



# USER-CENTERED DESIGN CHARRETTE

---

WORKSHOP TOOLKIT

This is an export of a living document in development



# CONTENTS

---

<b>Introduction</b>	<b>2</b>
Human Centered Design & Engineering (HCDE)	2
HCDE K-12 Outreach	2
The UCD Charrette	2
<b>Planning the Workshop</b>	<b>3</b>
Picking the Right Protocol	3
Gathering Workshop Supplies	4
<b>Running the Workshop</b>	<b>5</b>
Get Started	5
Ideate	6
Brainstorming Users	7
Alternative To Brainstorming Users	8
Brainstorming User Needs	9
Create	10
Storyboarding	11
Interaction Flow	12
Interface Design	13
Prototype	16
Prototyping	17
Wrap-up	18
Presentation	19
<b>General Tips</b>	<b>20</b>
Moderation Tips	20
<b>Customizing the Workshop</b>	<b>21</b>
Customize the Design Challenge	21
Customize the Type Of Technology of the Design Challenge	21
Customize the Workshop Duration	21
<b>Examples</b>	<b>22</b>

# INTRODUCTION

---

“Putting people first, HCDE-ers research, design, and engineer interactions between humans and technology.”

## HUMAN CENTERED DESIGN & ENGINEERING (HCDE)

Human Centered Design & Engineering (HCDE) is a program offered at the University of Washington. Students and faculty are advancing the research and design of technologies by using innovative techniques to study human activity and develop meaningful information sociotechnical systems.

## HCDE K-12 OUTREACH

The University of Washington's Department of Human Centered Design & Engineering regularly works with regional K-12 schools on activities designed to engage pre-college students and their teachers in the field of human-centered design. Our outreach activities include conducting user-centered design workshops in high school and middle school classrooms, hosting students for workshops on the University of Washington campus, and professional development for teachers.

## THE UCD CHARRETTE

Middle and high school students experience the user-centered design process through a User-Centered Design (UCD) Charrette. UCD charrette is a fast-paced design activity where students ideate users, user needs, and scenarios; develop an interaction flow; and design a technology that matches the interaction flow.

# PLANNING THE WORKSHOP

## PICKING THE RIGHT PROTOCOL

The Charrette workshop can be conducted for different durations and audiences. Here are some suggestions.

Activity	Protocol 1 (~50 min.)	Protocol 2 (~120 min)
<b>Get Started</b>		
Welcome! What is HCDE/UCD?	5 min.	7 min.
The UCD Charrette The Design Challenge	2 min.	8 min.
<b>Ideate</b>		
Brainstorming Users	Pre-assigned	5 min.
Brainstorming User Needs	Pre-assigned	5 min.
<b>Create</b>		
Storyboarding	Pre-assigned	10 min.
Interaction Flow	5 min.	10 min.
Interface Design	8 min.	15 min.
<b>Prototype</b>		
Tutorial	2 min.	2 min.
Prototype (on the app)	10 min.	15 min.
<b>Wrap-Up</b>		
Presentations	10 min.	25 min.
Reflection (for HCDE)	3 min.	5 min.
Wrap-up	2 min.	5 min.

(for HCDE)		
------------	--	--

## GATHERING WORKSHOP SUPPLIES

These are necessary supplies for each workshop.

[image]

### **2 Packages of Post-it notes**

Half a stack per person (or 2 per group of 3 people). These will be used for brainstorming steps.

[image]

### **(Optional) 1 Tablet / Smartphone per Table with Marvel app installed (+ chargers)**

Marvel is a prototyping tool we use in the workshop. Just a friendly reminder to remember to bring chargers and make sure tablets are charged the night before!

[image]

### **5 Copies of Smartwatch / Tablet paper templates**

Print out 3-4 copies/person (or 9-12 per group of 3 people) of templates for tablets or smart watches. These will be used for the prototyping step.

[image]

### **1-3 Sheets Large Poster Paper**

Or 1 stack of regular printer paper if not available

[image]

### **4 Markers per group**

No ball pens or pencils, please.

[image]

### **Laptop (+ charger)**

Laptop is used by presenter to display powerpoint.

[image]

### **(Optional) Gong (or bell)**

Gong is used to get student attention after each workshop activity. You may use something else.

# RUNNING THE WORKSHOP

---

“Human-Centered Design is a problem solving process from the perspective of how it will be understood and used by a user.”

