember that a sizeable portion of your grade in the course is determined by your participation. Attending and contributing to group meetings and activities is crucial.

- 25% - Participation: as documented in your personal wiki pages, the judgment of TA's/IA's, and summary participation judgments (from you and other group members).
Group Wiki Page

By Sunday evening April 17 create a project wiki page, move it under this page, and enter the name in the table below and link it to your page. On your page you should add the following information:

- **Group Name**
- **List of Members (with each person's name linked to their personal wiki page)**
- **Set in stone weekly meeting time (During the Day) and location (On Campus)**
- **Section time is ideal since everyone should be available**
- **Additional weekly meeting times and location**
- **Brief descriptions of the questions that motivate your project and your design goals**
- **Describe the specific community you have access to for contextual interviews**
- **A project timeline and milestones for the quarter**
- **Links to group members individual class wiki pages and other online resources**

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**Project GreenLight**

**Cognitive Cartographers Wiki Page**

**Digital Pen + Podcast**

**Shuttle System Redesign**

**Online Music Collaboration**

On Chetos

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**The A-Team: Community Building in CSB**

Welcome to the Spring 11 A-Team Project Page.

This quarter we will be focusing on community building in the Cognitive Science Building. Graduate and undergraduate students, as well as staff and faculty will help drive our design innovation of the Cognitive Science Building in order to provide a sense of harmony and community.

We intend to use interview, interpretation, work meetings, and affinity methods described in Rapid Contextual Design to help us along our process. None of us are architect trained; however, together we believe A32 will provide us with the basis to deliver a user-centered design process.

Our team consists of the following members:

- *Gina Mello*
- *Richa Kachroo*
- *Alicia Leung*
- *Ryan H. Ting*
- *Yachen Ju*
- *Weisheng Hu*

We can all be reached at 160@humana.com.

**May 1, 2011**

This week we will find interior and outdoor spaces on campus to get inspiration for design ideas for CSB. Some of the places we look at include parks of campus. I also send out a survey to all (including the pictures we both thoroughly. We also held a Q&A with Darcy regarding the ways we should be documenting our user data into the design process.

Our next step is to develop an affinity diagram common to several annotations together and maybe even play with these past 2 tables (affinity tables) to identify them with our ideas. Initially, we will establish a set of criteria for both this building and the design process.

**April 26, 2011**

- Tour (about 2 hours)

Boil some of our ideas that we captured during our tour of the CSB building. We also asked several students some questions regarding the building and got some great feedback.
Reminder: Informed Consent

All investigations involving human subjects at UCSD are governed by a set of regulations. These regulations have been put in place to protect the rights of people who participate as subjects in research projects.

If a research process will put a subject at risk, the subject must be informed of the risks and must consent to participate prior to the conduct of the research.

The research projects in this class will be conducted under the terms of an application that Professors Hollan and Hutchins submitted to the governing committees. You must comply with these terms.

Before you collect data from anyone, you must obtain their informed consent. That is, you must tell them what you want them to do, what information you are going to collect, and what you will do with the information you collect.

There are reasonable exceptions but if in doubt always best to obtain consent.
Informed Consent

You **must** retain a copy of the consent given by all participating subjects. The consent forms must be attached to your paper when you turn it in.

The principal potential risks of the projects for this class are that a subject might say something in the course of an interview that, if later revealed by the student doing the interview, could cause the subject embarrassment or some undesired social consequence.

You will not interview subjects about their personal lives or other topics that may be socially sensitive. You will not collect any sort of data on any illegal or dangerous activity.

You will not interview anyone in a context that has risks associated with it. For example, you will not interview anyone during driving or any other situation in which the interview places someone (including you) at risk.

You will do whatever you can to protect the interests of the participants. If complications arise in your relationship to a subject or subjects, report the problem immediately. The instructors together with the student and the participant will work together to resolve any difficulties.
Informed Consent

For photographic studies, informed consent will be obtained by the student using the Photo Consent form before taking any photos.

For audio recording, informed consent will be obtained by the student at the beginning of the interview using the Audio Consent form.

For observational studies, informed consent will be obtained by the student using the Observation Consent form before beginning observations.

