

ASSIGNMENT TWO

BENCHMARKING EXERCISE AND CARD SORT ANALYSIS

UNDERSTANDING USERS' NEEDS

RESEARCH METHODS: HEURISTIC EVALUATIONS AND USER INTERVIEWS

HEURISTIC EVALUATIONS

WHY

A heuristic evaluation allows for an analysis of a website's current iteration before redesign. As Rosenfeld et al. (2015) point out, few websites are starting from scratch without any prior product (Heuristic Evaluation, para. 1). Heuristic evaluation considers the site's organization, navigation and labels against a set of standards to determine the site's strengths and weaknesses.

PROS AND CONS

Rosenfeld et al. (2015) advocate an "expert critique" performed by "someone outside the organization," which isn't always feasible (Heuristic Evaluation, para. 2). It may also be a challenge to convince stakeholders that a heuristic evaluation is necessary when they are disappointed with the current website and advocate throwing out everything and starting fresh, even though this causes a great deal more work than revising.

Conclusions drawn from heuristic evaluation about the site's strengths and weaknesses can inform ways to improve the site during redesign. If done by several outsiders with unbiased opinions and consistent standards, their agreed opinions on what needs work on the website show a consensus on where improvements are most needed.

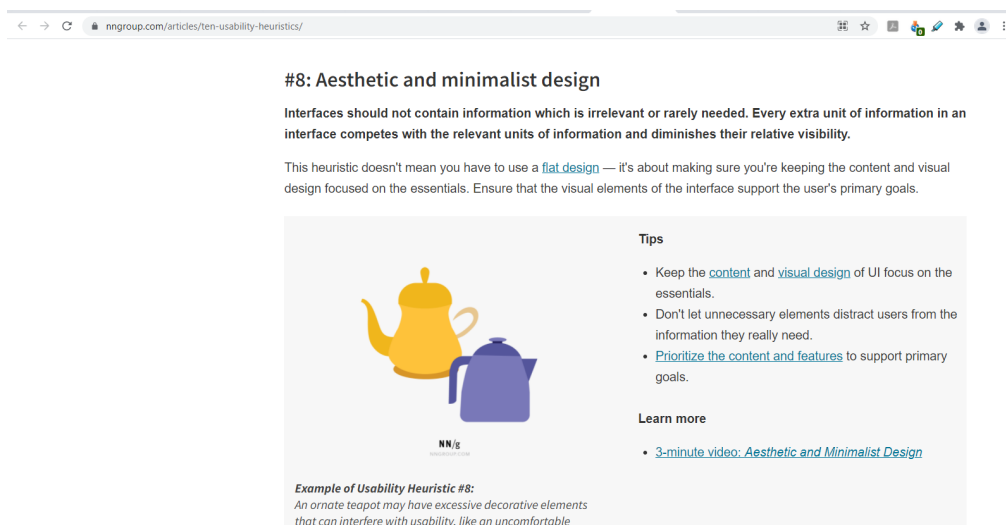


FIGURE 1: SCREEN GRAB OF ONE OF NIELSEN'S 10 USABILITY HEURISTICS FOR USER INTERFACE DESIGN.

EXAMPLE

Rosenfeld et al. (2015) suggest using Nielsen's *Ten Usability Heuristics* as a guide when creating standards to measure the usability of a website. The standards can be used to consider system status, how much freedom the user has to undo actions, whether the site is consistent with user expectations (for example, if an e-commerce site has a password-protected account and shopping cart function), quality of design, and other expectations for an easy-to-use website (Nielsen, 2020). See Figure 1 for an example of Nielsen's standards.

USER INTERVIEWS

WHY

Communicating with people who use the website in question can point to their pain points for current usage – perhaps the process to run reports is too clunky, or maybe there is no easy way to apply for membership when they need to sign up new members. Understanding how various users interact with the site can help determine what needs to be improved.

