IST 331: Human Centered Design

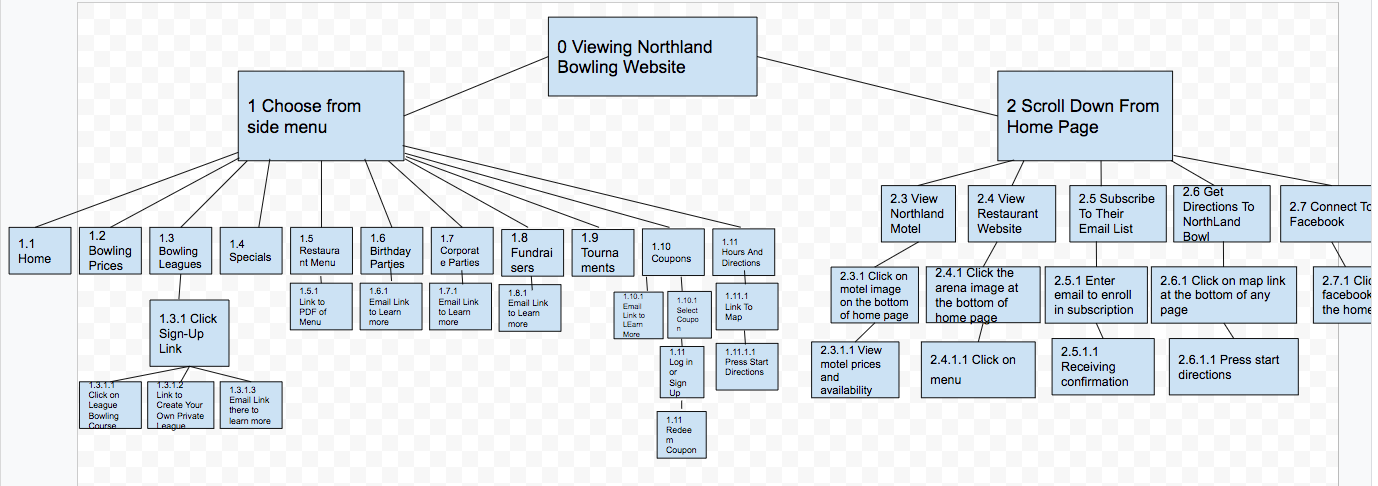
Northland Bowling Task Analysis

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**Hierarchical Task Analysis**

