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**This workbook is an accompaniment to the Design Thinking for Educators Toolkit, available for free at designthinkingforeducators.com.**

***Designer’s Workbook***

***Design Thinking for Educators***

**MY DESIGN CHALLENGE: is to build an information board that could be installed throughout campus in order to serve different needs of the students. To identify which needs the students may have, we conducted surveys and compiled information to select two main features that we are going to build for the board. The final goal is to build a prototype that could illustrate our real product with a running software/application that features the two main categories we identified from surveys.**

***Design Thinking for Educators***

**What is Design Thinking?**

Design Thinking is about believ- ing we can make a difference, and having an intentional process in order to get to new, relevant solutions that create positive impact.

Design Thinking gives you faith in your creative abilities and a process for transforming difficult challenges into opportunities

for design.

Design Thinking is: **human-centered collaborative optimistic experimental**

### Welcome to the

***Designer’s Workbook.***

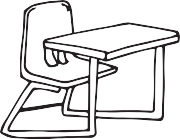
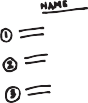
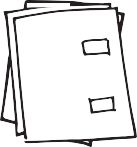
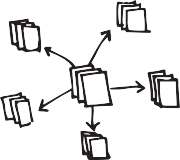
This workbook includes step-by- step instructions for completing a design challenge using the design thinking process. this workbook is a quick start guide to the design thinking process and is best used in combination with the Design Thinking for Educators Toolkit.

THIS WORKBOOK CAN SUPPORT ANY DESIGN CHALLENGE YOU WANT TO TACKLE. THOUGH WE OFTEN SEE CHALLENGES THAT CENTER AROUND A FEW SPECIFIC TOPICS:

**The Design Thinking for Educators Toolkit contains in-depth instructions and explanations as highlighted**

**by each step in this workbook. The toolkit also provides you with examples from educators, like yourself, of how they’ve been using design thinking in their work.**

**CURRICULUM**



Every day you design ways to interact with your students around content. You can follow a design process to be more intentional about connecting this content to the interests and desires of today’s learners by finding out more about the things that they do outside of school and connecting that to the content you are bringing to them.

SPACES

The physical environment of the classroom sends a big signal about how you want your students to behave. Right now we tend to think of our classroom spaces as standard… kids in rows, sitting in desks. By rethinking the design

of our spaces, we can send new messages to our students about how they should feel and interact in the classroom.

PROCESSES & TOOLS

Your school has already designed a set of processes or tools that may or may not be setting up your school for success. This is

Typically outside of the classroom and specific interactions around learning, and more around how the system operates. Every process is already designed, and thus can be redesigned! Sometimes creating tools can be essential to support- ing newly designed processes.

SYSTEMS

Not everyone can always make decisions for the system that they exist within, but everyone can contribute to the design of that system. Designing systems is about balancing the complexity of many differ- ent stakeholder needs with the needs of the operation. When designing systems, we’re often setting high-level strategy such as stating visions, priorities, poli- cies, and key communications around these ideas.

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**designthinkingforeducators.com.**

***Hello Designer!***

your fiftieth, you are taking a brave step

***Getting***

Whether this is your first design project or

**to address challenges in your classroom, school or community by designing new solutions that build from people’s needs and desires. Exciting!**

**This workbook is meant to help you structure your process and capture your thoughts. Use it how it best helps you… you can use some of the methods or all of the methods, it’s up to you.**

**First step… define your challenge and create a project plan.**

***Started***



**WHAT’S IN THIS SECTION**

* 1. ***Define a Challenge***
  2. ***Create a Project Plan***

**0–3 *Create a Project Plan***

*0–1 Define a Challenge* **GETTING STARTED**

### 0–1 Define a Challenge

Dreams and Gripe Session

Finding opportunities for design often begins by noticing problems. Sometimes it comes out as wishes (“I really wish our school had\_.”) Sometimes it comes out as complaints (“It annoys me that we’re not\_.”) Either starting point is fine. You might want to try this with a friend… share your dreams and gripes and ask them to reflect back design opportunities.

Next, flip these statements into possible design challenges. Begin your question with “How might we…” or HMW for short. This turns the problems you see into opportunities for design!

**DREAMS/THINGS I WISH WOULD EXIST**

**HOW MIGHT WE…**

Market research: conduct surveys (100 responses)

Design system: identify opportunities and narrow down possibilities

Conclude surveys and choose 2 key features: Professors’ hours and food menu item.

Choose a domain and start building a prototype.

Our group would like to turn our infoboard

into a real product that could serve students

looking up information more easily around

campus. Perhaps, it’s not just about looking

up information, it’s to entertain and be a part

of an organization.

1. Actually, build the prototype and redo marketing research to find out if that’s useful to the students.
2. Only implement a few boards around campus to test the water.
3. If it’s a success, then we will plan to build more.
4. Of course, there’s always room for improvement as we go.
5. After all, all the updates on the app stores aren’t for nothing/

**GRIPES/THINGS THAT COULD BE BETTER**

Interactive robots would be so much cooler. But financially and realistically, it’s not close to being built anytime soon. I think our product would be much utilize due to how often the students interact with their mobile devices. What if their phones die or run out of things to check on? What if they don’t want to log in twice to their emails to find out what their professors were planning? Just one click from our infoboard and voila!

**How might we?**

*0–2 Create a Project Plan* **GETTING STARTED**

### 0–2 Create a Project Plan

Sketch out the End Goal(s)

What will I work to produce?

**END GOAL(S)**

* A working prototype
* Approval from professor
* A persuasive proposal that the school would sign

Define Indicators of Success

What measures and indicators will help me know my ideas are successful?

Establish Constraints

What constraints will I need to manage?

**CONSTRAINTS**

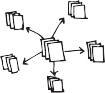
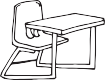
* School approval
* Finance
* Time management
* Corporate the whole team to work together

Things to keep in mind:

* Responses from 100 different students.
* Feedback from professors and classmates.
* If this prototype works on campus, there’s potential to expand to other places like supermarkets, etc.

* Time
* Database to pull from for the application
* Deadline
* Report paper

*0–2 Create a Project Plan* **GETTING STARTED**



Write a Brief

Write up a short “brief” that clarifies the challenge you’d like to address. Write it as if you were handing it to someone else to design with. Capture thoughts on why this is a problem, and what the opportunity for design will be.

How Might We!

Capture the design challenge you’ve decided to work on…

**CHALLENGE QUESTION**

The first challenge to collect survey responses are done.

The next step is to start mapping out the prototype

We must build a reliable database first

Information for the database can be based on the Cal State LA website

We must design the UI as simple as possible

Avoid bugs and other issues

Constant improvement

Test the application many times

Send out to test users to see if that works

Note down failures if any

Fix and upgrade

Building a database

Building a working prototype

Testing

**WHAT KIND OF CHALLENGE IS THIS? (CIRCLE ONE)**

**CURRICULUM**

**SPACES**

**PROCESSES AND TOOLS**

**SYSTEMS**

**!**

**BRIEF**

**TIP**

Keep the challenge simple

and optimistic. Make it broad enough to allow you to discover areas of unexpected value, and narrow enough to make the topic manageable.

*0–3 Create a Project Plan* **GETTING STARTED**

### 0–3 Create a Project Plan

The Design Thinking process is flexible and can integrate into your school structure and timing. The process can be run in a day, a week, a year, or more. What you put into the challenge determines what you get out of it. The depth of insight, opportunity areas, and level of concept refinement and impact will vary depending on the length of your project. For now, choose the timeline you’d like to begin working with. After getting started on the project, you may find that you’ll want to evolve this plan to meet the needs of your design solutions.

Project Checklist

What do you need to get in place to enable you to get started on this project? Do you need to align schedules to conduct a challenge on a professional development day? Do you need to book space or request materials? Who do you want help from?

Everyone in the group has their roles and, we work together in planning and conducting survey. Details will be provided below.

* Create survey
* Implement survey
* Collect results
* Decide key features
* Workshop
* Building database
* Building prototype
* Online discussion
* Meeting in class

Circle your Design Plan

**CHECKLIST**

**TO HELP ME WITH PLANNING, I WILL ENGAGE:**

**DAY**

8am

**TUE**

8am

noon

|  |
| --- |
| **MON** |
| 8am |
|  |
| 5pm |
|  |
|  |

**WED**

8am

**FRI**

noon

8am

**SEPTEMBER OCTOBER NOVEMBER**

noon

5pm

**IDEATION EXPERIMENTATION EVOLUTION**

5pm

noon

**IDEA**

noon

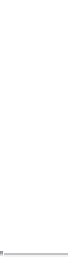
5pm

noon

**DECEMBER JANUARY FEBURARY**

**MARCH APRIL MAY**

**JUNE JULY AUGUST**



In a Day in a Week or Two Spread out over Months

|  |
| --- |
| **THU** |
| 8am |
| **EXPERIMEN** |
| 5pm |
|  |
|  |

Sketch your Timeline

Create a timeline for your project. What are major dates you’ll be working toward? Do you need a prototype to be ready for use after summer break? Do you want to share learnings at parent- teacher night or pitch your concept to the school board? Consider deadlines, meetings, and interim check-in dates.

We completed this initial process of planning and conducting survey prior to the first mid-term of the class on October 24th. We are working on building a prototype soon after this date.