PROS AND CONS

Determining the types of users for the website can be a challenge. As Krug (2014) points out, "All web users are unique," (p. 108). Particularly if a new design group has been asked to redesign a site, it may take some time interviewing stakeholders and various users to confirm they understand all audiences for a particular website.

It also takes time to gather information, whether it's done in person through focus groups, or collected virtually through surveys. Questions need to be written and data has to be gathered and analyzed in order to create clear pictures (or personas) of the types of users on the site. The goal is to get a well-rounded mental model of who uses the site and how; Rosenfeld et al. (2015) note that "you've got to look at it [the website] from many different perspectives to get a good sense of the whole," (Users, para. 5).

While it's impossible to predict all of the myriad ways users may interact with a website, understanding why and how the most common types of users use the site will go a long way to reducing confusion or retracting suggestions later. Personas in particular can remind information architects how such users are looking for information, giving them benchmarks to test as research leads to strategy and design.

EXAMPLE

Rosenfeld et al. (2015) give sample questions to ask current users of the site about what they do, how they use information, what they need from the website, how they publish documents, and what they would suggest for revisions to the site (Interviews, para. 2-6). This information can inform organization and labeling of the site, as well as personas to consult throughout the process to confirm various types of users will be able to use the site easily.

BENCHMARKING EXERCISE

The researcher compared the information architecture of two websites, one for the UNT College of Business and another for the College of Business at the University of Texas-Arlington. The sites were

evaluated to determine whether their information ecology of content, context and users is clear, as well as how their labeling, organization, search and navigation systems affected usability.

Both sites have a similar context: They are for business schools at large universities, with similar cultures, funding, structures and resources. Their primary users are also similar, consisting of students (both prospective and current), faculty and staff for the respective universities and business schools. And while their content differs to reflect the individual nature of the schools, they both exist to convey similar information – background information on the university as well as the business school, what programs and degrees each school offers, why the school is impressive and lists of notable alumni, etc.

A detailed analysis was completed to consider each site's labeling, organization, search and navigation systems.

	<i>UNT COLLEGE OF BUSINESS</i>	<i>COLLEGE OF BUSINESS AT THE UNIVERSITY OF TEXAS-ARLINGTON</i>
LABELING SYSTEM	<p>The site uses textual labels on the home page to denote various pages and sections of the site. Textual links in drop-down menus match the pages pointed to, and labels/page names fit the content on each page.</p> <p>The home page is primarily divided by colors and lines into sections, with one textual header separating informational icons above from news headlines below. Header fonts are consistent and header colors consistent per usage area – headers in white areas are green, headers against images are white.</p> <p>The labels reflect that the website is geared towards several types of users, most obviously Future Students or applicants, Current Students, and Faculty and Staff.</p>	<p>The site uses textual labels on the home page to denote various pages and sections of the site. Textual links for the top-level navigation links do not always match the pages pointed to, but the relationship between link and page title is relatively clear (i.e., Our Story -> About UTA; Departments -> Business Departments).</p> <p>The home page uses colors and images to divide the page into sections. Headers are obvious through color and font use – all headers are all caps, and they are white against images and colored backgrounds, blue against white backgrounds. But some labels against images rather than flat color backgrounds are difficult to read.</p> <p>The labels reflect content (Diversity, Programs) and types of users (Undergraduate, Graduate).</p>
ORGANIZATION SYSTEM	<p>The site uses an ambiguous organizational scheme with task- and audience-oriented top-level categories.</p> <p>The organizational structure is hierarchical, with top-level categories</p>	<p>The site uses an ambiguous organizational scheme with category- and audience-oriented top-level categories.</p> <p>The organizational structure is hierarchical, with top-level categories</p>

