

A background map of Chicago, Illinois, showing various neighborhoods, streets, and landmarks. The map includes labels for "WEST TOWN", "NEAR WEST SIDE", "PILSEN", "THE LOOP", "University of Illinois Chicago", "W ROOSEVELT RD", "GUARANTEED RATE FIELD", "S DUSABLE LAKE SHORE DR", "Washington Park", and "The University of Chicago". It also shows major highways like I-94 and I-90, and the "Outer Harbor" area. A scale bar at the top left indicates distances of 0, 0.5, and 1 mile. A weather widget at the bottom left shows a cloudy sky, 60°F, and an AQI of 41.

Expert Review: Heuristic Analysis of Apple Maps

Contents

Executive Summary	2
Introduction to the Analysis	2
Positive Findings	3
1. Strong Match between System and the Real World, and Real-Time Visibility of System Status	3
2. Recognition rather than Recall	4
3. Aesthetic and Minimal Design	4
Opportunities for Improvement & Recommendations	5
1. Lack of Search Bar in Location Details	5
2. Inefficient Access to 'Add to Favorites' Button in Location Details View	5
3. Redundant Edit Search Button in Table of Suggestions	5
5. App Logo Lacks Best Practices	6
6. Lack of Offline Access	6
Contributions to the Project	7

Executive Summary

This report provides a heuristic analysis of Apple Maps, a mapping service developed by Apple, with the aim of identifying usability issues and making recommendations based on their severity. The analysis revealed three positive findings in the existing design, including 1) a strong match between the system and the real world, 2) recognition rather than recall, and 3) an aesthetic and minimalist design. However, there were also six usability issues identified, including 1) the lack of search bar in location details, 2) inefficient access to 'Add to Favorites' button in location details view, 3) redundant edit search button in table of suggestions, 4) desktop browser interoperability leads to google maps for direction, 5) app logo lacks best practices, and 6) lack of offline access. Recommendations were made to address each of these issues, with the highest priority being given to the lack of search bar in location details and lack of offline access. The general themes of recommendations are to adjust the user flow by adding, removing, or redesigning the features to achieve better user experience, and to increase cross-platform and offline functionality.

Introduction to the Analysis

Apple Maps is an online mapping service developed by Apple. It is the default maps app for all of their portable devices.

Apple Maps offers several functions, including:

1. Flyover allows users to explore certain cities in a virtual 3D environment.
2. Siri Integration enables customers to utilize Apple's virtual assistant Siri to access Apple Maps using voice commands.
3. Indoor Maps provides precise floor plans and navigation within selected airports, retail malls, and other public facilities.
4. CarPlay Integration enables users to integrate Apple Maps with Apple's CarPlay, a feature that connects their iPhone to a compatible car's multimedia system for a smooth navigation experience while driving.
5. Cycling Directions offers users bike-friendly routes in certain regions, including information regarding bike lanes, bike pathways, and elevation changes.

This report aims to detect usability issues with Apple Maps and make recommendations based on the severity of the problem.

Our team members conducted an in-depth analysis of Apple Maps. The team compiled a list of three positive findings and a list of six usability issues with justifications and actionable recommendations. Team members then assessed the severity of each usability issue, ranging from "Low" (an issue that will not drastically affect effectiveness or efficiency) to "High" (an issue that will affect effectiveness and efficiency and requires action).

Positive Findings

For the strength analysis, we considered the three main stages of using Apple Maps: Application Exploration, Target Search, and Actual Navigation, and we analyzed the usability for all three stages using Nielsen Heuristics and identified three major strengths in the existing design:

1. Strong Match between System and the Real World, and Real-Time Visibility of System Status

At the exploration stage, the app offers detailed 3D rendered views of elevations, neighborhoods, buildings, trees, and road features to help users orient themselves and get a better sense of their surroundings (Figure 1, Figure 2).



Figure 1 3D View of JCL Building



Figure 2 3D View of Lower Manhattan

At the navigation stage: when driving, users will see real-time traffic, speed limits, and nearby speed cameras. Turn lanes, crosswalks, traffic lights and stop signs are also displayed in detail. When at a complex intersection, the app will switch to a 3D road-level perspective to provide better guidance (Figure 3); when taking public transportation, users will have real-time information about transit arrival and departure times and will be alerted when approaching their expected stops (Figure 4); when walking, users can scan their surroundings for step-by-step guidance in augmented reality (Figure 5).



Figure 3



Figure 4



Figure 5

2. Recognition rather than Recall

Apple Maps implements visual cues and icons to represent common actions and tends to reduce the user's cognitive load. One example is in giving driving instructions at the navigation stage: When close to making a turn, Apple Maps will refer to a nearby landmark and say, "go across next light and turn left at the next stop sign" For most, that is easier to follow than hearing from Google Maps' "after 0.4 miles you should turn left".

3. Aesthetic and Minimalist Design

Apple Maps applies a clean and minimalist design that limits the number of buttons, blocks or tabs at application main view as shown in Figure 6. There are only 2 buttons and a search bar for users' direct input. Any secondary information will show up once users decide to search. In contrast, Google Maps contains a search bar, over 10 buttons for various types of nearby places, 5 tabs for different services, Google's logo, and the latest nearby posts box constantly showing in the launch view (Figure 7).

With simple and intuitive navigation controls and a clear map view. Apple Maps reduces the user's cognitive load and makes it easier to focus on the task of navigating to their destination, rather than being distracted by unnecessary elements or clutter on the interface.

