

Conceptual Task Scenarios

Adult Scenario

Pre-Event

It is Saturday morning and Andrew wants to know what the wait-time is for the lines to enter the Skydeck. He downloads and opens the BirdEyeChicago application on his phone and he creates an account. Once signed in, he selects the “Trip Planner” tab, which suggests he do some research, purchase his tickets, and book reservations for other events before finding out the wait-time. Since he recently became a Chicago resident, he skips step one (hotel reservation) and looks up sites, events, and restaurants in order to make the appropriate reservations and ticket purchases. Next, he is shown the wait-time for the tickets and entrance into the Skydeck, which are both approximately 45 minutes long. He subscribes to get notifications of when the lines become smaller and proceeds to create his agenda for the day. At 1:00pm, he is alerted on his phone that the wait time to the Skydeck is only 7 minutes long, so he takes off to the Skydeck and buys the entrance tickets through the application on his way there. Once he is inside, he turns off the notifications and adjusts his agenda accordingly.

During

Andrew wants to become acquainted with his surroundings and learn about the geography, history, and the most popular spots/restaurants in Chicago since he just recently moved from Florida for school. He has heard that the Skydeck is the place to visit with the assistance of the BirdEyeChicago “Virtual 3D Guide.” This guide provides him with high-resolution spherical panorama shots of different places in Chicago from a bird’s-eye view and offers both a brief or detailed history of different buildings and attractions. He taps on a few buildings, like the Hancock Observatory, and chooses the “Information” icon to learn about its history. Once finished, he taps on the “Map” icon on top of the building and gets its geographical location on the map. He learns that the Hancock Observatory is 1.9 miles away from where he is and decides to use the “Highlighter” icon to choose the best walking route to get there. He then drops a “Thumbtack” on the building to add it to his agenda for the day. After virtually visiting a few interesting places and learning various facts about them, he considers visiting a few museums and the Millennium Park. Afterwards, BirdEyeChicago recommends a couple of activities happening nearby the Skydeck and he decides to spend his evening at one of the most popular neighborhoods in the city, Wicker Park.

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Post-Event

Andrew had a great time at the Skydeck and he loved using the BirdEyeChicago Virtual 3D Guide, including its notification feature since he found them very helpful. Now, as he is sitting at a great Italian restaurant in Chicago, recommended by the application, he checks out the pictures and videos he took at the Skydeck and manages them using the application. He finalizes the pictures and shares them with his friends on all of his social media accounts. He also takes the opportunity to share his reviews about Skydeck and the application on Yelp and other web sites.

Child Scenario

Pre-Event

Nicholas Levy was surprised to discover one morning that his parents were going to take a family trip to see the Skydeck in Chicago. He immediately opened up the BirdEyeChicago application and tapped on the animated videos that describe some interesting facts about the Skydeck. Nick was very excited on his way to the Skydeck and asked many questions about its height as well as whether or not he would be able to look out over the glass ledges to see the whole city. Nick, amazed by the pictures of the tall buildings and cool looking landmarks on the app, begins saving them directly on his iPad to show his parents. As soon as they arrive in Chicago, Nick's mother suggests that he starts snapping pictures to remember his trip. Nick pulls out his iPad and opened the "Take Photos" tab on the application. Then, he flashes photos on the card ride, in the hotel, and all the way to the Skydeck including the contents on the walls throughout the Willis Tower.

During

Nicholas had enough of taking pictures and needs another type of entertainment. He closes the camera option and opens up the game page on the application. He becomes excited with all of the different games available and chooses the "Chicago's Treasure Hunt." He is prompted to choose an avatar and a mission out of the following options: "Treasure Search," "Clues Treasure Search," "Competition Search," "Theme Search," "Time Limited Search," and "Time Unlimited Search." He chooses the "Clues Treasure Search" mission and starts solving clues that are prompted on the screen as he guides his avatar around the city. He submits his answers by either tapping or speaking into the phone's microphone from the answers box. Once he solves all the clues, he finds a cool treasure box hidden somewhere in the city and obtains a gold star for completing the level. He becomes so completely lost in the game that he loses track of time, all while subconsciously learning about the city.

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Post-Event

Later that evening, as Nick looks over his pictures from the trip, he decides that he wants to add some themes to some of them. He opens the application on his iPad and chooses the “Edit” option. This feature allows him to drop and drag mustaches, hats, and glasses, and add cool effects to the pictures. Since Nick loved the tall buildings of Chicago, he adds some major buildings to the background. He also chooses the winter theme, since he loves snow and now wants to return during the wintertime. The next day at school, Nick tells his friends an exciting story about his visit to Chicago and shows them a series of pictures that he took, saved, and organized in albums within the application.