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	<p>pointing to related lower-level categories and pages – for example, the Academics category points to Academic Programs and Academic Departments, as well as pages for both of those categories.</p> <p>The site is a stand-alone site without direct navigation to the main UNT website (www.unt.edu). Users must click on the UNT banner at the upper left to return to general information about UNT, via contextual links within pages, or in the footer for the site.</p>	<p>pointing to a landing page for that section with navigation to that section's pages. Organization varies between sections of the site, but information is relatively easy to find.</p> <p>The site is a section of the UTA site as a whole, rather than a stand-alone website.</p>
SEARCH SYSTEM	<p>A magnifying glass icon at the upper right of the home page denotes the search system; hovering over the icon prompts a search bar to pop down. Searches appear to be searching the business school website only and not the main website, as all search results appear to begin with the business school URL, cob.unt.edu.</p> <p>A search for "application requirements" is quizzical – a header bar notes that "The deadline for submissions has passed." but doesn't give a page for how to apply. This could be because undergraduate students would need to apply to UNT rather than the specific college, but if so, the header about submissions doesn't make sense. This could also be due to the fact that the search is not being applied to the general UNT pages, which would have more information about applications.</p> <p>The search results include a link for an advanced search, but without any further suggestions of how to use such a search. Boolean searches do</p>	<p>A magnifying glass icon at the upper right of the home page denotes the search system; clicking on the icon opens a search bar to its left. But the placement shows that the search function applies to the entire UTA site, rather than that for the business school – it appears in the navigation for the entire UTA site. In addition, once a user has searched the UTA site from the business school pages, there is no shortcut or easy way to return to the section on the business school.</p> <p>Searching for "application requirements" does not reflect from where the search has been made; without the addition of "business" to the search words, results are from across the UTA website.</p> <p>Results seem to be capped at 100 results, as searches for [application requirements], [application requirements business], and ["application requirements"] all give different search results, but all give 100 results.</p> <p>Search results and search boxes do not give an option for an advanced</p>

	<i>UNT COLLEGE OF BUSINESS</i>	<i>COLLEGE OF BUSINESS AT THE UNIVERSITY OF TEXAS-ARLINGTON</i>
	<p>appear to be incorporated as searches for [application requirements] and ["application" and "requirements"] give the same number and page results, but a search for ["application requirements"] gives far fewer results.</p> <p>The site also appears to have search zones, as selecting the option for Advanced Search gives a pop-up option at the bottom of the screen to search "Content" or "Users," but no further direction is given on how to search those zones.</p> <p>The only advice given is if a search gives no results; then the page advises users to check spellings, remove quotation marks, and adding Boolean operators like "or." But the search bar remains constant on the page of search results, even with an empty set, making revisions of searches quick and easy.</p> <p>The site doesn't seem to have any quick way to share or print search results.</p>	<p>search, even if the search results are an empty set. The site does not appear to accept Boolean searches as a search for ["application requirements" not "undergraduate"] gives the undergraduate application requirements for the school of nursing as its first search result.</p> <p>Misspelled words do not trigger suggested searches; the only suggestion made is a permanent box on the search results page that suggests faculty and staff use their portal to search for resources.</p> <p>The site does not appear to have search zones, which is particularly unhelpful when a search from the business school site will search the entire UTA website.</p> <p>The site doesn't seem to have any quick way to share or print search results.</p>
NAVIGATION SYSTEM	<p>Global navigation bars are at the top of the page in menus that pop down when hovering over the category names. Four popular pages are featured in buttons on the right-hand side; two of these point outside the College of Business to applications and school tours.</p> <p>Contextual links to academic programs are easy to read and related to the headers for each section, although it's not intuitive that clicking on different degree programs (B.B.A., B.S., or DEPT) will</p>	<p>There are two global navigation bars at the top of the page. The first is the navigation for the UTA website overall; the second is for the global navigation for the business school pages. Neither menu incorporates drop-down menus when hovering over the category name. For the UTA menu, sub-pages appear when the category is clicked; for the business school menu, users must click on the link to learn more about that category.</p> <p>Once some categories has been</p>