**TIME**

**I WANT TO COMPLETE THE FIRST ITERATION OF THIS PROJECT BY:**

**1**

***Great!***

***You have now defined a design challenge to create new solutions***

***for, and have sketched a work plan for you and your team.***

***Now you are ready to move on to the first phase of the design***

***process... Discovery.***

**DISCOVERY**

**WHAT’S IN THIS SECTION**

**1–1 *Understand the Challenge***

**1–2 *Prepare Research***

**1–3 *Gather Inspiration***

*1–1 Understand the Challenge* **DISCOVERY**

#### **1–1 Understand the Challenge**

Review the Challenge

What are some things your team identified about the current design challenge? Capture key thoughts, constraints, and barriers from the discussion.

**THOUGHTS, CONSTRAINTS, BARRIERS**

**We came across a few challenges, including: if students will use our designed app, if the app has all the information that students are looking for, and where we would install the application at.**

Did your group rewrite the challenge after your discussion? If so, capture it here:

Share What you Know

What do you believe you already know about this challenge? What would you like to learn more about? Capture your assumptions, and your questions.

**I ALREADY KNOW**

**I already know that the challenges will be solved when we do a market research and a design research.**



**I WANT TO KNOW MORE ABOUT**

**I want to know more about how other student think and how other school deal with problems like what we have**

**HOW MIGHT WE...**

**After discussion, our challenges were the same.**

*1–1 Understand the Challenge* **DISCOVERY**

Build your Team

Who is on your team? Who are core members and who are extended members? Through your discussion, what did you determine about the roles that people will play and the unique goals that you each have?

**CORE TEAM MEMBER(S) GOALS AND ROLES**

**Jeel Joshi Doing Framing, Market Research, Design Research and Prototype**

**Krishna Ghorpade Doing Framing, Market Research, Design Research and Prototype**

**Divya Parmod Doing Framing, Market Research,**

**Pakhale Design Research and Prototype**

**Hai Anh Le Doing Framing, Market Research, Design Research and Synthesize**

**Songyun Qian Doing Framing, Market Research, Design Research, Define and Ideate**

**New Students Student Parents**

**EXTENDED AUDIENCE(S)**

**CORE**

**AUDIENCE(S) College Students Professors**

**EXTENDED AUDIENCE(S)**

**Potential Students**

Define your Audience

Who will you be designing for? Consider the core audience and extended audience. Draw a visual reminder.



**EXTENDED TEAM MEMBER(S) GOALS AND ROLES**

**Everyone on our team is a core team member, this part is not applicable.**

*1–2 Prepare Research* **DISCOVERY**

#### **1–2 Prepare Research**

Identify Sources of Inspiration

Who are all of the people involved in your topic? Who might represent extreme behaviors related to your topic? Which experts do you want to meet with to learn more about your topic? List the candidates that you think will provide the most inspiration and circle 3-5 that you want to engage with first.

Identify Places of Inspiration

Where can you go to have an inspiring experience related to your challenge? What are analogous settings or extreme experiences where you might witness similar or relevant behaviors and activities in a different context? List as many locations as you can and circle 3-5 that you are most excited to observe first.



**USERS, EXPERTS, EXTREME USERS**

**Students are the people most involved in our topic, they provide us with what information we will need to provide for our project. Professors will be also candidates that will provide us with good information .**

**INSPIRING LOCATIONS, ANALOGOUS SETTINGS**

**There is a screen by Simson Tower providing professor office locations. This is a good place to observe if students use what is currently being installed, and we could see how our will be better.**

*1–2 Prepare Research* **DISCOVERY**



Select Research Participants

Who specifically do you want to talk to and learn from? Create detailed descriptions for at least 3 different users or sources of inspiration. Be sure to cover a variety of gender, experience, ethnicity, etc.

**USER TYPE Current college student**

**USER TYPE Professor**

**USER DESCRIPTION**

**They could give us a very detailed information on what they want and what they don’t want for the app.**

**USER DESCRIPTION**

**They could let us know what information they would like to provide students.**

**USER TYPE**

**USER TYPE**

**USER DESCRIPTION**

**USER DESCRIPTION**

*1–2 Prepare Research* **DISCOVERY**

**INTERVIEWEE NAME**

**College Student Anson B Charlie**

Build a Question Guide: Interview

What do you want to learn to better understand the challenge at hand? What are you hoping to understand about people’s motivations and frustrations? What do you want to learn about their activities?

**!**

**TIP**

Make a copy of this for each interview.



##### 

**START SPECIFIC**

What are some specific questions you can ask to open the conversation?

What year are you in right now? What is your major? How many days are you on Campus?

**GO BROAD**

What are some questions that can help you start to under- stand this person’s hopes, fears and ambitions?

What are some essential information that you would like to find on a tablet that would help you in any ways? What would you do if you can’t find the information you want on the tablet?

**PROBE DEEP**

What are some ways you might be able to dig deeper in the conversation,, to find even more of the perspective this person has?

How are professor’s office hours provided to you? Are they convenient to find? If your phone is not convenient for you to use, would you use our tables to find information you need?

*1–2 Prepare Research* **DISCOVERY**

**OBSERVATION SITE**

**Simson Tower by the elevators**

Build a Question Guide: Observation

What are you looking to learn in this observation? Capture themes and questions that you want to make sure you get to in the site visit! Fill in one of these worksheets for each observation, so that you can consider what you will ask for each place you are visiting.

**!**

**TIP**

|  |  |
| --- | --- |
| Make a copy of this for each observation. |  |



##### 

**THINGS TO SEE**

What are some things you want to make sure you observe while you are visiting this place?

How many students use the screen to look up professor office rooms? How many students look up information on the screen? What information students look up on the screen?

**THINGS TO DO**

What are some things you can do to gain inspiration in this place?

By doing a survey and asking how students would like the screen to be improved, we could gain more information on how our project will be put together.

*1–2 Prepare Research* **DISCOVERY**



Prepare For Fieldwork

**CHECK LIST**

*QUESTION GUIDE*

*PARTICIPANT’S CONTACT DETAILS*

*TEAM MEMBERS’ CONTACT DETAILS*

*DIRECTIONS TO LOCATION*

*NOTEPADS AND PENS*

*CAMERA (CHECK BATTERIES!)*

*MOBILE PHONES THANK YOU GIFTS FOR PARTICIPANTS*

*(IF APPLICABLE)*

*POST-IT NOTES, SHARPIE MARKERS*

Assign responsibilities before going into the field. Who is in charge of confirming date, time, and location of the research activities? Who is responsible for making sure you have all the necessary equipment? Who will take the lead in interviewing? In documenting?

Each team member had to interview 20 people around campus or doing online surveys

**TEAM MEMBER ROLE**

**LOCATION OR INTERVIEWEE ADDRESS, DATE AND TIME**

Online mainly (through social media, university facebook page, etc.), food court, cafeteria, classrooms.

*1– 3 Gather Inspiration* **DISCOVERY**

#### **1–3 Gather Inspiration**

Inspiration Notes

**NAME OF PERSON INTERVIEWED/LOCATION VISITED**

**Neha Gupta**

**Bookstore**

**2pm**

**!**

**TIP**

Fill this out of this for each interview.

**AS YOU ARE INTERVIEWING,**

capture what you see and hear during a field visit. Capture direct quotes.

Separate your observations from your interpretations so that you know what you saw and what you thought it meant for

that person.

Look for work-arounds and adaptations people have made to make a system to serve their needs better such as books stacked under a laptop to make the screen a better height for viewing.



**OBSERVATIONS AND QUOTES**

**She suggested we could improve our project by enhancing more features. It could help her entertain while waiting for the bus.**

**INTERPRETATIONS**

**We took notes from her. At the same time, we responded that we needed to focus on only two features in order to perfect them and get them to work to illustrate our project. If it became a success, then we will consider expand the size of the prototype. But we agreed on the location that she suggested.**

*1– 3 Gather Inspiration* **DISCOVERY**

#### **1–3 Gather Inspiration**

Inspiration Notes

**NAME OF PERSON INTERVIEWED/LOCATION VISITED**

**Hanisha**

**College Food Court**

**!**

**TIP**

Fill this out of this for each observation..

**AS YOU ARE INTERVIEWING,**

capture what you see and hear during a field visit. Capture direct quotes.

Separate your observations from your interpretations so that you know what you saw and what you thought it meant for

that person.

Look for work-arounds and adaptations people have made to make a system to serve their needs better such as books stacked under a laptop to make the screen a better height for viewing.



**OBSERVATIONS AND QUOTES**

**Group chat**

**Easy to make announcements**

**INTERPRETATIONS**

**Took notes and will keep in mind for the future development of the application**

**2**

***Through the Discov- ery phase, you have gained deeper under- standing, empathy, and inspiration for***

***your design challenge.***

***Through Interpreta-***

***tion, the second phase of the design process, you will now make***

***meaning and define insights from your Discovery***

***observations and interviews.***

**INTERPRETATION**

**WHAT’S IN THIS SECTION**

**2–1 *Tell Stories***

**2–2 *Search for Meaning***

**2–3 *Frame Opportunities***

*2–1 Tell Stories* **INTERPRETATION**

**2–1 *Tell Stories***

Capture Your Learnings

Immediately after interviewing, be sure to capture your learnings. Capture one observation, story highlight or quote per post-it note. Use the prompts to guide you.