## GET STARTED

The workshop begins with a brief definition of user-centered design (or HCDE) to clarify the purpose of the workshop and the lesson. For high school classes you can either use the definition above or show our HCDE promo video. The video might be more appropriate for students who are thinking of applying to college in the near future, than for younger, middle school students.

### **Link to the HCDE Promo Video:**

<https://www.youtube.com/watch?v=VgRkJbweFps>

If undergraduate students are running the Charrette, they should introduce themselves and say a little about their background (e.g. where they grew up and went to school). For high school classrooms, presenting students could provide a brief introduction of what they like about HCDE and why they chose this major.

After the introduction, the workshop segues into the design challenge. Briefly define what a UCD Charrette is and explain what students are going to make (the design challenge). Provide necessary background information (e.g. How smartwatch works when the challenge involves Smartwatch App design), and ask if students have any questions before proceeding.

## IDEATE

---

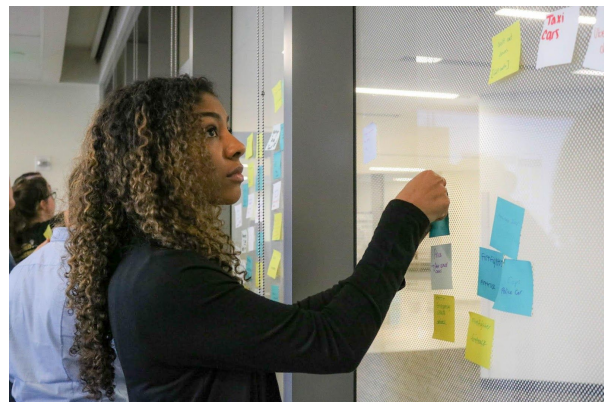
Explore and identify design opportunities.

In order to create a solution tailored to the target users, we first need to decide for whom and what we are designing. Students in the workshop's Ideation phase will brainstorm users and their needs.

### THIS PHASE INCLUDES:

Brainstorming users

Brainstorming user needs



IDEATE

DESIGN

PROTOTYPE

WRAP-UP





## BRAINSTORMING USERS

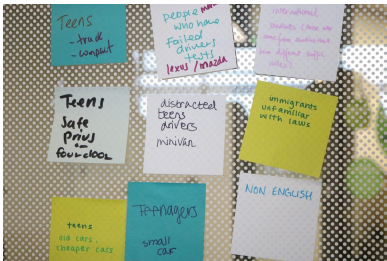
In our UCD workshop, types of users aren't just humans; they can be animals, plants, and even fictional characters. (So encourage students to be creative!)

## MATERIALS

- Split up post-it packs, so each student has several
- Markers
- Space to spread out post-its

## STEPS

- 01** | Each person gets a bundle of post-it notes
- 02** | Write down a user type on a post-it note until the brainstorming session runs out
- 03** | Gather the user post-it notes in one space
- 04** | Group the post-it notes and label the group. Repeated users can be stacked together
- 05** | Pick one user group wants to design for



## FACILITATION & NOTES

### 1. Quantity Over Quality

This phase is all about exploring as many possibilities as possible. Encourage students to generate as many ideas as possible, and support creative ideas.

## 2. Use Markers

Using markers will help avoid focusing on the details.

### 3. One User Per Post-It

One user per post-it will make easier to group them.

#### 4. *Be Creative!*

Students may be tempted to follow the examples that you provided. Encourage them to think of other user types as well.



## ALTERNATIVE TO BRAINSTORMING USERS

**Predefined Users:** If the time available for the Charrette is too short, e.g. 50 minutes, you can replace this step by providing each group of students a user type.

### STEPS

- 01 |** Print out or write the user types, one per flash card.
- 02 |** Come up with a list of predefined user types. Preferably give each group different users so that groups design different types of applications across the classroom.
- 03 |** Students like to be able to choose a user type, so come up with two options for each group, and ask them to choose one on the spot. Do not give them much time to choose, because that can lead to extensive discussions that can be costly if there is not enough time available for the Charrette.
- 04 |** Leave each group with the flash card of the user type they chose.



## BRAINSTORMING USER NEEDS

Once students pick a user type they want to design for, they will explore different activities their users might do or things they might need.

## MATERIALS

- The post-its from the previous step
- Another bundle of post-its
- Markers
- Space to spread out post-its



## STEPS

- 01 | Each student gets another bundle of stick-its.
- 02 | With the chosen user type in mind, students write down as many user needs as possible.
- 03 | When the brainstorming session is over, each group decides which user need to design for.