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	<p>populate the options for that degree or a list of departments.</p> <p>The hierarchy of information on the landing page also makes sense, with the most important information – global navigation and popular pages – above the fold, followed by informational statistics about the college and recent press releases and news articles. The following sections feature contextual links to the various programs in the college, then directories of the college leadership, faculty and staff, with events in the last section before the page footer.</p> <p>There does not appear to be any supplemental navigation in the way of site maps or indexes. And no personalization or customization is apparent, although an option to log in may point to such features in a student- or faculty-only area.</p>	<p>opened, like Our Story, a local navigation menu opens at the right. Others have lists of related links, like Departments, that force users to use the back button or business school global navigation to go elsewhere.</p> <p>The hierarchy of information on the landing page for the college of business is unclear. The first feature after the navigation bars looks like it should rotate between several features, but only has information on the school's Weekend MBA. A lack of headers between sections creates confusion, as well as too many images as features.</p> <p>The site does not appear to have supplemental navigation via site maps or indexes, nor does it seem to have any options for personalization or customization.</p>

WHAT WORKS?

UNT COLLEGE OF BUSINESS

- The labels for the website are clear and concise, both in how they appear (fonts, colors) and how they designate content.
- The search results page gives options for an advanced search and suggestions on how to revise searches when the search returns no results.
- Having navigation embedded within drop-down menus makes it easy to browse the website for information.
- The home page has a great deal of information, but design choices make navigation relatively easy.

COLLEGE OF BUSINESS AT THE UNIVERSITY OF TEXAS-ARLINGTON

- The label styles are clear and easy to identify by color and font.
- The content is well organized by category, enabling users to browse information and find it quickly.
- Not having drop-down menus makes for a cleaner page when browsing for information.
- Incorporating local navigation menus within each category enables local navigation easily without the need to return to the main menus above.

*WHAT DOESN'T?**UNT COLLEGE OF BUSINESS*

- The site appears to have too many pages, with many pop-down menus featuring 6-8 pages per category when the top-level menu has 10 categories. The site would benefit from determining where pages can be combined in order to streamline content organization.
- Local navigation could be more consistent – some pages include local navigation bars, while others rely on contextual links to find similar information.
- Some information appears out of date; the most recent featured faculty publications are from 2018 (G. Brint Ryan College of Business, 2021b).

COLLEGE OF BUSINESS AT THE UNIVERSITY OF TEXAS-ARLINGTON

- Some of the labels used for the top-level navigation are unclear, like those marked "Diversity" or "Academy & Centers." They assume users of the website will know what these will point to, disregarding that many users are visiting the website unfamiliar with the organization of UTA or their student groups.
- There is too much information on the landing page, particularly textual information on top of images. It's visually jarring and overwhelming.
- The search capabilities need to be limited in some way; even a search for "bicycle" returns 100 results. Suggestions on how to limit or revise searches would be helpful, as well as an advanced search option.
- Not having drop-down menus can make it more challenging to determine where information is located.

TAKEAWAYS

The website for the UNT College of Business might benefit from an organizational restructuring to combine and consolidate pages in order to reduce the total number of pages on the site. Usability testing could determine what pages may be best to consolidate, as well as whether navigation needs improvement from section to section or if the current navigation suffices.

The website for the College of Business at the University of Texas-Arlington needs to consider how to cull or reorganize information, particularly what is featured on the home page. Designers also need to refine the search process as the website has a great deal of information to wade through, and without an option for advanced or zoned searching, search results do not always feel relevant.

CARD SORT ANALYSIS

PREPARATION AND CREATION

The researcher opened a free account with OptimalSort to do an open card sort study using the list of information labels provided. The card sort was configured and posted to a discussion board in Canvas for fellow students. The study was ended after 5 participants had completed the study.

DATA ANALYSIS

NUMBER OF PARTICIPANTS

- 5 participants completed the study.
- 1 participant started but did not complete the study.



FIGURE 2: SCREENGRAB FROM OPTIMALSORT REFLECTING NUMBER OF PARTICIPANTS.