What did this participant care about the most? What motivates him/her?

Tablet were more portable, easier to use, and convenient devices over laptop computers. Essential tool for team projects and communicating with their professors and peers while on the go. Is the tablet 3g or 4g capable.

**WHO DID YOU MEET? (PROFESSION, AGE, LOCATION, ETC)**

HANISHA. SHE IS A CURRENT STUDENT OF COMPUTER SCIENCE. SHE IS ABOUT 22 YEARS. I MET HER NEAR THE FOODCORT.

What was the most memorable and surprising story?

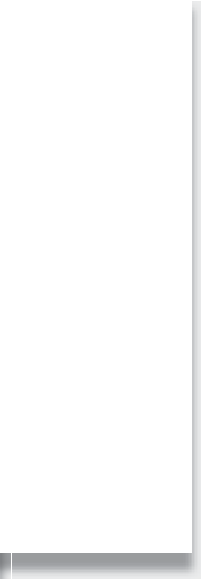
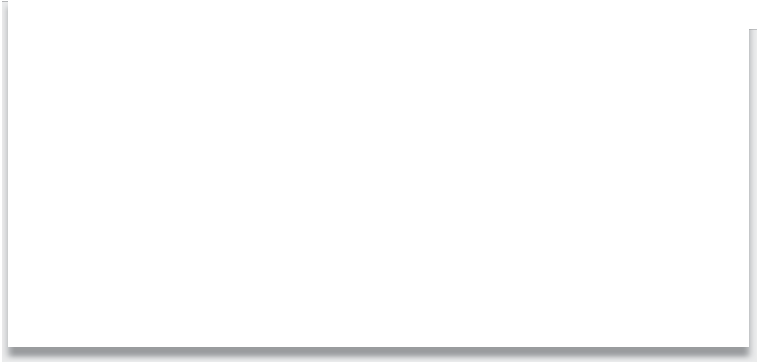
Weird answers and something

that was not expected.

What frustrated him/her?

It is just for marketing purpose, and education point of view. It is not considering the entertainment part.

What was interesting about the way he/she interacted with his/her environment?



“other” option which was provided was interesting as they can give answer of their own choice.

What questions would you like to explore in your next conversation?

1.Do tablet computers affect your relationship with your professors and colleagues? How and Why?

2.Do you enjoy using tablet computers? Why or why not?

*2–1 Tell Stories* **INTERPRETATION**

Increased efficiency.

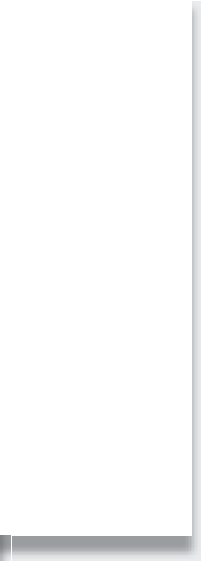
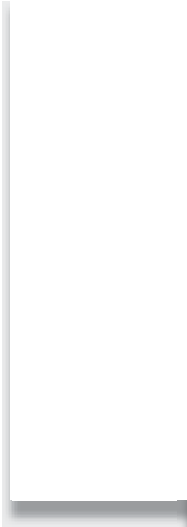
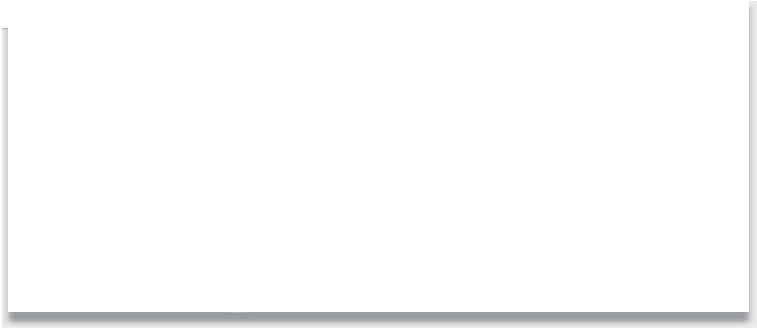
Share Inspiring Stories

Take turns sharing stories of the people you talked to or the places you visited. While listening to your team, capture their stories and observations on post-it’s, using a separate post-it per thought. Capture the most interesting learnings here.

Learnings from my partner/team:

Learnings from my partner/team:

Group work helps how to work with people outside their circle of friends, including those who have different backgrounds and experiences.



Learnings from my partner/team:

Learnings from my partner/team:

Listening to and respecting others idea.

Plan and manage time.

Learnings from my partner/team:

Learnings from my partner/team:

Encourages communication between team members.

Increases collaboration and allows brain storming

*2–2 Search for Meaning* **INTERPRETATION**

### 2–2 Search for Meaning

Find Themes

Look for themes, patterns and connections across your wall of post-it notes. Cluster related post-it’s around themes that you notice. It’s like moving your thoughts around and seeing new

patterns as a result. Create headlines for each category that capture these themes and patterns.

Make Sense of Findings

Take a closer look at your themes and find overlaps, patterns and tensions as they relate to each other. Can you group several related themes in larger categories?

**WHAT ARE THE LARGER CATEGORIES?**

**University students**

**University Canteens**

**University Majors**

**Major wise professors**

**Campus events (Technical - Nontechnical)**

**Sports Events**

Did you find any contradictions? Did you have any unexpected learnings or find something that felt surprising? Why?

**HEADLINES**

**Professor’s Office Hours**

**Food Items Menu**

**University Sports Events**

**Campus Events**

After having discussed with your team, and/or gotten feedback on the categories, what are you excited to dig deeper into?



**UNEXPECTED LEARNINGS**

**According to our survey, the top two problems for students on campus are, finding professor’s in their office hours and finding best food in taste using foods menu.**

**I AM EXCITED TO EXPLORE...**

**I am excited to explore our idea on building software based on the needs of students on campus in terms of searching for information such as, foods menu, sports events, office hours, campus events and so on.**

*2–3 Frame Opportunities* **INTERPRETATION**

Define Insights

Insights are a concise expression of what you have learned from your research and inspiration. They are the “aha” moments and unexpected learnings.

Sometimes, it can be helpful to write an insight in the form of a Point-of-View (POV) statement which makes an insight specific to a user or user group. A simpler way to create a POV is through the POV equation.

*user + need + interesting learning = POV*

**2–3 *Frame Opportunities***

**Make Insights Actionable** Actionable and successful ideas start with the right question, which identifies important opportunities through great INSIGHTS. Remember, each “How might we” (HMW) question will only address a portion of your challenge so you can create multiple HMW’s and prioritize them for ideation.

Is your question...

BROAD ENOUGH TO SPEAK NEW IDEAS?

NARROW ENOUGH TO FEEL MANAGEABLE?

FOCUSED ON RESPONDING TO YOUR USER-DRIVEN INSIGHT?



**INSIGHT/POV**

**INSIGHT/POV**

**!**

**INSIGHT/POV**

**We firstly analyze the method of survey on campus. In most of the case surveys were done by paper base only. So we find need to upgrade in survey method in which we are going to make an application for survey.**

**TIP**

Avoid brainstorm

questions that already imply a solution.

**HOW MIGHT WE...**

How might we create an application for survey purpose?

How might we add professor’s working hours in application?

How might we also provide foods menu to students for rating food as per their taste?

How might we also include sports event in survey?

How might we also take survey of campus events?

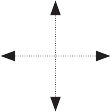
How might we include all graduate and undergraduate students ‘survey?

How might we include all major’s professor’s name and their office hours?

**INSIGHT/POV**

**We also get to know that students of our university find difficulty to meet professors on their office hours. Sometimes professors are not available on their office ours and students need to come again and again to meet that particular professor. So we find the need of some software that upgrade professor’s accurate availability.**

*2–3 Frame Opportunities* **INTERPRETATION**



Create a Visual Reminder

Frameworks, diagrams, and illustrations are great tools for communicating insights or complex information.

**THINGS TO TRY**

Map out the network of connections- people, actions, objects, interactions.

Illustrate activity or information flow.

Map the actual/figurative journey that people or things take.

Journey map Venn diagram Two-by-two Relationship map

**SKETCH OR CREATE A VISUAL THAT WILL HELP EXPRESS YOUR INSIGHTS.**

**3**

***Now that you’ve creat- ed a point-of-view and framed opportunities for your design chal- lenge, you are ready to move to the third***

***phase of the design process...Ideation!***

***Ideation will help you come up with many possible design solu- tions to address your challenge.***

**IDEATION**

**WHAT’S IN THIS SECTION**

**3–1 *Generate Ideas***

**3–2 *Refine Ideas***

*3–1 Generate Ideas* **IDEATION**

**3–1 *Generate Ideas***

**Prepare for Brainstorming**

A successful brainstorm session requires planning. The small details matter. Invite a diverse group of people who can stay open-minded and can build on each other’s ideas. 6-10 is ideal for a brainstorm. Who will you invite?