Focus Scenarios and Personas

Scenario 1

Scenario title: Exploring Chicago virtually from the Skydeck using BirdEyeChicago.

Persona Name: Andrew

Brief Description: Andrew sets out to explore Chicago using the “Virtual 3D Guide” feature of the application. With this feature Andrew can see a high-definition view of the city landscape, historical monuments, map view, and 3D street view from the Skydeck. Furthermore, he can pinpoint any particular place from the application and learn interesting details about it such as its geographical location and history.

Scenario 2

Scenario title: Playing “Chicago’s Treasure Hunt” game inside the Skydeck.

Persona Name: Nicholas Levy

Brief Description: Nick plays the exciting ‘Chicago Treasure Hunt’ game inside the Skydeck using the BirdEyeChicago application. In this game, Nick sets out on a mission to find a treasure box by solving a series of clues. Some clues are straightforward instructions and others are riddles that lead him to discover further clues in order to get him a step closer to the grand prize inside the treasure hunt.

Interface Metaphors

Adult During scenario

The interface metaphors used in the “Virtual 3D Guide “ consist of:

- **Thumbtack**- Thumbtacks are used to pin a reminder to visit buildings/landmarks of interest in the future. A Thumbtack icon would help the user keep a list of the places he/she has visited or wants to visit in the future. An advantage of using the Thumbtack icon is that it is easily recognizable as a symbol of posting something on wall such as a map poster. The disadvantage of providing this icon is that as a user pins many places, the streets could be hard to see because of the overlap with the pins, particularly on small screens.
- **Plus and Minus Sign** - A Plus and Minus Sign is used to zoom in and out of a particular scene. This feature allows users to be in control of the size of the view on their screen. The drawback of this is that it is not necessarily easily recognizable, and could be confused as a math icon with younger users.
- **Information (i)** - The Information icon can be used to display any additional information of a historical building or landmark that a user is interested to read about. The advantage of an information icon is that it provides the reader with as little or as much as they want regarding any particular site. The disadvantage of providing this feature is that it may not be clear whether the information provided is regarding the site or the application itself.
- **Highlighter** - The Highlighter can be used as an accenting tool that emphasizes the route or street that is suitable for the user of a map. Its main use is to brighten a point on a digital version of a map. The advantages are that it makes the route much more clear for the user. A disadvantage of the Highlighter icon is the inconspicuous recognition of the highlighter as a recognizable icon and perhaps could be confused with a pen or pencil that can be used for taking notes on the screen.
- **Magnifying Glass in Search Box** - This is used to identify a search for a particular phrase or vocabulary word that is within the program of your device. The reason a Magnifying Glass is used as a search icon is due to its actual use of enhancing smaller objects that would otherwise be difficult to see. The advantage of using a Magnifying Glass as a search icon in our application is that its use in the application is very similar to its normal use in the real world. A downside of using it is its association with a “zoom” feature or possibly solving mysteries or finding clues.

Child During scenario

The interface metaphors used in the “Chicago’s Treasure Hunt” consist of:

- **House** - To return to the homepage of the game. This will provide easy navigation within the application, as the user will be able to exit from any screen on the game at any point instantly. The disadvantage of providing this icon is that the user can accidentally tap on it and then have to find their way back to the page they were previously on. Therefore, we would provide error prevention messages with a save function. For example, every time the users tap on this icon in the middle of game, they will get a message saying “Are you sure you want to exit? If yes, your game will be saved.”
- **Speech bubbles** - To display the thoughts or conversations of people that the avatar runs into. These commonly represent conversations, so it will be perfect for our interaction type, as they are simple and straightforward. The downside of using them could be their size. Thus, we will have to think about how big we want them to be in order to display all the information needed for the clues.
- **Avatar’s silhouette** - To change the chosen avatar. This will allow the users to change their appearance in the game at any time they want. This will provide the kids to feel they have more control of the game. The disadvantage would be that the user could dislike the entire avatar options provided. To solve this problem, we can have a “Build your own avatar” option that allows users to choose their own hair, body type, skin color, face shape, etc.
- **Compass** - Guides the users to proceed to the next step of the game in the correct direction. This will help the users to navigate better inside the game platform. The disadvantage would be that the users might ignore it or become confused because they are unable to read or follow it properly. Nonetheless, it can also be an educational component, as the kids can learn how to use it while playing it.
- **Questions mark** - To obtain simple instructions on how to play the game. This will help the users become familiarized with the icon, goals, and rules of the game. However, certain users may find the instructions challenging or confusing since kids of different ages possess different levels of understanding.
- **Notebook Page** - It will list all the solved clues. This will allow the users to go back and re-read the clues if they want to see how many they have completed. However, this icon is not essential for the purpose of the game.
- **Suitcase** - Any items (ex. scissors, flashlight, wood, towel, wrench, bag, rope) provided when a clue is solved will be stored in the avatar’s suitcase in order for them to be used again when appropriate. This will allow the users to locate their items in just one place and save space on the main screen of game, as the items will be displayed on top of the screen only when this icon is tapped on. The disadvantage would be that users may confuse this icon with that of a shopping cart. However, we are considering changing the icon to a backpack, and are in the process of finding the right icon online.