For video studies, informed consent will be obtained by the student using the Video Recording Release Consent Form, before making any observations.
Contextual Interviews

The main goal of the course is for you to experience the process of contextual design and begin to practice the skills involved. Learn not only how to talk-the-talk but to walk-the-walk.

The contextual design process will always need to be adapted to your project.

The main thing to keep in mind: Contextual design is data driven design.

A key form of data comes from the contextual interviews you are doing.

Often a first round of interviews helps you establish the focus of your project but doesn’t collect the information you really need to drive design.

Frequently need to conduct a second round of interviews.

Let’s review the contextual interview process and discuss how it might need to be modified for some projects.
Contextual Interviews

• Context:
  Go where the work is and watch it happen

• Partnership:
  Talk about the work while it happens

• Interpretation:
  Find the meaning behind the user’s words and actions

• Focus:
  Challenge your entering assumptions
Master/Apprentice Model

Effective model for collecting data, since the best time to unravel the vital from the irrelevant and explain the difference is while in the middle of the activity.

Not natural to stop an activity to think and talk about it: the apprentice relationship provides the opportunity to do so.

People depend on the environment and things in it to tell them what to do.

Talking about an activity while doing it protects one from the human propensity to talk in generalizations that omit the details designers need.
Contextual Interview

Taking on the role of apprentice encourages humility, inquisitiveness, and the attention to detail needed to collect good data.

Using the real artifacts grounds the user in specific instances. Return the user to the activity in front of them whenever possible.

Periods of watching the activity unfold, interspersed with discussions of how the activity is structured.

Followed by interpretation: chain of reasoning that turns a fact into an action relevant to the designer’s intent.

From the fact, the observable event, the designer makes a hypothesis, an initial interpretation about what the fact means or the intent behind the fact. The hypothesis has an implication for the design, which can be realized as a particular design idea for the system.
Contextual Interview

Take the attitude

- That nothing any person does is done for no reason; if you think it’s for no reason, you don’t understand the point of view from which it makes sense
- That nothing any person does is unique to them; it always represents an important class of users whose needs will not be met if you don’t figure out what’s going on
- That everything is new, as if you had never seen it before

Probe the thing that is unexpected and see what you find

Look for ways that what they are doing differs from what you the designer think they should be doing
Contextual Interview

Obtain informed consent

Begin as a conventional interview

- Introduce yourself and your focus. The user should know from the outset what you care about and can start with work relevant to the focus
- Promise and be sure to ensure confidentiality
- Explain that the user and their work is primary and that you depend on them to teach you about the activity and correct your misunderstandings
Contextual Interview

Transition to Master/Apprentice

• State the new rules: the user will do the activity while you watch, you will interrupt when you see something interesting, and the user can tell you if it is a bad time to interrupt

• Anytime you want to break social norms, it’s best to define the new rules for the social interaction so everyone knows how to behave appropriately
Contextual Interview

Interview

• User starts doing her task and you observe and interpret. This is the bulk of the interview.
• You are the apprentice, observing, asking questions, suggesting interpretations of behavior.
• You are examining artifacts and eliciting accounts.
• You should keep the user concrete, getting back to real instances. Use the actual artifacts to help keep things concrete.
• You should take copious notes by hand; don’t depend on a recorder to catch everything.
Contextual Interview

Wrap-up

– Wrap up your understanding of the activity
– Skim back over your notes to summarize what you have learned
– Try not to just repeat verbatim what happened, but say what is important about the activity
– This is your last chance to correct and elaborate your understanding. Allow the user to help
– Thank them for their time
Contextual Interview

Produces a description of user’s activity

- Context
- Flow / structure of the activity
- Problems in their activity
- Problems with tools and other contextual elements that influence the activity

Design ideas emerge from understanding the activity

Importance of group interpretation sessions
Video: Interpretation Session

Contextual Design Interpretation Session:

Simultaneously generated work models

incontext ENTERPRISES
Example Design

Redesign workspace to support face to face travel consultations

Rodden, Rogers, Halloran, and Taylor
Problems from observations and interviews

• The arrangement is socially awkward with the technology setting up a barrier to collaboration.
• Time is spent when the customer is waiting doing nothing, and is not being communicated with by the agent.
• The agent has to translate everything into a verbal form for the customer to understand what is going on.