**CHECK LIST**

**Choose topic**

**Discussion of problem**

**Overview of project**

**General idea of project**

**Confirm idea overview**

**POST-ITS MARKERS**

**NAMES**

**Professor Arun Aryal**

**Neta Gupta**

**Vimal Kancharla**

**Nitesh Kamboj**

**Era Singh**

**Ruchita Sinde**

**Himani Batra**

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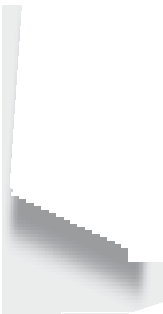
Sufficient wall space is necessary to have room for everyone to get up and see each other’s ideas, and will leave you with room to post plentiful ideas. Where will you conduct the brainstorm and how will you set-up the space to facilitate a brainstorm?

**SNACKS**

(never underestimate the power of sugar in a brainstorm!)

**BRAINSTORM RULES**

1. **DEFER JUDGEMENT**
2. **ENCOURAGE WILD IDEAS**
3. **BUILD ON THE IDEAS OF OTHERS**
4. **STAY FOCUSED ON TOPIC**
5. **ONE CONVERSATION AT A TIME**
6. **BE VISUAL**
7. **GO FOR QUANTITY**



**POSTTHE BRAINSTORM RULES.**

**ROOM SET-UP**

**We will conduct the brainstorm in our classroom. We used black full side paper and started discussion on a problem fact occurs to the students. We also frame a problem situation and how to solve that using tablet survey. After completing this we started on design research. In which we discussed the main key points and the path of our project.**

**PAPER**



Facilitate Brainstorming

Create, or use some of the suggested warm-up brainstorm questions from the Facilitate Brainstorming method to get people in the right mood. Which questions will you use?

**WARM-UP QUESTIONS On Survey Monkey list of questions were posted in order to look up information very quickly about event and**

**Schedule on campus while logging to your school portal. The question are**

**1. What class standing are you?**

**a. Freshman b. Sophomore c. Junior d. Senior e. Graduate students and others**

**2. You are on campus and need to look for some information about something, what would it be about?**

**a. Food menu at the cafeteria b. Professors’ office hours c. Sport events d. Student organizations e. Other (please specify)**

**3. If you can use this device for something, what would you do?**

**a. Promoting your clubs/orgs around campus b. Marketing events c. Making announcements d. Doing surveys e. Other (please specify)**

**4. If we could build the device that meet your needs, how likely would you use it? (Remember, it’s free and placed around campus!)**

**1.is least likely 2.is not really 3. somewhat likely 4.is most likely**

Which topic will you focus your brainstorm on?

**TOPIC**

**We are focusing on topics which are mostly used in and around campus. Topics related to events like sports and campus events, the food menu in different food outlets in cafeteria, the office hours of diffetent departments and different clubs which are around campus.**

Which HMW brainstorm questions will you use?

### Feeling stuck?

**Here are a few other things to try:**

**Add constraints**

Change the magnitude of the solution space, using size, price, time commitments, and count. Ask yourself, “What if… it was larger than this room? smaller than a peanut? took 5 years to implement? took 1 minute? was available for all? available for only a few?”

**Use inspiring brands.**

Ask yourself, “How would McDonald’s, Nike, Apple, Urban Outfitters, or Disney do it?”

**Make it time-specific**

Ask yourself, “What if it were made for the morning? night?”

**Hone in on a target audience**

Ask yourself, “What if it were only for tweens? kids? athletes? parents?”

**The questions which are mentioned above were finalized by asking the questions directly to the students. Due to this we were able to find out needs, and could come with understanding that what these students expect.**

**Select Promising ideas**

**As we started getting reviews on surveys we came to know that these points were considered the most important. The topics were Office hours and food menu. Maximum Students liked to answers on food menu and office hours.**

*3–1 Generate Ideas* **IDEATION**



**Select Promising Ideas**

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After you brainstorm, cluster any related ideas and have the team pick their 3 favorite ideas.

Collect the post-its of the favorite concepts from the brainstorm. Include the sketches if applicable. Which ideas received the most votes?

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*3–1 Generate Ideas* **IDEATION**

Sketch to Think

Pick one of the favorite ideas from the brainstorm, and flesh out the concept through a quick sketch or two.

Ask other group members for feedback about their favorite part of your sketch as well as aspects where they see room for improvement. What did they say?



**NOTES**

**The other group members also answered the questions on the survey link. They liked the concept of survey as it was answered by all the students. These group members liked to answer the questions on topic related to café and office hours. They also suggested few improvements for the survey that consider all the factors like parking problem, the library information etc which were not considered while filling with the survey.**

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*3–2 Refine Ideas* **IDEATION**

**3–2 *Refine Ideas***

Do a Reality Check

What is at the core of your idea: what gets you excited about it? What is the most important value for your audience? What is the real need that this is addressing?

Make a list of all the challenges and barriers you are facing with your idea. What are you missing? Who would oppose the idea? What will be most difficult to overcome?

Starting from the list you created in step one of this worksheet page, describing the core values of your idea, what are other ways in which you could address the needs differently?



**VALUE, NEEDS**

**The value is that is that we are building an information board that could be installed throughout campus in order to serve different needs of the students. To identify which needs the students may have, we conducted surveys and collected information to select two main features that we are going to add on the board. The final goal is to build a prototype that could demonstrate our real product with an application that features the two main categories we identified from surveys.**

**We needed interactive robots or tablets to be installed on the places around the campus so that students can easily answer those. But financially, it’s not possible. So we are planning to design website which can be linked to a database which will collect all the responses. We can also provide link to the students so that they can even fill the survey through their mobile. I think our product would be much utilize due to how often the students interact with their mobile devices.**

**CHALLENGES, BARRIERS**

**The challenges or barriers will be like as we are designing the website, it should me more user-friendly. The student who is filling out the data should find it easy to fill all the data and should be easily able to click the options and submission of the survey.**

**NEW CONCEPTS**

**We needed interactive robots or tablets to be installed on the places around the campus so that students can easily answer those. But financially, it’s not possible. So we are planning to design website which can be linked to a database which will collect all the responses. We can also provide link to the students so that they can even fill the survey through their mobile. But What if their phones die or run out of things to check on? What if they don’t want to log in twice to their emails to find out what their professors were planning? Just one click from our infoboard and survey complete.**

*3–2 Refine Ideas* **IDEATION**



**WHO DOES IT INVOLVE, BOTH IN BUILDING AND IN USING IT?**

**This product is considered as a minuscule prototype for possible future technology such as an entrance**

**device infront of supermarket that help shoppers look for what they want more easily.**

**HOW DOES IT WORK?**

**This prototype included search box, professor information, food items and click to survey. Search box will take you to** [www.google.com](http://www.google.com) **so that users can perform search. The professor information will take you to a search directory for students to search for professor information. Food items will show you the hours and menu of each restaurants at the food court. Click to take survey will take to survey monkey to fill out the survey.**

**WHAT DO YOU HOPE TO LEARN MORE ABOUT THROUGH PROTOTYPING THIS IDEA?**

**We have created info board to save people time and increase the efficiency of the user.**

Describe Your Idea

**WHAT NEEDS OR OPPORTUNITIES DOES THE CONCEPT ADDRESS?**

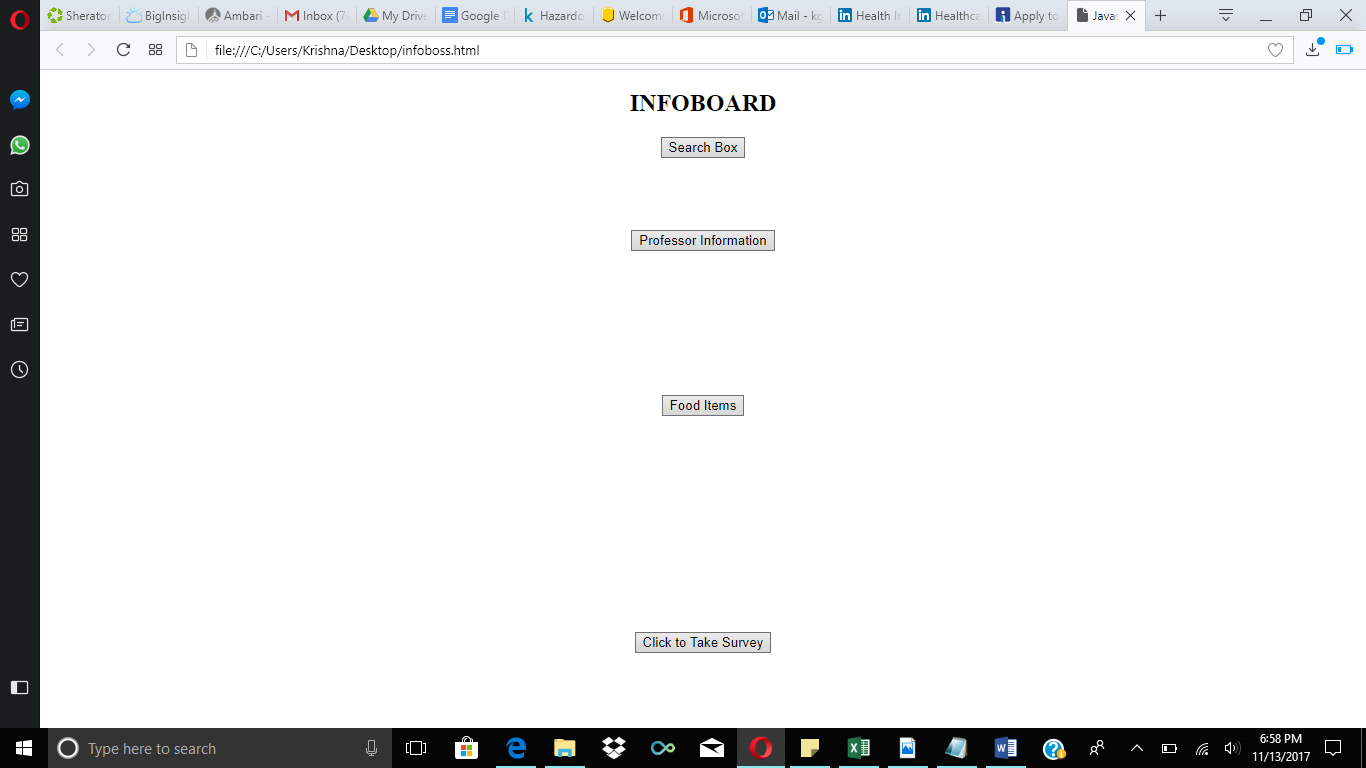
**Since this was a prototype to try out the codes and query, this prototype did not include pretty picture. After**

**this prototype, we talked with everyone in the group with everyone to make sure that this had the right**

**element that everyone agrees and liked how the sections were prompting to different information.**

Create a concept description for the idea that you would like to prototype and repeat for each idea.