## FACILITATION & NOTES

### 1. Help Decide User/Need

Help the groups of students who have trouble deciding on a user/need.

## 2. One Post-it at a Time

Encourage students to pick only one post-it and put the others aside.

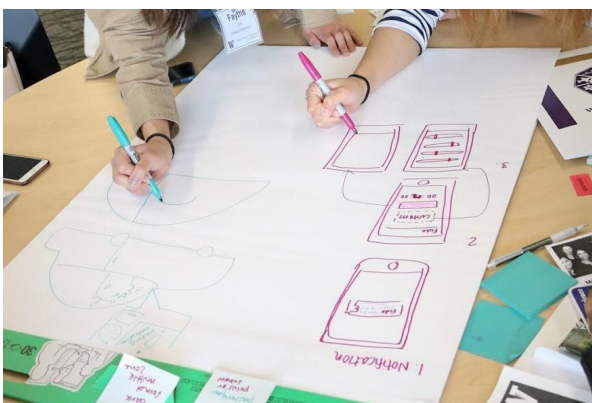
## CREATE

Ideate solutions for the users and their needs.

Once students have decided who to design for and what to design, they ideate possible solutions.

### THIS PHASE INCLUDES:

Storyboarding  
Interaction Flow  
Interface Design



IDEATE

CREATE

PROTOTYPE

WRAP-UP



## STORYBOARDING

Storyboarding involves students putting themselves in the user's shoes. It helps define when the user will need the students' design and how they will use it.

### MATERIALS

- A large empty sheet of paper
- Markers

### STEPS

- 01 |** Each group gets a large empty sheet of paper. Keep the user and user need post-its visible.
- 02 |** Draw out a visual story about:
  - 1) Who the user is
  - 2) When the user will use the design
  - 3) How the user will interact with the design
  - 4) What the outcome of interaction is

### FACILITATION & NOTES

#### 1. Minimum of 4 Storyboard Panels if Possible

It's okay if they do more, but encourage them to create at least 4 panels. A helpful template might be:

- The Background: Who is the user?
- The When: When does the user need the design?
- The How: How does the user interact with the design?
- The Result: What is the outcome? How does the design resolve the user's need?

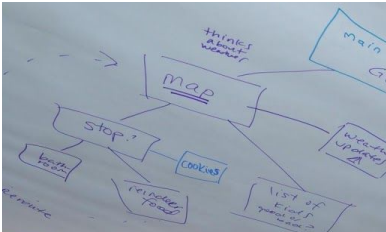


## INTERACTION FLOW

Interaction flow is a step-by-step diagram that depicts how a user gets through a task using an interface. It also outlines what interface or design should be made.

## MATERIALS

- A large empty sheet of paper
- Markers



## STEPS

- 01 | Each group gets a new empty sheet of paper.
- 02 | Based on the scenario that students created, they draw out steps of how the user will interact with the design.

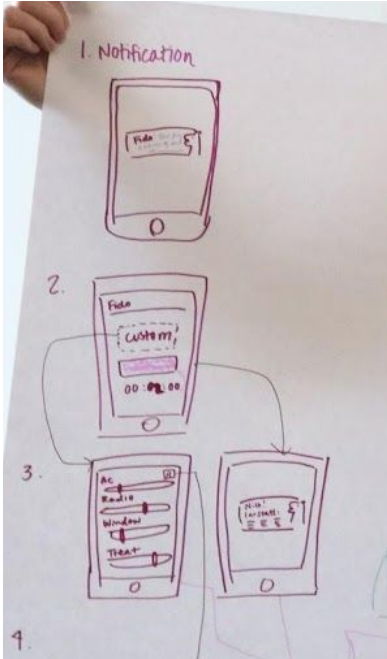


## INTERFACE DESIGN

Students sketch out screens for the activity to match the interaction flow.

### MATERIALS

- Printed device screen template (tablet and smartwatch screen templates are available on the next pages)
- (If templates are not available) a large empty sheet of paper
- Markers



### STEPS

- 01 |** Based on the interaction flow, students draw out screens that users will see to complete their tasks.
- 02 |** Students draw arrows to show the interaction and how screens are related.