This means that the content of the consultation – a round the world trip – is hard to ‘see’: it tends to be something imagined on the basis of talk – and of course, the customer has to remember the information from moment to moment, and with a complex product can easily get lost. This issue is compounded by the numerous representations used.
Design Implications

• Reducing physical asymmetry by configuring the orientation of displays to promote cooperation at the core of the consultation.

• Reducing representational asymmetry by providing shared informational resources that both customer and agent can refer to and make sense of.
Design Implications

• Empowering the customer, by enabling them to take a more active part in the initial stages of planning.

• *Reducing social awkwardness, through designing better* physical and technological arrangements and enhancing camaraderie between customer and agent.

• *Reducing translation costs and, in so doing, the cognitive* effort required to understand and develop the ultimate outcome.

• *Enabling the customer and agent to plan synchronously* and in a complementary way.
Designing a New Interactional Space

• Altering the physical arrangement of the technology to allow more equitable access to information by both parties.

• Providing different seating/standing arrangements to allow the customer and agent to sit or stand side by side rather than opposite each other.
Figure 3 Screen shots of the three displays from the eTable prototype showing the itinerary unfolding.
The Pill Bottle

• Standard-issue amber-cast pharmacy pill bottle has remained virtually unchanged since it was pressed into service after the second World War.

Deborah Adler
Young graphic designer

Grew up in a family of doctors but took a different path: MFA

Her grandmother accidentally took her grandfather’s meds

Her ClearRx prescription-packaging system used by Target pharmacies.

Also in a MoMA exhibit
Inconsistent labeling. Every pharmacy’s bottle has a different style and placement of information.

Branding trumps all. The first and largest piece of type on a label is often the drugstore’s logo and address—not the name of the drug and instructions on how to take it, which should be given priority.

Confusing numbers. Numerals are often printed without explanation. The number 10 floating in empty space, for example, could be read as ten pills or “take ten times a day.”

Poor color combinations. Color-coded warning stickers don’t contrast strongly enough with either bottles or text. Black type set against a navy background is hard to decipher. An orange sticker can hardly be read against an orange bottle.

Curved shape is hard to read. Existing pill bottles have no flat surfaces and are too narrow for an entire label to be visible at once. In order for all pertinent information to be observed, the bottle must be rotated.

Tiny type. The FDA requires a separate information sheet to be included with all medication. The long lines of tightly spaced type mean it’s usually discarded unread.
Adler’s Prototype

- **1) Easy I.D.**
The name of the drug is printed on the top of the bottle, so it’s visible if kept in a drawer.

- **(2) Code red.**
The red color of the bottle is Target’s signature—and a universal symbol for caution.

- **(3) Information hierarchy.**
Adler divided the label into primary and secondary positions, separated by a horizontal line. The most important information (drug name, dosage, intake instructions) is placed above the line, and less important data (quantity, expiration date, doctor’s name) is positioned below.
Adler’s Prototype

- **(4) Upside down to save paper.** Klaus Rosburg, a Brooklyn-based industrial designer hired by Target, came up with an upside-down version that stands on its cap, so that the label can be wrapped around the top. Every piece of paper in the package adds up to one eight-and-a-half-by-fourteen-inch perforated sheet, which eliminates waste and makes life easier for pharmacists.

- **(5) Green is for Grandma.** Adler and Rosburg developed a system of six colored rubber rings that attach to the neck of the bottle. Family members choose their own identifying shade, so medications in a shared bathroom will never get mixed up.
Adler’s Prototype

- **6) An info card that’s hard to lose.** A card with more detailed information on a drug (common uses, side effects) is now tucked behind the label. A separate, expanded patient-education sheet, designed by Adler, comes with three holes so it can be saved in a binder for reference.

- **(7) Take “daily.”** Adler avoided using the word once on the label, since it means eleven in Spanish.