**SKETCH: After we got the results from market and design research we stared to build the prototype. The first prototype is in trial and error phase to try out code, commands and queries.**



**ONE-SENTENCE CONCEPT DESCRIPTION:**

**The info board was initially designed minimize the student’s efforts to look up information without logging**

**into their school portal and to increase their engagement amongst events and activities on campus.**

**CONCEPT NAME: Having been able to frame potential opportunities as mentioned, we came up with an idea of an electronic board that could be installed around campus.**

**4**

***You have now gener- ated lots of ideas and chosen a few concepts to move forward.***

***In the fourth phase of the design process— Experimentation—you will prototype in***

***order to bring your concepts to life.***

**EXPERIMENTATION**

**WHAT’S IN THIS SECTION**

**4–1 *Make Prototypes***

**4–2 *Get Feedback***

*4–1 Make Prototypes* **EXPERIMENTATION**

**4–1 *Make Prototypes***

**Take Photos**

Since your prototype should be out in the world, take photos of it and place them here.

**SOME THINGS TO TRY**

**CREATE SEPARATE SIMPLER PROTOTYPES**

“Works like” (how the back end func-

tions), “acts like” (how the “front-end” interaction works), and/or “looks like” (how it looks).

**TRY “EXPERIENCE PROTOTYPES”**

Have people roleplay or bodystorm

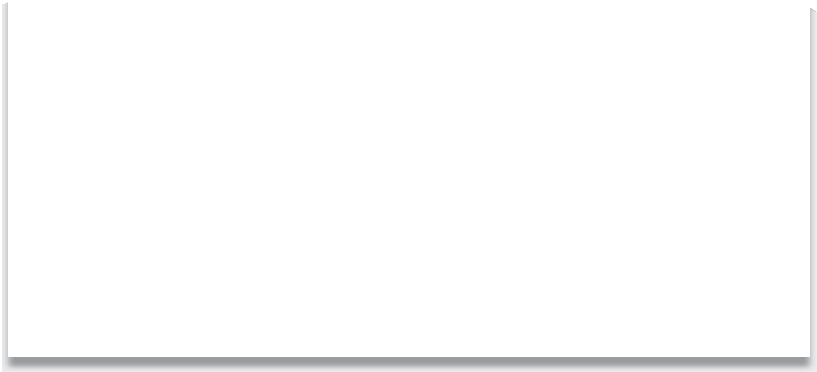
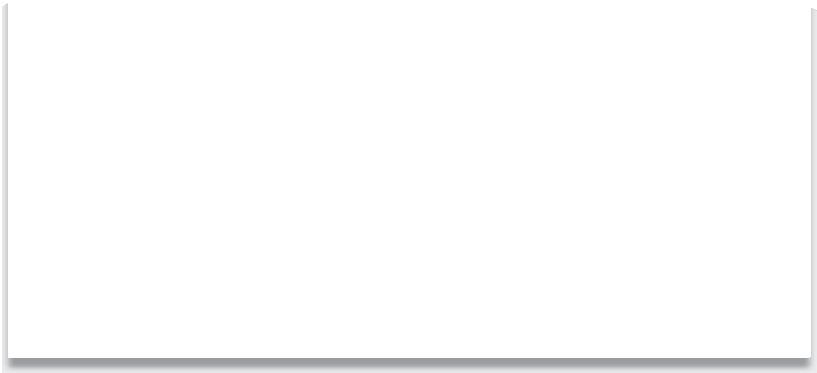
using props and prompts.

**SHRINK BIG THINGS DOWN**

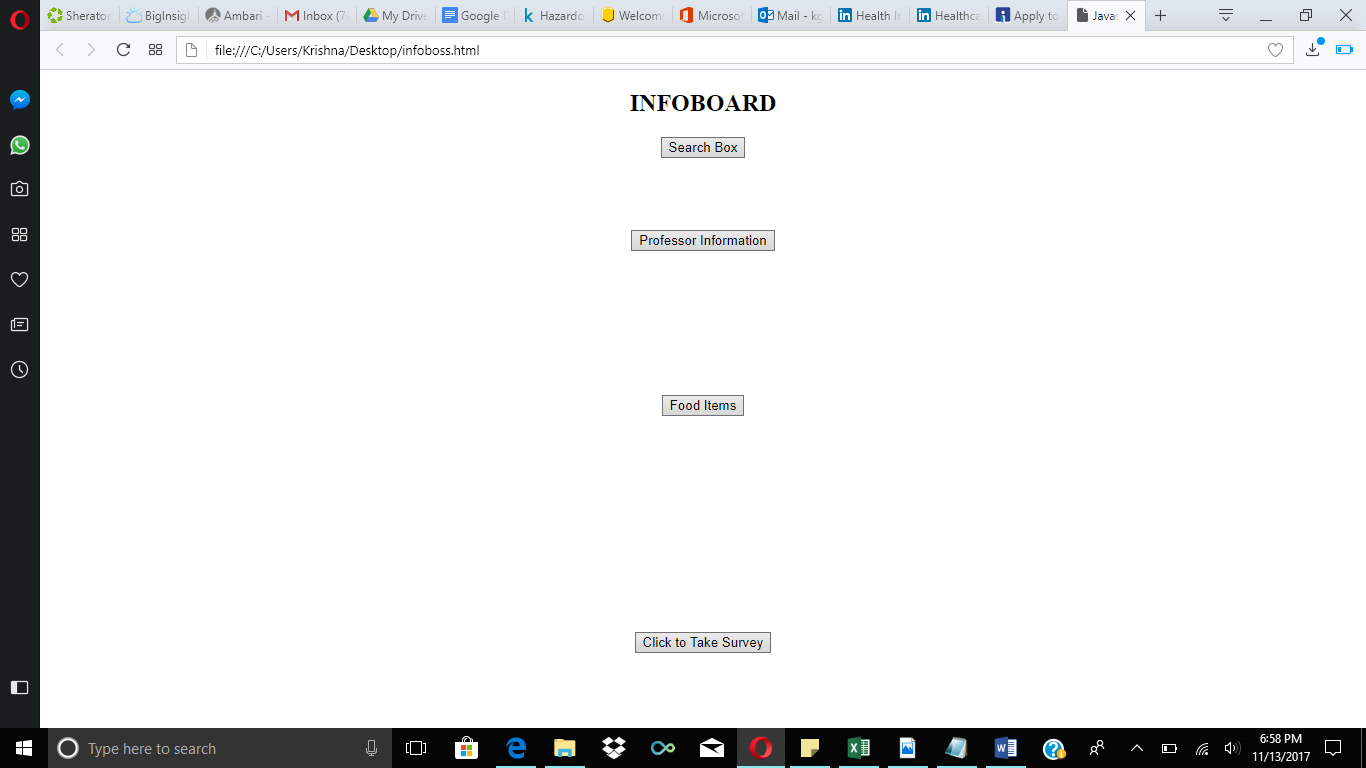
Use scale models and mockups.

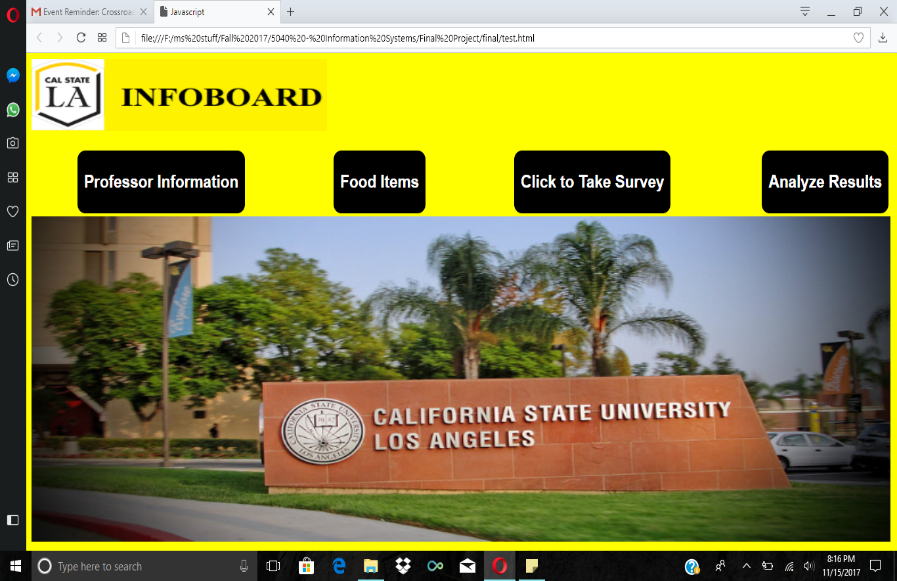
**GO 2D**

Use storyboards or diagrams.