### FACILITATION & NOTES

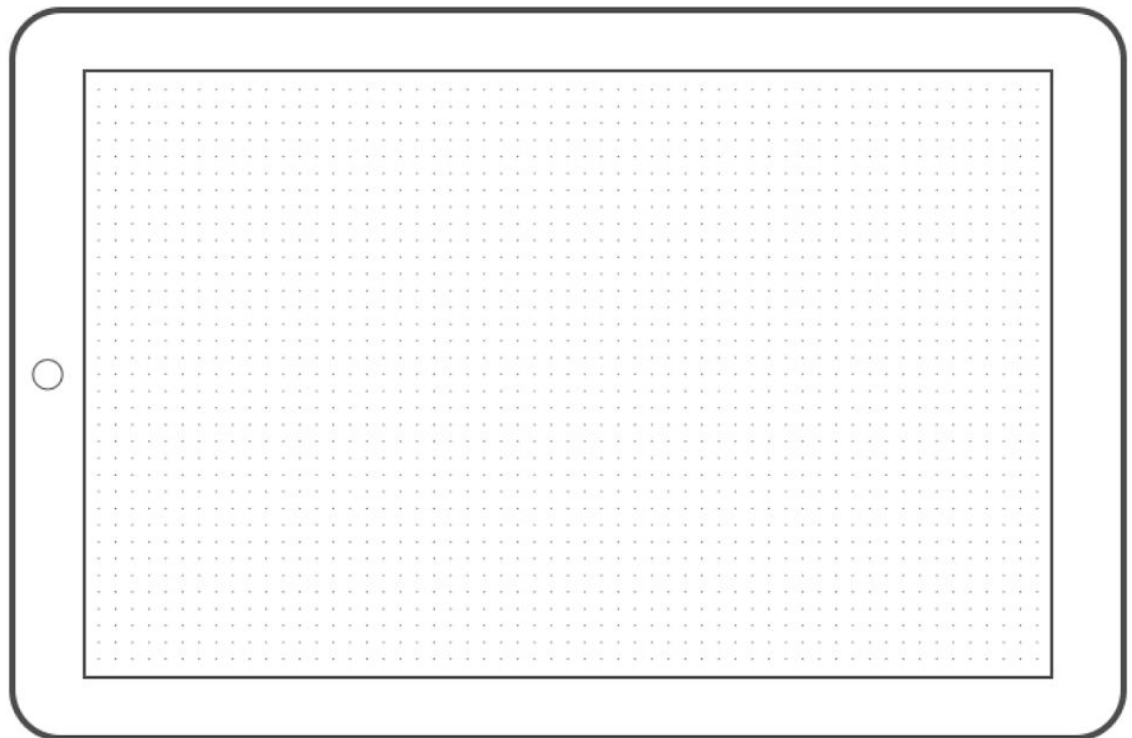
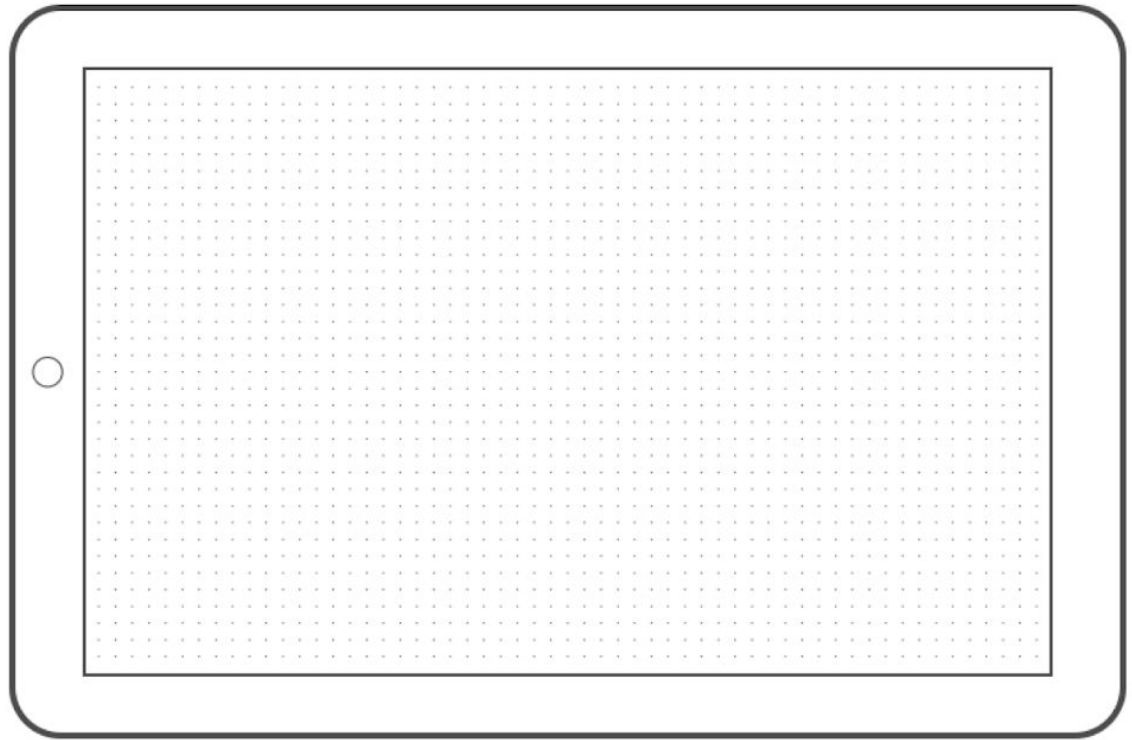
#### 1. Different Colors for Interface and Interaction