- **(8) Clear warnings.** Adler decided that many of the existing warning symbols stuck on pill bottles don’t make much sense—the sign for “take on an empty stomach,” for instance, looked like a gas tank to her—so together with graphic designer Milton Glaser, for whom she now works, she revamped the 25 most important
Passive Real-World Interface Props for Neurosurgical Visualization
Ken Hinckley, Randy Pausch, John C. Goble, and Neal F. Kassel
Affinity Diagram

Advantages of post-it notes

High resolution

Take pictures

Put on large paper so can roll up
Why don't more Americans commute to work by bicycle?

- The best bike routes are not usually the best car routes.
- Biking time is more than driving time for trips > 10 miles.
- Many people live >10 miles from work.
- A decent commuter bike costs at least $500.
- Recreational bikes are not always good commuter bikes.

- Helmets give cyclists "helmet hair".
- Fixing flats requires some technical skill.
- Most workplaces do not provide secure bike storage.
- Cyclists are often perceived as eccentric.
- Few workplaces provide locker room facilities.

- Cars are an expression of self for many Americans.
- Cycling requires at least modest fitness.
- Carrying cargo requires extra equipment.
- It's hard to stay comfortable on a bike in the rain.

- Bikes locked outside are prone to theft.
- Many people don't know what kind of gear they need for commuting.
- Most locations have variable climate over the year.
- In the winter, it's dark on the commute home.

- Many people have a hard time committing to exercise.
- On warm days, cyclists sweat.
- Cyclists are exposed to danger from cars when they share the road.

- Scrub
- People are idiots when it comes to picking bike routes.
- Americans are couch potatoes.

- Scrub
- Many people have a hard time committing to exercise.

- Safe urban cycling requires skill.
- Riding on busy roads is scary.
- Staying comfortable in winter is tricky.
Why don't more Americans commute to work by bicycle?

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Many people don't know what kind of gear they need for commuting.

Cyclists are exposed to danger from cars when they share the road.
Many people live > 10 miles from work.
Carrying cargo requires extra equipment.
A decent commuter bike costs at least $500.

Riding on busy roads is scary.
Biking time is more than driving time for trips > 10 miles.
Create Headings

Cogsci 102C
Cognitive Design Studio

Why don't more Americans commute to work by bicycle?

- Cycling presents the wrong image for many people.
  - Cars are an expression of self for many Americans.
  - Looking and feeling professional requires extra effort.
  - On warm days, cyclists sweat.
  - Helmets give cyclists "helmet hair"
  - Few workplaces provide locker room facilities

- Secure bike parking is not always available.
  - Bikes locked outside are prone to theft.

- Bikes locked outside are prone to theft.
  - Most workplaces do not provide secure bike storage.

- Staying comfortable requires planning and gear.
  - It's hard to stay comfortable on a bike in the rain.
  - Most locations have variable climate over the year.

- Staying comfortable in winter is tricky.
  - Cycling requires at least modest fitness.

- Biking presents real and perceived danger.
  - In the winter, it's dark on the commute home.

- Cyclists are exposed to danger from cars when they share the road.
  - Biking takes more time than driving for many people.

- In the winter, it's dark on the commute home.
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  - Biking time is more than driving time for trips > 10 miles.

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- Recreational bikes are not always good commuter bikes.
  - A decent commuter bike costs at least $500.

Cognitive Design Studio
Quarter Half Over

This Week:
Discussion of contextual interviews (and often the need for a second round), example projects, general project advice, and creative aspects of design.

Next Week:
Adam, Anne Marie, Nadir, and I will be at the CHI conference in Vancouver

Tuesday May 10th: Informal class meeting. Nancy and IAs will discuss their views of your projects, give advice, and answer questions. Feel free to send specific questions to 102C@hci.ucsd.edu that you would like addressed.

Thursday May 12th: Exam II: Chapters 7-14 and Lectures
Email from Tara

1. Should general Safety be a topic more focused in our renovation?

2. Should the scope of this project be within a reasonable scale to plan and test with a prototype in our allotted time? Or because it is more of a pre-implementation endeavor can it involve more above and beyond renovations to design ideas?

3. How far into design ideas should we go in depth into since we only have a few weeks? Ie: just having mock ups or actually going to companies and estimating cost etc

4. Should pictures be incorporated into the final paper or just in the binder project?

5. We're having some trouble focusing our project or what it is exactly that we want to do to improve or redesign some aspect of Hopkins parking structure, how can we go about doing this using the data that we've already collected?