Place photo here Place photo here





Place photo here Place photo here

*4–2 Get Feedback* **EXPERIMENTATION**

**4–2 *Get Feedback***

Identify Sources for Feedback

How do you need to test your prototype in order to receive the most relevant feedback? Can you let people experience your prototype without further explanation by leaving it in various places? Do you need to walk people through the experience of your prototypes? What will your testing session look like?

**I WILL TEST BY...**

Taking survey on “Survey Monkey” web-page. In that Survey we get 101 positive responses from different area of our schools such as library, classrooms, canteen area and so on. In that survey we take total five different questions and students need to give feedback accordingly. We mainly focus on professor’s working hours and food menus in our survey. The survey is general for all majors.

What about your idea do you need to test? What kind of feedback do you need in order to iterate and refine your idea? What is the most important question you want to ask? Are you trying

to learn whether people would participate in a new activity you designed? Are you wondering whether people will change behaviors over time because of your concept?

Select Feedback Participants

Who do you want to engage in the feedback process? Who will you learn the most from? Include people you have met during your field research as well as new participants.

**FEEDBACK PARTICIPANTS**

1. Classmates

2. All major students

3. Professors



**LIST FEEDBACK GOALS**

1. What class standing are you?

2. You are on campus and need to look for some information about something, what would it be about?

3. If you can use this device for something, what would you do?

4. If we could build the device that meet your needs, how likely would you use it? (Remember, it’s free and placed around campus!)

5. Would you recommend your friends about this app?

*4–2 Get Feedback* **EXPERIMENTATION**



Build a Question Guide !

**INTERVIEWEE NAME**

|  |  |
| --- | --- |
| **TIP**  Fill this out of this for each interview. |  |

It is likely that as you have made your idea tangible, you have developed questions about how the prototype should work, what people are interested in, how to best engage participation, etc. List any questions that have been bubbling up about your concept. During your feedback session, you’ll want to ask for specific feedback about your idea. What would you like to know more about?

**START SPECIFIC**

What are some specific questions you can ask to open the conversation?

1. What class standing are you?

2. You are on campus and need to look for some information about something, what would it be about?

3. If you can use this device for something, what would you do?

4. If we could build the device that meet your needs, how likely would you use it? (Remember, it’s free and placed around campus!)

5. Would you recommend your friends about this app?

**GO BROAD**

What are some questions that can help you start to under- stand this person’s hopes, fears and ambitions?

1. What would make you more likely to use our new device for survey?

2. How likely are you to replace your current survey method with the electronic device for survey?

3. If you are not likely to use our new product, why not?

4. Overall, how easy to use do you find the survey device?

5. What kind of information would interest you if the tablets are around the campus?

6. If there are tablets throughout the campus, would you be curious and go look what’s on it?

**PROBE DEEP**

What are some ways you might be able to dig deeper in the conversation,, to find even more of the perspective this person has?

1. What kind of information would interest you if the tablets are around the campus?

2. If there are tablets throughout the campus, would you be curious and go look what’s on it?

3. Which categories of apps do you use most frequently on campus?

4. What do you need from your tablet?

5. When doing research do you go to the library or go online?

6. How would you like to interact with this device?

7. What’s your purpose of using this new device?

*4–2 Get Feedback* **EXPERIMENTATION**



Facilitate Feedback Conversations: Capture Prompts

Use these prompts to help people give you constructive feedback, and to help you consider what parts of the experiment you should keep or change.

**KEEP**

We are going to take survey from students with the use of tablets rather than paper pen based survey system.

**KEEP**

**INCREASE**

We decided to add more features that are going to help students to our tablets such as professor’s office hours, food menus details, activities going to happen on campus, housing availability on campus and all.

**INCREASE**

**DECREASE/STOP**

Among all features we have decided to add professor’s working hours and food menus with survey option. So that one who want to look for working hours or which food he/she will going to eat very easily, also they can find working hours of professors. And one who want to do survey he/she can do it also.

**DECREASE/STOP**

*4–2 Get Feedback*



Integrate Feedback

What was the original intent of your concept? Review the feedback from your testing sessions. Based on the feedback you have received, do your earlier learnings and ideas from your research and ideation phase hold true?

**REFLECT**

An original intent of our project was to take survey from the school’s students. We did survey about five common questions to 101 students. Based on the feedback we realized to add more features to our device where students are suffered. So that we add some features to our projects such as office hours of professors and food menus.

According to your feedback, what do you think is most important to making your idea a success? How might you improve your prototype? How can you emphasize what was well received about your prototype?

**FEATURES TO ITERATE**

Our main focus was attracting more number of students for taking our survey. For that we get to know that students want more innovation in each and every situation. So we took survey of around 101 students and after that we decided to add 2 more features so that more students will be attracted by our devices.

*4–2 Get Feedback* **EXPERIMENTATION**

Identify What’s Needed

List the materials you will need to build your refined concept. Are these supplies available at your school? Will you need to purchase any new assets?

**NEED TO BUY**

No. of tablets

**AVAILABLE AT SCHOOL**

PCs

How long will it take to bring this concept to life in a more refined way? Do you need time for preparation? Does anyone need to be trained? Do you want to use an existing meeting time differently?

How much do I need to make this concept a reality?

How can I get funding or materials support?

**COST**

Around $500

**SOURCES**

Student Center Help of department chair

Who can help you realize your idea? What capabilities are you looking for? Who is invested in supporting the concept? Do you need to find someone to champion the idea?

**PEOPLE**

Pro. Arun Aryal

Neha Gupta

Vimal Kancharla

Shriatha Reddy

Neha Guli

Neel Patel



**TIME**

Hardly 2 weeks

**5**

***You now have a proto- type out in the world. Congratulations!***

***Now it’s time for the Evolution step of the***

***design process, where you’ll collect learnings and consider how you can scale and engage others to further your design solution.***

**EVOLUTION**

**WHAT’S IN THIS SECTION**

**5–1 *Track Learnings***

**5–2 *Engage Others***

*5–1 Track Learnings* **EVOLUTION**

**5–1 *Track Learnings***

**Define Success**

Review the goals you set out in the getting started section of this workbook. Reflect on how your vision maps to where you are today. How has your concept been used? Is the prototype being used by the people you intended it for? What do they appreciate about your concept?

**CONCEPT USE**

Our main focus was to attract maximum students towards our device (tablet) for doing survey. From starting with simple survey on different idea we have added two more features so that it will help students very well. So we used our concept with survey features perfectly. Students will surely like our prototype as finding particular professors office hours is somehow difficult. So students will appreciate our new features.

What does success mean to you? What do you wish to see happen with this project? Are you hoping that a large number of colleagues attend an event? What would you tell the school’s leadership in order to receive more funding? What would you like to hear a student say about your idea?

**IMPACT I AM LOOKING FOR...**

For us success means having more happy users or connecters rather than more no of users. We also look for their need towards our system. We also want their both positive and negative feedback so that we can improve our system. Our device is going to use by everyone so we are hoping that more no. of people come for survey. If we get successful and needful feedback from everyone, we will go to ask for more no. of tablets all around the campus.

How will you track and measure the success of your design solution? Will you ask people about the concept? Are you waiting for someone to approach you?



**METHOD FOR TRACKING**

The success of our design solution is the maximum people we cover for survey. We can also measure that which features are used maximum by students. We discussed our project to our profess and classmates. So we got same positive response from everyone.

*5–1 Track Learnings* **EVOLUTION**



Document Progress

Document progress of your concept. What different behaviors have you noticed since implementing your concept? Have the relationships between people changed? What comments have your received from your students or peers?

**ASSETS I NEED...**

This final prototype is built on a combination between HTML and JAVA, and it is being polished with an attractive front page for users to catch their eyes. We have put big buttons on it, and since it is used at California State University, Los Angeles, we have included the school logo. The front page includes our product name - InfoBoard on it, with the four sections that users could use, and the school logo.

What do you need to illustrate the “before/after” impact overview of the design solution? Do you need to gather images? Quotes?

**NOTES**

This prototype included “Search Box”, “Professor Information”, “Food Items”, and “Click to Take Survey” four selections for students to use. “Search box” will take you to Google.com so users can perform search. “Professor Information” will take you to a search directory for students to search for professor’s information. “Food Items” will show you the hours and menu of each restaurant at the food court. “Click to Take Survey” will take you to Survey Monkey to fill out a survey. Since this was a prototype to try out the codes and query, this prototype did not include a pretty picture, or fancy designs.