To help better visualize, use different colors when drawing interfaces and interaction (arrows).

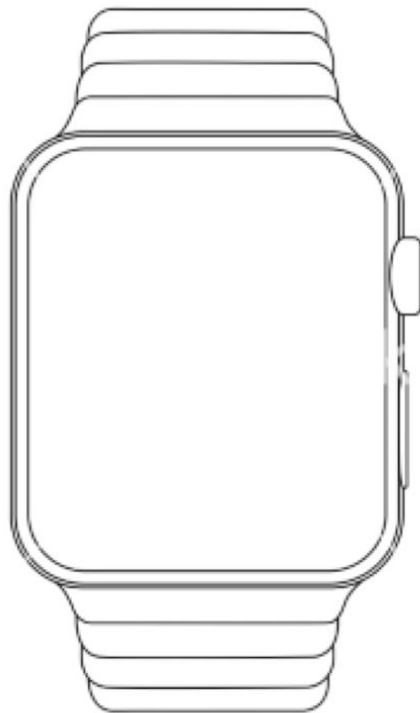
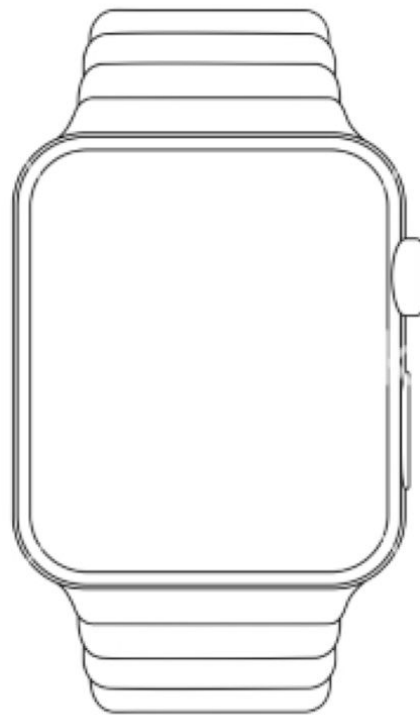
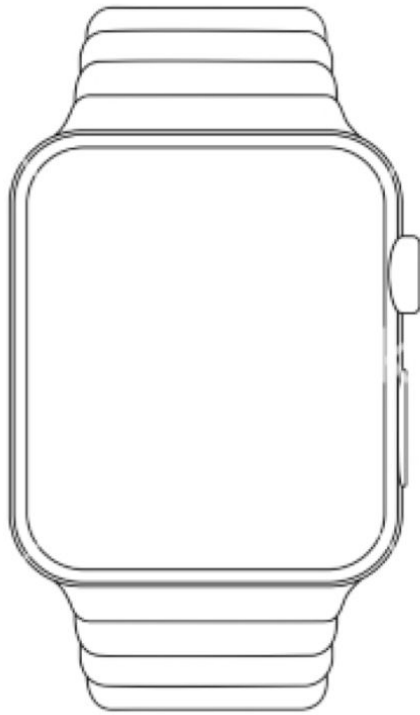
#### 2. Emphasize that Drawing Skills aren't Important

Remind students that their drawing skills aren't being judged, and rough sketches are better than perfect ones.









## PROTOTYPE

---

Test design ideas and learn.

The prototype phase helps students test their design idea. In our workshop, students use the Marvel application on provided tablets.