MEDIAN AND MEAN NUMBER OF CATEGORIES INTO WHICH PARTICIPANTS SORTED THE CARDS

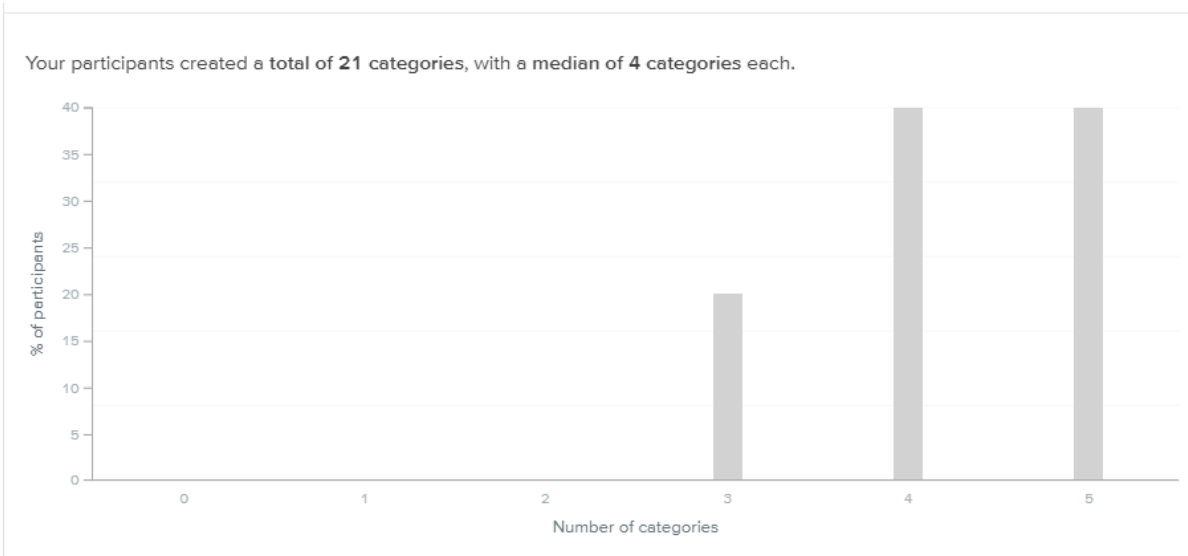


FIGURE 3: SCREENGRAB FROM OPTIMALSORT REFLECTING NUMBER OF CATEGORIES ENTERED BY PARTICIPANTS.

<input type="checkbox"/>	Participant	Status	Time taken	Cards sorted	Categories created	Categories named	Comment	Include	<input type="checkbox"/>
<input type="checkbox"/>	Participant 1	Completed	2:37	100%	3	100%		<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Participant 2	Completed	1:47	100%	4	100%		<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Participant 3	Abandoned	—	30%	1	100%		<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Participant 4	Completed	4:25	100%	5	100%		<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Participant 5	Completed	6:21	100%	4	100%		<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Participant 6	Completed	2:42	100%	5	100%		<input checked="" type="checkbox"/>	<input type="checkbox"/>

FIGURE 4: SCREENSHOT FROM OPTIMALSORT SHOWING NUMBER OF CATEGORIES CREATED BY EACH PARTICIPANT IN THE CARD SORT STUDY.

Disregarding the one participant that did not complete the survey, five participants completed the card sort study with the following numbers of categories: 3, 4, 5, 4, and 5. As noted in Figure 3, the median number of categories is 4; calculation of the mean or average is 4.2, rounded to 4 categories as well.

AVERAGE TIME TAKEN FOR PARTICIPANTS TO COMPLETE THE SORTING ACTIVITIES



2_m 42_s

- Participants completed the activities in a median time of 2 minutes and 42 seconds.
- The longest time spent on the study was 6 minutes and 21 seconds.
- The shortest time was 1 minute 47 seconds.

FIGURE 5: SCREENGRAB FROM OPTIMALSORT REFLECTING AVERAGE TIME SPENT COMPLETING STUDY.

NEW PROPOSED SITE/APPLICATION STRUCTURE

The suggested categories and sub-categories are as follows. The only category with sub-categories is Services; the rest of the categories have between 2-6 pages.