- **Treasure box** - It will contain the grand prize of the game- a gold star. Treasure boxes are generally thought of having something valuable inside, thus it is the perfect icon to have- aside from the fact the game is also called “Treasure Hunt Chicago”.
- **Gold Star** - Indicates that the user has won and finished the game. A gold star is usually perceived as a rewarding item so it is a great prize for a kid. However, older kids might prefer something more cool, interesting, or meaningful to them.
- **Criss crossed hammer and wrench** - To provide the rules, tips, and alerts of the game. This will help users when they are stuck in a game as it will provide them with suggestions or reminders of things can do or things that they have in their backpack to help them solve their clues.
- **Magnifying glass** - To get a closer or more distant look on objects or buildings/sites around the city by zooming in and out of view. This will help the users look at the screen both up close and further out to find the clues or items needed throughout the game.
- **City's Landmarks** - The appearance of a city will be displayed on the screen with symbolic city items such as the Bean, AIC, Hancock building, etc. These are all global representations of the actual sites so the kids will have no problem spotting them in the game with the clues. The kids will actually be able to learn and become familiarized with the appearance of Chicago's unique landmarks and buildings through their role and incorporation in the game. The disadvantage is obviously that at first glance, the kids will not be able to identify or recognize each of Chicago's sites.

Interaction Types

Adult- Manipulating

We decided that the most appropriate interaction type for this particular focus scenario is direct-manipulation. In order to provide the functions we want to offer, we need the user to perform a series of familiar actions that they often use with their touch-screen devices. We need our users to manipulate our icons properly and effectively to deliver all of the information they seek on our application. For example, the required manipulations consist of the following:

- **Dragging and Dropping** - Once the users find an interesting landmark/building that they want to visit, a “thumbtack” icon can be dragged and dropped on either the virtual or map view to reference or visit the place at a later time. Also, the “highlighter” icon can be dropped and then dragged across either streets/roads/paths to define routes that best suit the user.
- **Selecting (tapping)** - Users will be able to select from a variety of features provided by the application. For example, the thumbtack icon, the map icon, the information icon, and the zoom icons.
- **Zooming in/out** - Users will be able to stretch the view of streets and sites. For example, on either the street, virtual, or map view, the user can do this by tapping on a “+” sign to zoom in and a “-” sign to zoom out. An alternative gesture that will be available is to hold down their index finger and thumb together on the middle of the screen and then expand their fingers apart to zoom out or vice versa to zoom in.
- **Gesture Manipulation** - Users will scroll up/down/left/right to view the city to allow easier maneuvering for aerial viewpoints and obtaining information. So, the user will be able to press their finger against the screen and perform upward, downward, and/or side-to-side motions over the screen.

The disadvantages of using this interaction type is that some users may not be comfortable using their fingers or a stylus to manipulate the screen and maneuver things around (ex: older users or users with wide/big fingertips). They might find touch screen gestures challenging and thus it will impede their use of the application. Consequently, the number of our targeted users may be limited.

Child- Conversing

We feel that the best interaction type for this particular phase and persona is conversing. Kids become more engaged when there is an open dialogue as opposed to just receiving instructions. Therefore, if we make the games interactive with these types of users, we can potentially get better responses and more engagement from them. Also, given that this particular game (Treasure Hunt Chicago) requires the kids to solve clues and explore the city, they will have an option to choose an avatar and a difficulty level to make it more interesting/challenging.

The user will be provided with the information about their next clue to find a treasure through speech bubbles as if she/he was talking to the game. Each clue will reveal different objects in the form of jewels, candies, and helpful tools, which will help them, continue finding more treasures. And most importantly, it will have objects related to the artistic or historic context of a site so the user can have an educational gain from the game. If the user wants to know more about any given site, he/she can tap on the information icon and a pop-up window will open with the information requested. The user has an option to change the avatar from the "options" panel and can also use voice-driven recognition system to interact with an application. If the user wants to quit the game at any point, he can click on the home icon on the top left corner. However, the user will be prompted with a confirmation message for error prevention before taking him back to the home screen. This formatting requires more interaction by the user, as they must actively answer questions and solve clues/riddles rather than merely following instructions.