### **THIS PHASE INCLUDES:**

Prototyping

IDEATE

CREATE

PROTOTYPE

WRAP-UP



## PROTOTYPING

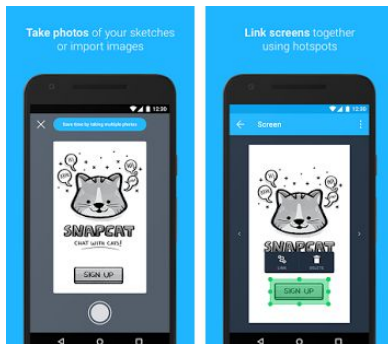
Students will use Marvel App to test their design idea.

### MATERIALS

- Tablets with Marvel App installed
- The interface design sketches

### STEPS

- 01 |** Using the Marvel App, take photos of each screen sketch.
- 02 |** On the app, create hotspots (places where an interaction will occur) on screens.
- 03 |** (If time), try the prototype with other students. Give them a scenario and observe how they interact the prototype. What went well? How can the design be improved?



(Image source: APKMonk)

### FACILITATION & NOTES

#### 1. (Optional) Video Tutorial

You can show the short tutorial video.

**Video Link:** <<< link >>>

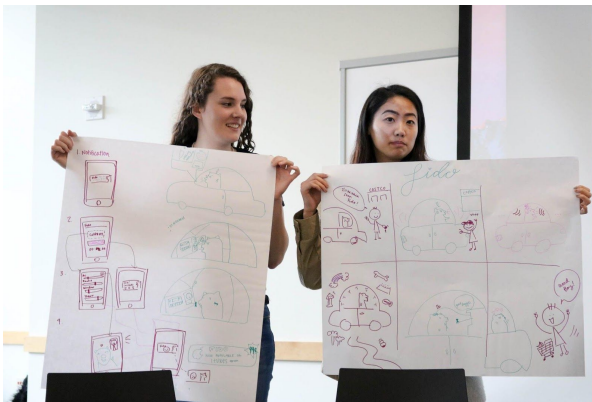
## WRAP-UP

Share your project with others!

What did you learn? What was your (least/most) favorite parts?  
Share and get inspired by each other's ideas.

### THIS PHASE INCLUDES:

Presentation



IDEATE

CREATE

PROTOTYPE

WRAP-UP





## PRESENTATION

Each group will share their design with other students.

### MATERIALS

- Student's work
- Document camera
- Post on Google powerpoint and show projector

### STEPS

**01 |** Students have 2 minutes to prepare a 1-minute presentation.

**02 |** Each group takes turns to present the following:

- 1) (If students did the Ideation phase in the workshop) the user and their need
- 2) User scenario
- 3) How their design works



### FACILITATION & NOTES

*1. Engage, Support, and Celebrate!*

Facilitate a supportive environment for students to easily share their work.

# GENERAL TIPS

---

## MODERATION TIPS

- 1) Watch the progress of each group and help out when needed.
- 2) If enough moderators are available, each moderator should stick to one or two groups throughout the workshop (to avoid students having to repeat themselves to different moderators)
- 3) To get student attention: say something, pause for them to look up, continue on with the instructions (so that students do not talk over you)
- 4) Focus on explaining the UCD process (e.g. why does this step matter?)
- 5) Practice!

# CUSTOMIZING THE WORKSHOP

---

Depending on the participants' demographics, you can customize your template to better engage them with the workshop.

## CUSTOMIZE THE DESIGN CHALLENGE

Pick a topic that is relevant, interesting and accessible to the workshop participants. Changing the design challenge can be essential in different communities and cultural contexts.

## CUSTOMIZE THE TYPE OF TECHNOLOGY OF THE DESIGN CHALLENGE

### **Smart Watch**

Students envision applications developed for smart watches. Make sure that they are familiar with the concept. For the smartwatch technology, the design challenge should be suited to this device.

### **Tablet Applications**

Students prototype applications for tablets. This is particularly convenient if tablets are available during the workshop.

### **Smart Cars**

Students envision smart car interfaces. This enables students to think about how familiar vehicles (e.g. buses, bikes) can incorporate technology, and how to design more unfamiliar vehicles (e.g. space vehicles like the Mars Rover)

## CUSTOMIZE THE WORKSHOP DURATION

Three default workshop durations are available: 50 minutes, 70 minutes, and 80 minutes. Protocols for each duration are available in the "Choosing the Right Protocol" section.

# EXAMPLES

---