* A list of the actions possible on the site.
  + The ability to navigate to both the nearby Motel’s website and the Restaurant’s website
  + Connect with the bowling alley using the Facebook page provided
  + Subscribe to the northland bowling email list
  + The ability to view instructions for organizing a birthday party and the different packages Northland Bowl offers.
  + The ability to view, download schedules and signup sheets for bowling leagues.
  + The ability to view bowling specials and events for each day of the week.
  + The ability to view the restaurant menu and all of the food specials that the Arena Bar and Grill offers.
  + The ability to see the hours and directions.
  + The ability to view upcoming tournaments and fundraisers.
  + The ability to print and view coupons.
* High-Level Tasks versus Smaller Sub Tasks
  + High-Level Navigable Options: Choose from Side Menu and Scrolling Down from the Home Page
  + Low Level Tasks After Choosing from Side Menu: Get Discounts and Coupons, Sign Up for Bowling League, click on the Email link or Call the Bowling alley with any questions, Look at Bowling Menu, Get Directions to The Bowling Alley
  + Low Level Tasks After Scrolling Down: View the Motel and Restaurant websites, subscribe to the bowl email lists, click on “map” at the bottom of the page, connect the Facebook
* Ways to Complete Each Subtask
  + Get Discounts and Coupons: Choose from the side menu, select “Coupons”, press on the “kids bowl free link”, then log into or signup for a Northland Bowling account and then follow the instructions to how to redeem the coupon next time you bowl.
  + Sign Up For Bowling League: Choose from side menu, select “Bowling Leagues”, scroll down and click sign-up link, email them to get into a league or press the bowling course link to learn how to bowl or select the create your own league at the bottom to get to the pdf about the bowling league.
  + Look at Bowling Restaurant Menu: Choose from side menu, select “Restaurant Menu”, Click on the link to get to the restaurant menu pdf.
  + Subscribe to The Email List: Scroll down midway down the page, click on the box under the words “Join our mailing list for special offers and news”, fill in your contact information on another page, receive confirmation
  + Follow Them on Facebook: Scroll down midway down the page, then click on the Facebook icon under the words “Connect with us on Facebook”, log into your email and hit the follow button.
  + Option 1 Using Side Menu: Get Directions To Bowling Alley: Choose from the side menu, select “Hours and Directions”, scroll down and click on the link labeled “Click here for a map and to make directions from your location”, then hit the “Directions” button in google maps.
  + Option 2 Scrolling Down: Get Directions To Bowling Alley: Scroll down to the bottom of the page. Select the “Map” link next to the address of the bowling alley. Hit the “Directions” button in google maps.
  + Visit The Restaurant Website: Scroll down to the bottom of the page, hit the button labeled “Arena, Sports and Entertainment, Bar and Grill.”
  + Visit the Motel Website: Scroll down to the bottom of the page, hit the button labeled “northland Motel.”
  + Email Them: Many ways to do this easiest way to do this though is by selecting the “Coupons” button on the side menu. The link to the bowling alleys email address will then be on the right side of the page next to the words “Call us today at 814-237-1500 or email.”
  + Call Them: On the top of the home page find the phone number located below “Give Us a Call Today” and the address.

**Hierarchical Task Analysis Diagram:** 

**GOMS-KLM Model:**

1. Get Discounts and Coupons:

* Goal: Redeem a coupon for Kids Bowl Free.
* Subgoals:
  + Find the side menu.
  + Click on "Coupons".
  + Click on "Kids Bowl Free" link.
  + Log in or sign up for a Northland Bowling account.
  + Follow the instructions to redeem the coupon.
* Operators:
  + P: Click on the side menu to open it.
  + K: Type "Coupons" to search for the option.
  + P: Click on the "Coupons" option to select it.
  + P: Click on the "Kids Bowl Free" link to open it.
  + K: Type in account information to log in or sign up.
  + P: Click on the "Redeem" button to redeem the coupon.
* Methods:
  + P-K-P-P-K-P: Click on the side menu, type "Coupons", click on "Coupons", click on "Kids Bowl Free", type in account information, and click "Redeem".
* Selection rules: None required.
* Estimated time: 5.38 seconds (1.1 sec for mouse clicks and 0.28 sec for keystrokes)

1. Sign Up For Bowling League:

* Goal: Sign up for a bowling league.
* Subgoals:
  + Find the side menu.
  + Click on "Bowling Leagues".
  + Scroll down and click on the sign-up link.
  + Email them to get into a league, or select the "Create Your Own League" option.
* Operators:
  + P: Click on the side menu to open it.
  + K: Type "Bowling Leagues" to search for the option.
  + P: Click on the "Bowling Leagues" option to select it.
  + P: Scroll down to find the sign-up link.
  + P: Click on the sign-up link.
  + K-P: Type an email to request entry to a league.
  + P: Click on the "Create Your Own League" option to get to the PDF.
* Methods:
  + P-K-P-P-K-P: Click on the side menu, type "Bowling Leagues", click on "Bowling Leagues", scroll down and click on the sign-up link, type an email to request entry to a league, or click on the "Create Your Own League" option.
* Selection rules: None required.
* Estimated time: 16.2 seconds (1.1 sec for mouse clicks and 0.28 sec for keystrokes)