Category	Sub-category	Page
Dining & restaurants		Casual dining
Dining & restaurants		Coffee shop
Exercise		Pools
Exercise		Aerobics class
Exercise		Beginning yoga
Exercise		Exercise room
Exercise		Tennis courts
Outdoor activities		Sailing
Outdoor activities		Scuba diving
Outdoor activities		Skydiving
Outdoor activities		Fishing
Outdoor activities		Guided hikes and treks
Outdoor activities		Rock climbing

Services	Administration	Concierge
Services	Administration	On-site day care
Services	Administration	Reservations
Services	Take care of yourself	Massage
Services	Take care of yourself	Souvenir shop
Services	Touring	Sightseeing
Services	Touring	Guided tours

Table 1: Proposed categories and subcategories.

Categories were determined after consulting the similarity matrix and dendrogram shown below and on page 11. The researcher chose to use four categories, reflecting both the median and mean of the number of categories determined through the card sort study. The Best Merge Method dendrogram was used due to the low number of participants in the study. See Appendix A for a site map illustrating these categories.

VISUALIZATIONS

SIMILARITY MATRIX

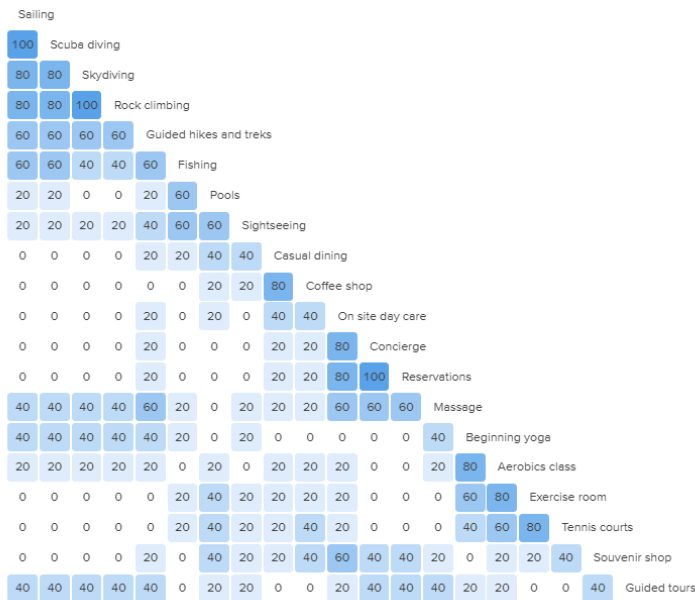


FIGURE 6: SCREENGRAB OF SIMILARITY MATRIX CREATED BY OPTIMALSORT FROM CARD SORT STUDY RESPONSES.