6. Are there any clues within our data that we should be looking out for as "important points," and is there any data that we can just flat out ignore?

7. While we're in our work modeling phase and adding affinity notes to our visual/sequence/artifact/physical models, what is the best technique for us to use to consolidate the notes in such a way that the final compilation in the consolidated sequence model reflects notes that are most useful for our final solution? How do we differentiate which notes and sequences are more valuable than others, when all of them seem to be of equal importance?

8. How do we know if our first set of interviews are good enough so we don't have to conduct a second set?
What we are evaluating

- Engagement with the process

- Remember these are new skills and you cannot expect to be immediately skillful

- Practice and investing time

- One learns from mistakes

- Thoughtful use of the tools of contextual design to advance your project

- Sometimes rather than one design it is more reasonable to have a set of designs with data about +’s, -’s, and tradeoffs.
Good Design Requires Creativity In Addition To Being Data Driven

Challenge of being creative
Draw four lines through all the points without lifting your pencil from the paper
Creativity and Dissent

Authentic dissenters — people who really disagree with group — can enhance group creativity.

Their opinion needn’t be right — but they can free the group from stagnant thinking.

The originality of the minority stimulates the majority.
Dissent and Authenticity

The benefits of dissent are weakened if

Dissent is not real: A deliberate “devil’s advocate” in the group can actually stifle dissent, because the majority know the opinion is manufactured.

Dissent is not encouraged: Polite or pro-forma acceptance is not enough.
The Reflective Practitioner
How Professionals Think in Action
Donald A. Schön
Problem Setting

From the perspective of Technical Rationality, professional practice is a process of problem solving. Problems of choice or decision are solved through the selection, from available means, of the one best suited to established ends. But with this emphasis on problem solving, we ignore problem setting, the process by which we define the decision to be made, the ends to be achieved, the means which may be chosen. In real-world practice, problems do not present themselves to the practitioner as givens. They must be constructed from the materials of problematic situations which are puzzling, troubling, and uncertain... When we set the problem, we select what we will treat as the “things” of the situation, we set the boundaries of our attention to it, and we impose upon it a coherence which allows us to say what is wrong and in what directions the situation needs to be changed. Problem setting is a process in which, interactively, we name the things to which we will attend and frame the context in which we will attend to them.

--- From “The Reflective Practitioner”
Reflective Conversation with the Materials of a Design Situation

• Donald Schön studied professionals - especially professional designers - for many years. Although his academic home was in a department of urban design, his subjects of interest have ranged from psychiatrists and social workers to architects and jazz musicians.

• After observing and interviewing practitioners in many domains, Schön was able to characterize the common elements in their practices and their ways of teaching new practitioners.

• In The Reflective Practitioner Schön drew on examples from these studies to outline the basics of what it means to have and to apply expertise.
Architectural Student

From an design activity in an architectural class

“I had six of these classroom units but they were too small to do much with. So I changed them to this more significant layout (the L-shapes). It relates grade one to two, three to four, and five to six grades, which is more what I wanted to do educationally anyway. What I have here is a space which is more of a home base. I’ll have an outside/inside which can be used and an outside/outside which can be used – then that opens into your resource library/language thing.”
Everyday Action

- As we go about everyday life, we all exhibit knowledge in a special way.

- Although we often cannot say what it is we know, we do know how to take action. We carry out many actions, recognitions, and judgments without thinking about them. This is one of the reasons we collect the type of observational data we do.

- In fact, in many cases, we do not even remember how we learned them. Activities as fundamental as walking fall in this category.

- We could say that our knowing is in our action.
Reflection in Action

• Reflection in action has a different character: It is closely tied to the experience of surprise.

• Sometimes, we think about what we are doing in the midst of performing an act. When performance leads to surprise - pleasant or unpleasant - the designer may respond by reflection in action: by thinking about what she is doing while doing it, in such a way as to influence further doing.