The downside of using this interaction type is that some kids may have difficulty reading or concentrating, making it hard for them to properly play the game. They may find the instructions challenging or confusing since kids of different ages possess different levels of understanding and education. In order to solve this issue, we have added a voice version of instructions and clues as well. This will minimize the chances of the user losing focus and easily becoming bored of the game.

Cart Sort Summary and Report

For our card sort, we decided to select four of the same people that we interviewed for Assignment 3. We did this because they all fit the perfect user criteria for the “BirdEyeChicago” application and they already know a little about our application. We decided that an open card sort was the most appropriate since it allowed the test subjects to arrange the features as they best saw fit and to name each category on their own. We figured that pursuing this technique would give us more useful and insightful results that can help us best meet their expectations. We simply asked each of our test subjects to group all of the features provided in the categories that they found most appropriate for a travel application. Then, we handed them blue post-its containing all the features that our application offers since they are easy and manageable to use. However, two of test subjects made us realize that our menu should be three layers. Thus, we provided them some pink post-it so they can write the category names that they considered the most appropriate for each group of features on the pink post-its. After analyzing all the of the subjects results, we decided to add green post-its as well in order to reflect the suggested ideas and broken down groups from our subjects more clearly. In other words, the pink post-its represented the main menu level with the category names, the green represented the different actions that the user can do in the app, and the blue post-its represented the lower menu with the features for each of those actions.

After analyzing and discussing the results of our test subjects, we concluded that even though we knew which features belonged together, they still needed to be organized in better categories and with better labels. For example, two out of our four subjects grouped the search, reservation, and directions together as pre-activities, which we had originally separated under individual menu tabs. This suggestion saves space on the screen and organizes the screen more logically. Similarly, we initially had our social media options on a separate menu tab and page on the application. However, our test subjects made us realize that it makes more sense to include this sharing feature under the Entertainment section. This way, the users can have easy access to all their social media accounts and share their pictures, reviews, or game scores effortlessly and instantly. Also, a few of our subjects were confused with the term “camera” and “album” in an application like ours, so we decided to go with more personal terms like “Take a Picture” and “Your Photos.” Our subjects found that these terms were simpler and directly related to their purposes.



Site Map

Please see attached file: HCI440_A5_ (Conceptual_Design_Map_10).pdf

Wireframe Prototype

Please see attached file: HCI440_A5_ (Conceptual_Design_Wire_10).pdf

Process Retrospective

We feel that the open card sort we used helped us a great deal in categorizing the application's features both logically and effectively. Thus, we chose the right type of card sort and process strategy with our test subjects. We feel that our sitemap and wireframes provide the right information and features that users need in the correct format in our application. In addition, we think that we chose the best focus scenarios, as they are the most elaborate and crucial part of both of the users' trips and of our application. We had a plethora of material to work with on the wireframes with these two personas/scenarios that allowed us to explain key features that our application offers to improve in regards to the Skydeck and Chicago experience in an easy, educational, and fun manner.

One of the main issues we faced while doing this assignment was grasping the concept and purpose of the card sort. We started working as soon as soon as the assignment was posted like with the previous ones, but due to confusion among group members with this requirement, we had a small drawback. For that reason, we wish we had spoken with the professor individually earlier than we did. Nonetheless, we were able to keep the ball rolling with our ideas and utilize our creativity for our application once we were all on the same page. Another part of our assignment that we had to contemplate a few times was the making up of titles for our application's features. For example, we had difficulty defining the user's gestures of moving the screen around to see more content. We actually figured out the appropriate name for this feature as well as others after speaking with the professor. Overall, we feel we have come up with great decisions and artifacts that will lead us to build great prototypes in our next assignment.

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Team Member Contributions

As a group, we all reviewed and added information to each portion of the assignment as needed. However, we all distributed specific sections of the report among us. The work breakdown is the following:

Team Member Name	Email Address	Specific Contributions
Vicky Moreira	vmorei1@hotmail.com	Conceptual scenarios, metaphors, interaction types, card sort summary, proofread entire document, and meeting minutes.
Mona Ahmed E Albusaysi	monaalbusaysi@gmail.com	Conceptual scenarios, metaphors, interaction types, card sort.
Basavaraj Malagi	basavaraj.malagi@gmail.com	Digital version of sitemap, card sort, and focus scenarios/personas.
Alap Raval	alapsraval@gmail.com	Interaction types, conceptual task scenarios, card sort, wireframes using Balsamiq, final proofread and submission.