*5–2 Engage Others* **EVOLUTION**



**5–2 *Engage Others***

**PERSON RESPONSIBLE FOR FOLLOW-UP**

Our team was able to collect 100 responses after one week of doing the survey. This type of survey is primary research and we were able to collect cluster topics (according to the Design Research terminologies). The results are seminally skewed towards graduate students since we know most of them. People tend to want to know about immediate issues or information such as professors’ office hours or events around campus.

Plan Next Steps

What are all the actions that need to be taken to build your concept? Capture any open questions. Who will be responsible for each task? Who will be responsible for finding answers to any open questions?

**ACTIONS, QUESTIONS**

We are building a product and software that will serve the needs of the students on campus. Relating to the Design model above, it will be “Rip the brief”. We created a survey with five short questions on Survey Monkey. Since our group has five students, we determined to each get 20 responses from students on campus. Each of us would go to most populated areas on campus such as the cafeteria, the library, and the walkway to survey students. We also utilized social media as such Facebook groups of different student organizations. The questions are as Figure 2 below. We designed five questions to identify the student’s class standing, preference in which information they would want to look for, what they would use the InfoBoard for, and whether they would recommend it to other people.

Create a timeline which includes your deadline for evolving this concept along with any other major meetings or dates.

**TIMELINE**

For this project, we have created “InfoBoard” to save people’s time, and increase the efficiency of the users. Throughout the two months, we have had a lot of meetings, and discussed about every detail trying to make our product the best with the time given. Our product not only saves student’s time, but can also convenient professors, and even first time visitors that come to the campus can benefit from it. Our final prototype might not be perfect, but if we have given more time, we will definitely have our product at a hundred percent.

*5–2 Engage Others* **EVOLUTION**

Pitch Your Concept (optional)

**TIP**

Tell a brief and engaging story, focusing on the most important aspects of your concept.

**!** What story will you tell? What inspired your idea and how does it respond to the needs you uncovered? Why is this idea valuable to the various people involved?

Who are you pitching to? Create a provocative statement

for your idea that will get your audience excited about the opportunities you see. Frame it as “What if…?”

Use this method when you are trying to gain support from others in order to bring your idea to life.



What are you asking for from your audience? Clarify your list of needs.

**STORY, INSPIRATION, VALUE**

Primary research: We each came up with 10 to 15 questions and one member conclude them to generate a short 5 question survey at the end. We created a paper and an online survey form. Since the purpose of primary research is to collect the data on our own, all of the group members had to talk to different students to gather information. At the end, we had 100 responses and generated them on Survey Monkey to have a better visualization.

Cluster topics: The questions were to determine the student’s class standing, what type of information they would want to look up, what type of activities they would like to use our electric board for, and whether they would recommend their friends to use it.

**WHAT IF...**

We spent a classroom session to brainstorm about ideas. At the beginning, we came up with the plan to create a Facebook page and attempt to connect alumni and invite them to visit campus. After re-considering it, we thought that having an original idea and product would help our group stand out better. Hence, we came up with the idea of writing our own websites and create a product that has not yet appeared on campus.

**NEEDS**

1. What class standing are you?

2. You are on campus and need to look for some information about something, what would it be about?

3. If you can use this device for something, what would you do?

4. If we could build the device that meet your needs, how likely would you use it? (Remember, it’s free and placed around campus!)

5. Would you recommend your friends about this app?

*5–2 Engage Others* **EVOLUTION**

Build Partnerships (optional)

**!**

**TIP**

**BENEFITS**

This prototype is to make everything more convenient for students on campus, saving their time, and not increasing the awkwardness of talking to people.

What are you asking from them? Consider adapting your pitch to speak directly to this audience. Why would they be interested in helping? How do both parties hope to benefit from a partnership?

Which organizations or individuals have capabilities you are

missing in order to realize your idea? What is your relationship with them? How can you reach out to them?

Use this method when you need the resources or capabilities from others to realize your idea.



**WHAT IF...**

We created a survey with five short questions on Survey Monkey. Since our group has five students, we determined to each get 20 responses from students on campus. Each of us would go to most populated areas on campus such as the cafeteria, the library, and the walkway to survey students. We also utilized social media as such Facebook groups of different student organizations. Questions are as Figure 2 below. We designed five questions to identify the student’s class standing, preference in which information they would want to look for, what they would use the Info Board for, and whether they would recommend it to other people.

**NOTES**

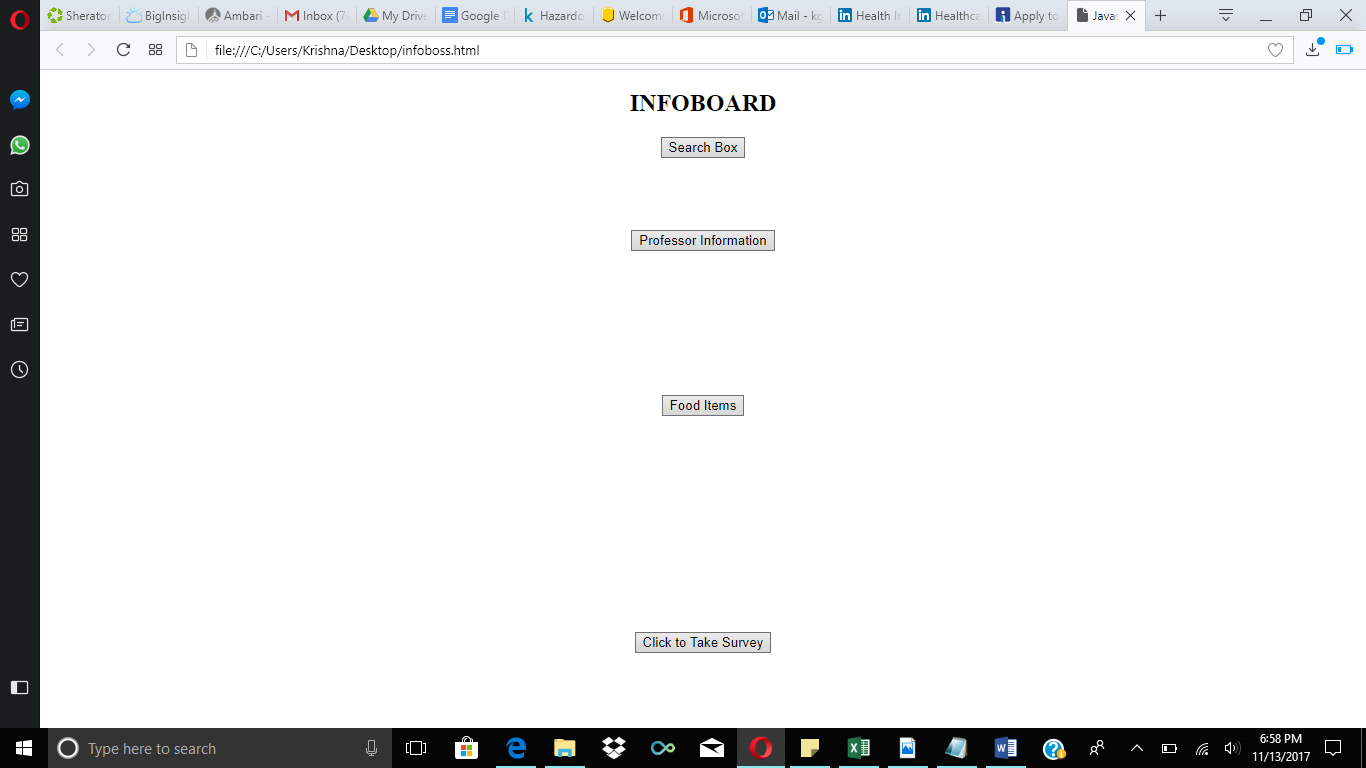
**NOTES**

*5–2 Engage Others* **EVOLUTION**

Share your Story

Outline the presentation you’d like to give to share your story. Consider these prompts...

What was the initial dream/gripe that kicked off this challenge?



**!**

**TIP**

What needs did you learn about?

Increased efficiency.

Plan and manage time.

Listening to and respecting others idea.

Increases collaboration and allows brain storming

Encourages communication between team members.

Use this method when you want to share your design experience and solution with a broader audience.



What needs did you learn about?

Increased efficiency.

Plan and manage time.

Listening to and respecting others idea.

Increases collaboration and allows brain storming

Encourages communication between team members.

Who was part of the team or contributed to the project?

Krishna Ghorpade,

Divya Pakhale,

Songyun Qian,

Hai Anh Le,

Jeel Joshi

What was the most surprising thing you learned while looking for inspiration?

The initial phase of thinking and the final output was totally different.

What partners did you integrate?

Increased efficiency.

Plan and manage time.

What partners did you integrate?

Listening to and respecting others idea.

Increases collaboration and allows brain storming

Encourages communication between team members.

*5–2 Engage Others* **EVOLUTION**



Remember your process

Concept

Feedback

Use photos to illustrate where possible.