DENDROGRAM: BEST MERGE METHOD

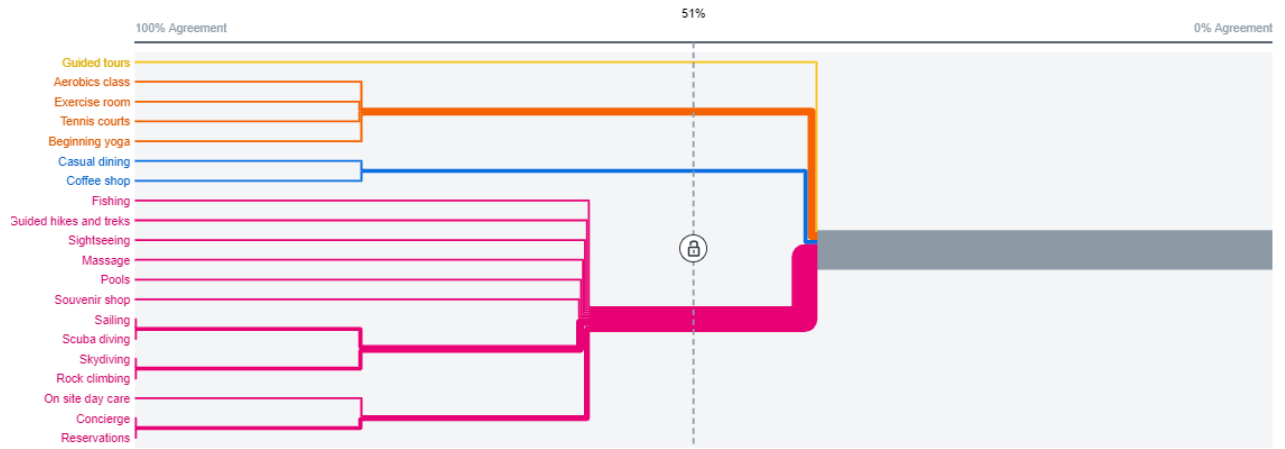


FIGURE 7: SCREENGRAB OF DENDROGRAM FOR BEST MERGE METHOD CREATED BY OPTIMALSORT FROM CARD SORT STUDY RESPONSES.

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APPENDIX A: SITE MAP OF PROPOSED CATEGORIES

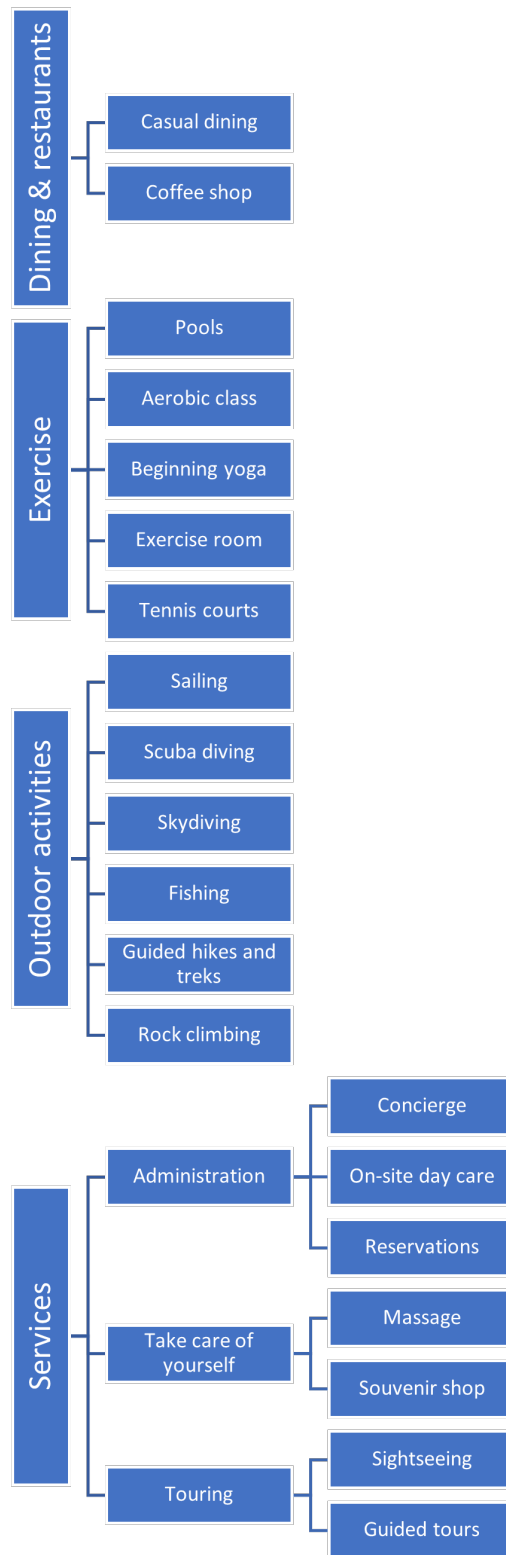


FIGURE 8: GRAPHIC SITE MAP OF SUGGESTED CATEGORIES, WITH TOP-LEVEL CATEGORIES ON THE LEFT AND PAGES AND ONE SUB-CATEGORY TO THE RIGHT.