• For example, when talented jazz musicians improvise together, they listen to one another and to themselves. Within the structure of the piece and a familiar harmonic scheme, they think - or perhaps feel - what they are doing. While in the process, they evolve their way of doing it. The players keep on playing while, on occasion, noting and responding to the surprises produced by other players.
Reflection in Action

• This *reflection in action* is something Schön saw as common to all design activities.
  – Architectural design is one example
  – Writing
  – Programming
  – Interface design
  – …

• A designer makes things.
  – Often, the thing initially is a representation, a sketch, a plan, a program, or something to be constructed by other people.
  – Many of the relevant variables cannot be represented in a sketch, formal description, or model; this limitation makes the design process inherently complex.
  – A system is complex in the specific sense that, whenever I make a move, I get results that are not just the ones that I intend. That is, *I cannot make a move that has only the consequences that I intend. Any move has side effects.*
A Conversation with Materials

- It is extremely rare that the designer has the design all in her head in advance, and then merely translates it.

- Most of the time, she is in a kind of progressive relationship - as she goes along, she is making judgments.

- Sometimes, the designer's judgments have the intimacy of a conversational relationship, where she is getting some response back from the medium, she is seeing what is happening - what it is that she has created - and she is making judgments about it at that level.
Backtalk

• One aspect of the conversation is what Schön calls *backtalk,* where you discover something totally unexpected - "Wow, what was that?" or "I don't understand this," or "This is different from what I thought it would be - but how interesting!"

• *Backtalk can happen when the designer is interacting with the design medium.* In this kind of conversation, we see judgments like, "This is clunky; that is not," or "That does not look right to me," or just "This doesn't work." The designer's response may be "This is really puzzling," or "This outcome isn't what I expected - maybe there is something interesting going on here."
3M Scotch Tape: Backtalk from Users

- 3M developed a transparent tape to mend books. (you could save money, hence Scotch)

- Users did bizarre things with Scotch Tape: they wrapped packages, hung posters on the wall, used it to put their hair up in rollers, …

- 3M began to observe what these consumers were doing, and their staff started rethinking the product in light of what they were getting back.

- 3M came out with a hair-setting Scotch Tape, a medical Scotch Tape used for binding splints, a reflective Scotch Tape for roads, and so on. 3M built on the order of 20 or 30 businesses through the differentiation and specialization of the basic product idea. They learned what the meaning of the product was by listening to what people said and by observing what people did.
Details become invisible

- A good designer strives to make the details work so well that they become invisible to the user.

- Michael Polanyi was a physical chemist who became a philosopher. His book *The Tacit Dimension* contains an interesting passage on "What is a machine?"

  - *His argument is that a machine is an abstract system whose elements are functions,* such as the function of the calculator, the function of the spark plug in the automobile engine, the function of the lever, or the function of the spring.

  - The question of the materials used in the composition of the machine is not pertinent, unless a component fails. Then the issue of what the machine is made of becomes important; until that point, unless the machine fails, its composition is not important at all.

  - Broadly speaking, we might say that an object's failure or difficulty in use makes visible its insides (how it is made, of what it is made). In a good, smoothly working artifact, materials and mechanisms of operation become, in a sense, invisible—or, as Polanyi would say, tacit.

  - **Breakdowns**

  - Example: Pen and writing or sketching. Breakdowns such as running out of ink.
Brainstorming Fundamentals

With acknowledgements to the Stanford d.school
Brainstorming

• Visioning as discussed in the text is a form of “grounded brainstorming.”

• Great brainstorming is one of the most powerful and one of the most misunderstood methods in the designer’s toolbox.

  – It’s a special kind of collaboration with specific rules of behavior designed to maximize idea generation.

  – Many say they know how to brainstorm. Few do it really well. In some ways, brainstorming is like volleyball. If you know the rules, you might be able to survive a social game at the neighborhood picnic. But this is a far cry from the kind of volleyball you watch on TV. No matter what level you’re at, you can always up your game.
IDEO Brainstorming Rules

• **Defer judgment** – separating idea generation from idea selection strengthens both activities. For now, suspend critique. Know that you’ll have plenty of time to evaluate the ideas after the brainstorm.