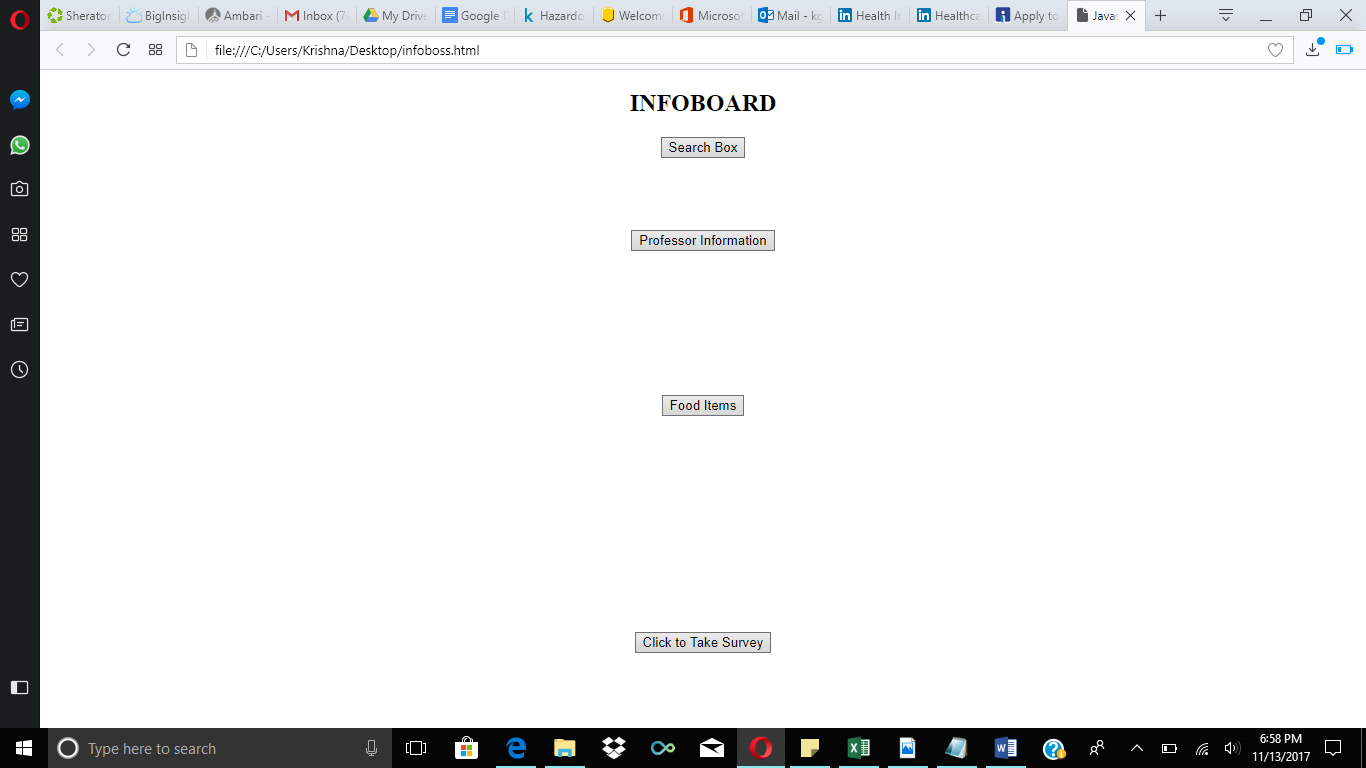
What was the most absurd brainstorm idea?

1. You need ideas.
2. You have a problem to solve.
3. You are looking to improve creative thinking.
4. You want your [team](https://coschedule.com/professional-marketing-teams) to work together better.

Share a few of your initial concepts or prototypes.

What kind of feedback did you receive on these concepts?

Concept



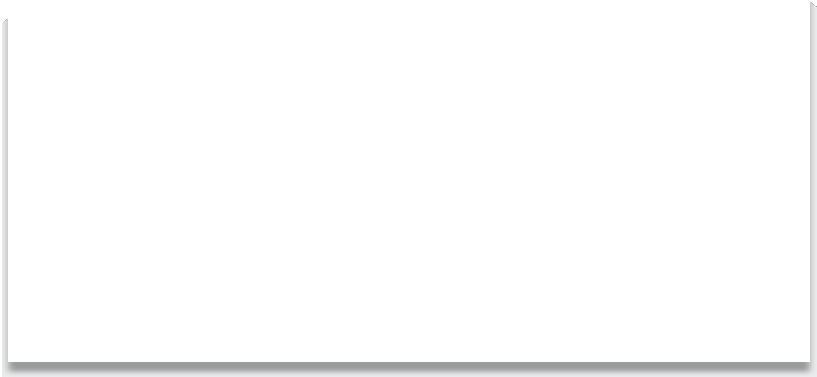
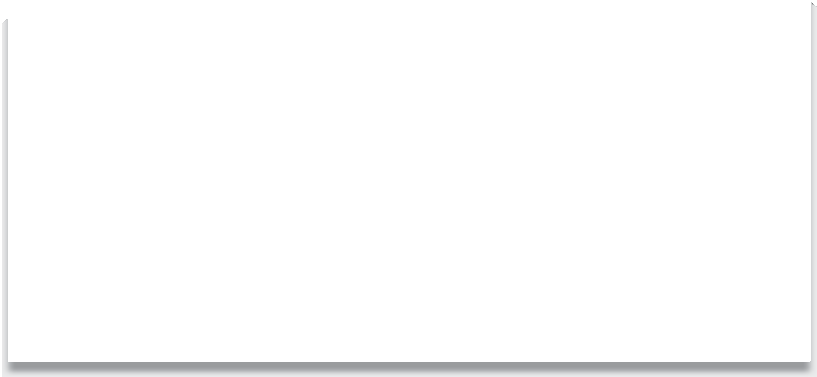
Feedback

Concept

Feedback

Since this was a prototype to try out the codes and query, this prototype did not include a pretty picture, or fancy designs

*5–2 Engage Others* **EVOLUTION**

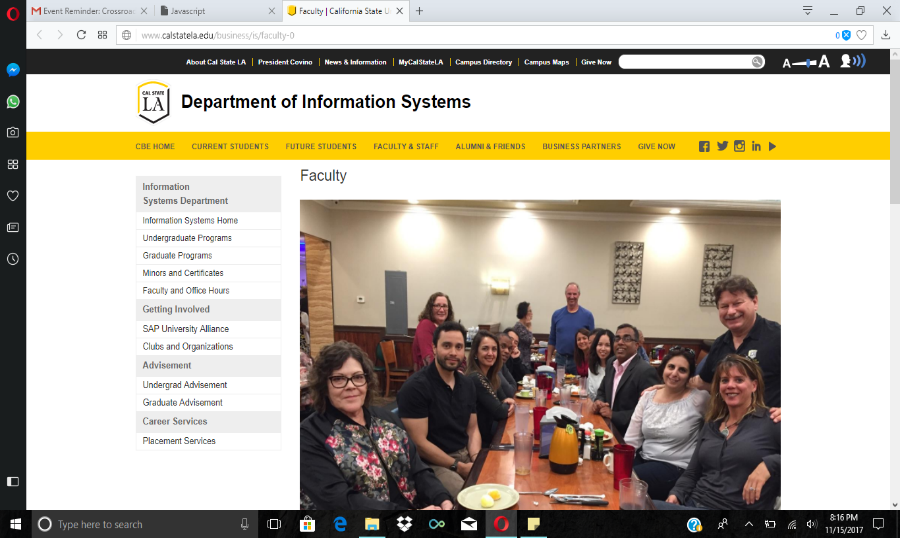


Place photo here

Show us where you’ve gotten

Use photos to illustrate where possible. Share your concept.

Place photo here



For this project, we have created “InfoBoard” to save people’s time,

and increase the efficiency of the users. Throughout the two months,

we have had a lot of meetings, and discussed about every detail

trying to make our product the best with the time given.

Place photo here

**HOW HAS YOUR PROTOTYPE BEEN SUCCESSFUL?**

**CAPTURE QUOTES YOU’VE HEARD RELATED TO THE DESIGN AND/OR IMPACT YOU’VE SEEN AROUND THE STUDENTS/SCHOOL/CLASSROOM.**

*5–2 Engage Others* **EVOLUTION**

Build a Community

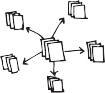
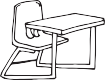
Advancing your understanding of Design Thinking is best done through repeatedly undergoing the process with new design challenges. Having a network of people you can bounce ideas off is essential to moving your thinking forward. Who will you invite to your design network?

**DESIGN MEETING TIMES**

How often will you meet? How long will your meetings last? Where will you meet? What dynamic do you want to establish? What will you discuss?

Now that you’ve completed one challenge, it’s time to start the process over again. Define a new challenge and work your way through the process. Refer to the Design Thinking for Educators Toolkit to bring more depth to your work!

What design challenge will you tackle next?



Who you will meet?

##### Current students from the university and professor who could give us very

##### detailed information on what they want and what they don’t want for the app.

**CHALLENGE QUESTION**

**WHAT KIND OF CHALLENGE IS THIS? (CIRCLE ONE)**

When?

How often?

**CURRICULUM**

**SPACES**

**PROCESSES AND TOOLS**

**SYSTEMS**

**ABOUT THE TOOLKIT:**

At IDEO, we’ve been using similar processes, methods and tools for years in tackling some dauntingly complex challenges. More often than not, we’ve experienced how Design Thinking helps to get to the next step. That’s why we are excited to see how it can impact the world of education. Teachers at Riverdale Country School are starting to use design process

to address challenges in their classrooms and schools, and together we’ve created this toolkit in order to share these processes more broadly.

Riverdale

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Riverdale Country School is a Pre-K through Grade 12 independent school in New York City.



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***Design Thinking for Educators***