1. Look at Bowling Restaurant Menu:

* Goal: View the bowling restaurant menu.
* Subgoals:
  + Find the side menu.
  + Click on "Restaurant Menu".
  + Click on the link to view the menu.
* Operators:
  + P: Click on the side menu to open it.
  + K: Type "Restaurant Menu" to search for the option.
  + P: Click on the "Restaurant Menu" option to select it.
  + P: Click on the link to view the menu.
* Methods:
  + P-K-P: Click on the side menu, type "Restaurant Menu", and click on the link to view the menu.
* Selection rules: None required.
* Estimated time: 2.68 seconds (1.1 sec for mouse clicks and 0.28 sec for keystrokes)

1. Subscribe to The Email List:

* Goal: Subscribe to the email list.
* Subgoals:
  + Find the email subscription box.
  + Click on the box to open it.
  + Fill in contact information on another page.
  + Receive confirmation of subscription.
* Operators:
  + P: Scroll down the page to find the email subscription box.
  + P: Click on the box to open it.
  + K: Type in contact information on another page.
  + M: Wait for confirmation of subscription.
* Methods:
  + P-P-K-M: Scroll down the page, click on the box, type in contact information, and wait for confirmation.
* Selection rules: None required.
* Estimated time: 7.16 seconds (1.1 sec for mouse clicks and 0.28 sec for keystrokes)

1. Follow Them on Facebook:

* Goal: Follow Northland Bowling on Facebook.
* Subgoals:
  + Find the Facebook icon.
  + Click on the icon to open the Facebook page.
  + Log into your email account.
  + Click the "Follow" button.
* Operators:
  + P: Scroll down the page to find the Facebook icon.
  + P: Click on the Facebook icon to open the Facebook page.
  + K: Log into your email account.
  + P: Click the "Follow" button.
* Methods:
  + P-P-K-P: Scroll down the page, click on the Facebook icon, log into your email account, and click the "Follow" button.
* Selection rules: None required.
* Estimated time: 5.46 seconds (1.1 sec for mouse clicks and 0.28 sec for keystrokes)

1. Option 1 Using Side Menu: Get Directions To Bowling Alley:

* Goal: Get directions to the bowling alley.
* Subgoals:
  + Find the side menu.
  + Click on "Hours and Directions".
  + Scroll down and click on the link labeled "Click here for a map and to make directions from your location".
  + Hit the "Directions" button in Google Maps.
* Operators:
  + P: Click on the side menu to open it.
  + K: Type "Hours and Directions" to search for the option.
  + P: Click on the "Hours and Directions" option to select it.
  + P: Scroll down the page to find the link labeled "Click here for a map and to make directions from your location".
  + P: Click on the link to open it.
  + P: Click the "Directions" button in Google Maps.
* Methods:
  + P-K-P-P-P: Click on the side menu, type "Hours and Directions", click on the option, scroll down and click on the link, and click the "Directions" button in Google Maps.
* Selection rules: None required.
* Estimated time: 11.74 seconds (1.1 sec for mouse clicks and 0.28 sec for keystrokes)

1. Option 2 Scrolling Down: Get Directions To Bowling Alley:

* Goal: Get directions to the bowling alley.
* Subgoals:
  + Scroll down to the bottom of the page.
  + Select the "Map" link next to the address of the bowling alley.
  + Hit the "Directions" button in Google Maps.
* Operators:
  + P: Scroll down to the bottom of the page to find the "Map" link.
  + P: Click on the "Map" link to open it.
  + P: Click the "Directions" button in Google Maps.
* Methods:
  + P-P-P: Scroll down the page, click on the "Map" link, and click the "Directions" button in Google Maps.
* Selection rules: None required.
* Estimated time: 3.04 seconds (1.1 sec for mouse clicks and 0.28 sec for keystrokes)