• **Encourage wild ideas** – breakout ideas are right next to the absurd ones

• **Build on the ideas of others** – listen and add to the flow of ideas. This will springboard your group to places no individual can get to on their own

• **Go for volume** – best way to have a good idea is to have lots of ideas

• **One conversation at a time** – maintain momentum as a group. Save the side conversations for later.

• **Headline** – capture the essence quickly and move on. Don’t stall the group by going into a long-winded idea.
Setup

• **Recruit the best people**
  – Watch out for groups larger than 8 people.
  – Involve people with different areas of expertise and who you know to be good brainstormers.

• **Set the stage**
  – **Bring toys and props** - related and unrelated to your brainstorm. Props can give you something to play with and can jog your thinking in unexpected directions.
  – **Provide munchies** – sugar goes with new ideas
  – **Be mindful of seating and layout** – not too far apart, facing each other, ability to stand and pace or walk around.
  – **Pick a space where there’s lots of writing space on the walls** - floor to ceiling whiteboards or tons of large post-it pads are ideal.
  – **Bring lots of paper and markers** – put them on the table and encourage everyone to use them. You get to keep all the ideas on the whiteboards, the post-it pads and on all the paper on the table.

• **Review the rules** and ask group to self enforce them
  – Remind participants to use the paper in front of them. “If you have an idea stuck in your head, get it out on paper so you can move on and participate in the brainstorm at hand.”
Warmup

- Put people in the right mindset and set tone with a quick warm up activity.
  - Do something physical (e.g. barnyard animals, jumping jacks, etc.)
  - Run a 2 minute funny brainstorm (e.g. how to sell more pantyhose to men, etc.)
Ideation

• Prepare yourself - know what you want out of the brainstorm. Prepare a draft of initial brainstorm questions that you think will help guide the group. Have a few crazy ideas in your pocket that you can contribute when needed.
  – Be mindful of the scope and specificity of the leading brainstorm questions you use. Too broad (e.g. “How to save the world”) and the group will wander. Too narrow (e.g. “what color should I dye my hair”) and there’s no room for unexpected ideas.

• Write fast & be visual – practice writing and sketching fast

• Use humor and be playful

• Monitor and lead the productivity of the brainstorm. Be aware of and affect the following:
  – Framing – scope, specificity and scale of questions posed and how these contribute/drive ideation level
  – Fluency – pace, tone, and overall flow of ideas
  – Flexibility – range and variety of ideas
  – Fundamentals – the basic rules
Ideation

- **Monitor and lead the productivity of the brainstorm.** Be aware of and affect the following:
  - **Fun** – group energy level, use of humor, level of participants’ engagement, who adds energy and when.
- **Ways to affect the above and reframe the brainstorm on the fly:**
  - Pose a more specific question
  - Rephrase a question
  - Follow a thread that seems promising
  - Shift gears and offer a whole new question
  - Lob in a crazy idea
  - Encourage people to move around, pace and play
  - Say something funny
- **Know when to stop**
  - Call the match when you feel you’ve got what you need or when group runs out of steam
- **In general, think ~45-60 minutes for actual brainstorm time.** Warm up and wrap up can take ~15-30 minutes. Actual time spent can vary according to a group’s level of brainstorm proficiency and endurance.
Wrap Up

• Start the selection and synthesis step with the group. A couple of narrowing tools that are effective include:
  – **Post-it voting** – give every participant 4 stickers and have everyone put stickers next to their favorite ideas. Clustering of stickers indicate possible strong design directions.
  – **Group review and discussion** – ask everyone to review the boards of ideas, and talk about the specific ideas or directions they like and why.
Offline

• **Continue the selection and synthesis step in small teams (1-2 people) offline.**
  – Capture your big ideas in new sketches, one page write-ups, storyboards, headlines, etc.

• **Your goal is to synthesize your ideas into concepts or concept directions that act as springboards to prototyping.**
Successful Brainstorm

• Fluency: you leave with a lot of good ideas. A good brainstorm can result in ~100 ideas in an hour.

• Flexibility: you have a wide variety of different concept directions hidden in the mess of ideas.

• Springboards: you leave with a handful of great springboards that you can start to refine and prototype.

• Your room looks like the photo above