Unit 4 - The Design Process ('21-'22) Resources

Lesson 1: Designing With Empathy

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides

For the students

- Designing with Empathy - Activity Guide
- Problem Solving Process with Empathy - Image

Prep

- Print a copy of the activity guide for each student (or prepare to distribute the document digitally).

Lesson 2: Understanding Your User

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides

For the students

- Profile 1 - User Profile
- Profile 2 - User Profile
- Profile 3 - User Profile
- Profile 4 - User Profile
- Reacting as your User - Activity Guide

Prep

- Print out enough user profiles for all students, ensuring as much variety as possible
- Print an activity guide for each user
- Prepare prompt questions for warm up exercise
- Label four corners of the room as A, B, C, and D
- Arrange room in table groups of 4, and place a number on each table group (1, 2, 3,...)

Lesson 3: User Centered Design Define and Prepare

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides

For the students

- The Design Thinking Process - Video
- User Centered Design (Define & Prepare) 2021 - Activity Guide

Prep

- Ensure you have plenty of sticky notes, pens and large poster paper for students to work on
- Set up groups with preferably 3 students each

Lesson 4: User Centered Design Try and Reflect

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides

For the students

- User Centered Design (Try & Reflect) 2021 - Activity Guide

Prep

- Return the activity guide from yesterday to students
- Make copies of the Try & Reflect activity guide - one for each group

Lesson 5: User Interfaces

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides

For the students

- User Interface Screens - Resource
- User Testing (Computer) - Activity Guide
- User Testing (User) - Activity Guide

Prep

- Print one copy of the User Interface Screens activity guide for each pair of students
- Print one copy of the User Experience (computer) activity guide for each pair of students
- Print one copy of the User Experience (user) activity guide for each pair of students
- Cut out the UI Screens or provide scissors for students to do so themselves

Lesson 6: Feedback and Testing

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides

For the students

- Improve a Screen - Activity Guide
- Prototype Feedback - Resource
- User Interface Screens - Resource

Prep

- Either print one copy of the User Interface Screens resource for each group, or be prepared to display the screens at the front of the classroom
- Print one copy of the Prototype Feedback resource for each group. If possible, cut into strips ahead of time
- Print one copy of Improve a Screen for each group. If possible, print single-sided so students can divy up the activity guide.
- Colored pencils or markers for the paper prototypes

Lesson 7: Identifying User Needs

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides

For the students

- Example User Interviews - Resource
- User Interviews - Activity Guide

Prep

- Print one copy of User Interview activity guide for each student
- Print a copy of the Example User Interviews for each group
- Gather poster paper and brainstorming materials (pens, sticky notes, etc)

Lesson 8: Project - Paper Prototype

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides

For the students

- Computer Science Practices - Reflection
- Paper Prototype - Student Checklist
- Paper Prototype Project Guide
- Paper Prototypes - Rubric

Prep

- Print one copy of the project guide for each student
- Print one copy of the rubric for each student
- 6 notecards for each student
- Drawing supplies (colored pencils, markers, rulers, etc.)
- Poster paper for each student

Lesson 9: Designing Apps for Good

Resources

For the teachers

- App Design Kickoff - Exemplar
- CSD Unit 4 - The Design Process - Slides
- Example Apps for Good

For the students

- App Design Kickoff - Activity Guide

Prep

- Assign teams of 3-4, ideally based on similar interest in an app topic
- Print one copy per team of the activity guide
- Choose 1-3 of the apps from the example apps to share with the class
- Arrange classroom seating for pre-selected teams of 3-4 students
- Put out sticky notes for each team

Lesson 10: Market Research

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides

For the students

- Market Research - Activity Guide

Prep

- Arrange classroom seating for teams of 4-5 students
- Print one copy per team of the activity guide

Lesson 11: Exploring UI Elements

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides

For the students

- Explore UI Elements - Activity Guide

Prep

- Print a copy of the activity guide for each team
- (Optional) Preview Lesson 14 - Design Mode in AppLab to help answer questions from students about UI elements in AppLab.

Lesson 12: Build a Paper Prototype

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides
- Design Mode - Resource
- Design Mode Elements - Resource

For the students

- Paper Prototype Planning - Activity Guide
- Phone Paper Prototype

Prep

- Prepare 3x5 index cards (or copies of the prototype template), sticky notes, colored pens and pencils, scissors for each team
- Print a copy of the activity guide for each team

Lesson 13: Prototype Testing

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides

For the students

- Paper Prototype User Testing - Activity Guide
- User Test Cases - Activity Guide
- What's For Lunch Testing - Video

Prep

- Either have other people lined up to test each team's paper prototypes, or schedule enough time for teams to test each other's prototypes
- Print a copy of the Paper Prototype User Testing activity guide for each team
- Print a copy of the User Test Cases activity guide for each team

Lesson 14: Design Mode in App Lab

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides
- Design Mode - Resource
- Design Mode Elements - Resource

For the students

- Intro to Design Mode - Video (Download)
- Model Screen Design - Resource
- Screen Design (2021) - Activity Guide
- Screen Ownership (2021) - Activity Guide

Prep

- Print one copy of the Screen Ownership activity guide for each group
- Print one copy of the Screen Design activity guide for each student
- (Optional) Print one copy of the Model Screen Design activity guide for each group

Lesson 15: Build a Digital Prototype

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides

For the students

- Screen Design (2021) - Activity Guide

Prep

- Have extra copies of the Screen Design Activity Guide available for students

Lesson 16: Events in AppLab

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides

Prep

There is no prep for this lesson.

Lesson 17: Linking Prototype Screens

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides
- Changing Screens - Resource
- Importing Screens - Resource
- Multi-Screen Apps - Resource
- Responding to User Input - Resource

Prep

There is no prep for this lesson.

Lesson 18: Testing the App

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides

For the students

- Digital Prototype User Testing - Activity Guide
- User Test Cases - Activity Guide

Prep

- Print one copy of the activity guide for each student
- If possible, have outside users available to test the teams' apps prior to this testing day

Lesson 19: Bugs and Features

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides

For the students

- Bugs and Features - Activity Guide

Prep

- Print one copy of the activity guide for each team
- Set out sticky notes for each team
- (Optional) Have poster paper or a large whiteboard area prepared for each team

Lesson 20: Updating Your Prototype

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides

For the students

- Updating Your Prototype - Activity Guide

Prep

- Print one copy of the activity guide for each team
- (Optional) Prepare poster paper or a large whiteboard space for each team

Lesson 21: Project - App Presentation

Resources

For the teachers

- CSD Unit 4 - The Design Process - Slides

For the students

- App Presentation - Rubric
- App Presentation - Exemplar
- App Presentation - Student Checklist
- App Presentation Template - Slide Deck
- Computer Science Practices - Reflection

Prep

- Determine how much time each group has to present. Typically this is 8-10 minutes per team, but remember to leave time for transitioning between teams
- Create a copy of the presentation template slide deck for each team
- Print one copy of the rubric for each team.

Lesson 22: CS Discoveries Post-Course Survey

Resources

There are no resources for this lesson.

Prep

There is no prep for this lesson.