1. Visit The Restaurant Website:

* Goal: Visit the restaurant website.
* Subgoals:
  + Scroll down to the bottom of the page.
  + Hit the button labeled "Arena, Sports and Entertainment, Bar and Grill."
* Operators:
  + P: Scroll down to the bottom of the page to find the button.
  + P: Click the button labeled "Arena, Sports and Entertainment, Bar and Grill."
* Methods:
  + P-P: Scroll down the page and click the button labeled "Arena, Sports and Entertainment, Bar and Grill."
* Selection rules: None required.
* Estimated time: 2.48 seconds (1.1 sec for mouse clicks and 0.28 sec for keystrokes)

1. Visit the Motel Website:

* Goal: Visit the motel website.
* Subgoals:
  + Scroll down to the bottom of the page.
  + Hit the button labeled "northland Motel."
* Operators:
  + P: Scroll down to the bottom of the page to find the button.
  + P: Click the button labeled "northland Motel."
* Methods:
  + P-P: Scroll down the page and click the button labeled "northland Motel."
* Selection rules: None required.
* Estimated time: 2.48 seconds (1.1 sec for mouse clicks and 0.28 sec for keystrokes)

1. Email Them:

* Goal: Send an email to the bowling alley.
* Subgoals:
  + Find the "Coupons" button on the side menu.
  + Click the button to open it.
  + Look for the bowling alley's email address on the right side of the page next to the words "Call us today at 814-237-1500 or email."
  + Click on the email address link.
* Operators:
  + P: Click on the "Coupons" button on the side menu.
  + P: Find the bowling alley's email address on the right side of the page.
  + P: Click on the email address link to open it.
* Methods:
  + P-P-P: Click on the "Coupons" button, find the email address, and click on the link to open it.
* Selection rules: None required.
* Estimated time: 3.08 seconds (1.1 sec for mouse clicks and 0.28 sec for keystrokes)

1. Call Them:

* Goal: Call the bowling alley.
* Subgoals:
  + Find the phone number located below "Give Us a Call Today" and the address on the top of the home page.
  + Dial the phone number.
* Operators:
  + P: Look for the phone number on the top of the home page.
  + K: Dial the phone number.
* Methods:
  + P-K: Look for the phone number and dial it.
* Selection rules: None required.
* Estimated time: 0.68 seconds (0.28 sec for keystrokes)

**Usability Issues:**

Time required: The estimated times for completing some of the sub-tasks are relatively long. For example, subscribing to the email list and following the bowling alley on Facebook both have estimated times over 7 seconds. This could be a potential usability issue if users perceive the task to be too time-consuming. To address this issue, the interface could be streamlined by reducing the number of steps required to complete each sub-task.

Ambiguity in task instructions: Some of the sub-task instructions are somewhat ambiguous, which could lead to confusion and errors for users. For example, the instructions for signing up for a bowling league involve several options, such as emailing them or clicking on the bowling course link. This could be improved by providing clearer and more specific instructions for each option.

Navigation complexity: The sub-tasks involve several steps that require users to navigate through different pages or menus. This could be a potential usability issue if users find the navigation to be confusing or difficult to understand. To address this issue, the interface could be designed with more intuitive navigation, such as grouping related sub-tasks together or providing more visual cues to guide users.

Lack of feedback: The GOMS models do not address any feedback that the interface provides to users. This could be a potential usability issue if users are unsure whether their actions have been successful or if they are not given enough information to complete the task. To address this issue, the interface could provide clearer feedback to users, such as confirmation messages when they click on various options.

Performing a task analysis allowed us to breakdown complex tasks into sub tasks and identify the number of steps involved in completing a task. Through the analysis we were able to determine if there were any tasks that could be improved in effectiveness or efficiency. We were also able to learn how each task connects to one another and how each task builds off one another. The relation of each task helped show us what clickstream is more important and what aspects of the website need to be changed in our version of the interface. Some potential usability issues we found were time required to complete tasks, ambiguity of steps, navigation complexity, and a lack of feedback. To improve these issues, we could simplify the interface by having less pages, making it clearer how to accomplish specific tasks, grouping related tasks together, and giving more feedback to the users.