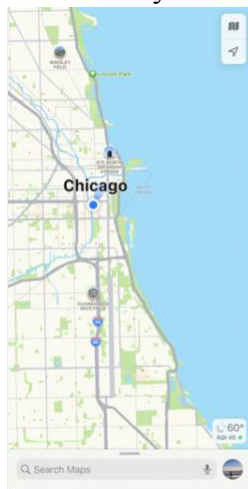


Figure 6 Apple Maps Main View

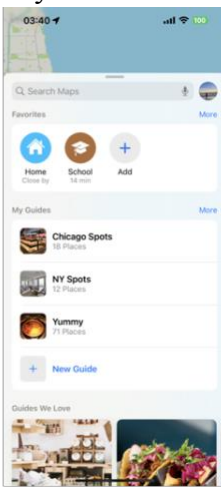
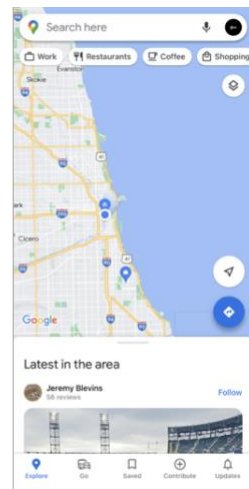


Figure 7 Google Maps Main View



Overall, Apple Maps demonstrates strong adherence to some of Nielsen's Heuristics for usability, providing a user-friendly and efficient application exploration, target discovery, and navigation experience for its users.

Opportunities for Improvement & Recommendations

1. Lack of Search Bar in Location Details

When a user is viewing the details of a location, there is no search bar to search for a new place. The user has to click “X” to close the card view of details and return to the previous screen to search again.

This violates Nielsen's heuristics principle of Flexibility and Efficiency of Use as the user needs to go through an additional step of navigating to the previous screen to search a new place which consumes extra time and effort. Our recommendation is that the interface should include a search bar in the card view because it reduces the physical effort and increases the efficiency.

Priority level: High. Users use Apple Maps to search for places and would like to refine their searches frequently.

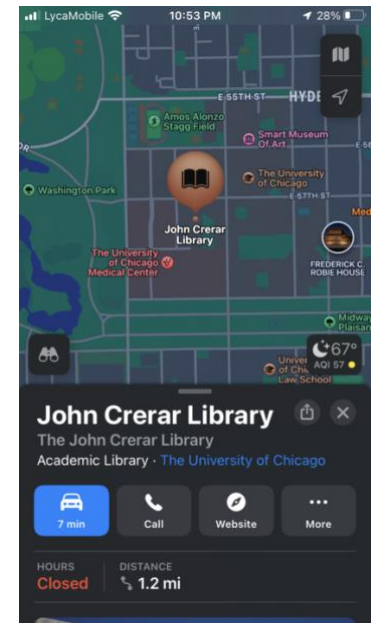


Figure 8

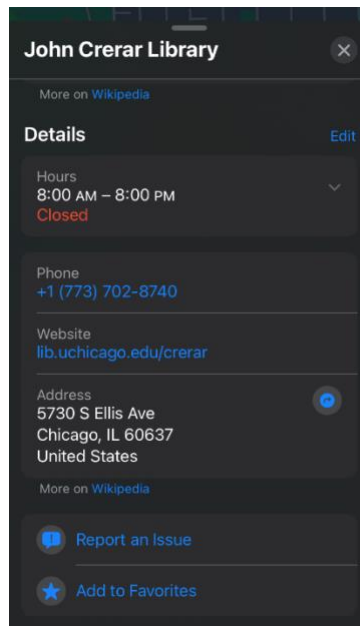


Figure 9

2. Inefficient Access to 'Add to Favorites' Button in Location Details View

In a card view, “Add to Favorites” is at the bottom of the card. It is not intuitive to the user at the beginning as they need to swipe down the card+ to find the add to favorites button.

This violates Nielsen's heuristics principle of Flexibility and Efficiency of Use as users need to scroll down the card to add to favorites. Our recommendation is that the interface should include an add to favorites button at the top of the card beside the place name.

Priority Level: Medium. Users frequently explore places and favorite the places they like.

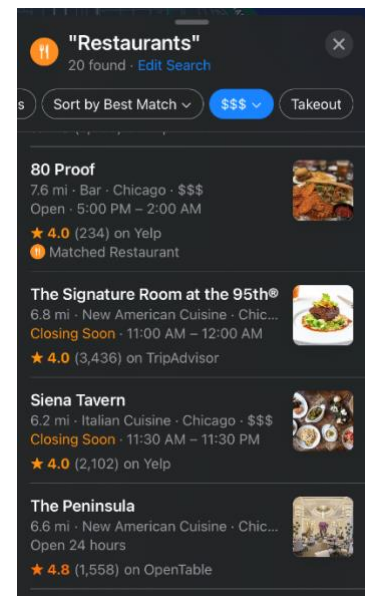
3. Redundant Edit Search Button in Table of Suggestions

The table of suggestions has redundant features to edit search. It has an edit search button as well as the “X” button to achieve the same functionality of navigating to the previous screen.

This violates Nielsen's heuristics principle of Consistency and Standards as it confuses the user on which functionality to use. Our recommendation is that the edit search button can be removed as “X” is more intuitive.

Figure 10

Priority Level: Low. Does not affect the app functionality.



4. Desktop Browser Interoperability Leads to Google Maps for Directions.

When a non-apple user is sent a location and tries to get directions. Upon following the links to get directions, the non-apple user clicks the blue “directions” button on the page and is taken to google maps for directions.



Figure 11 Opening the location from an email

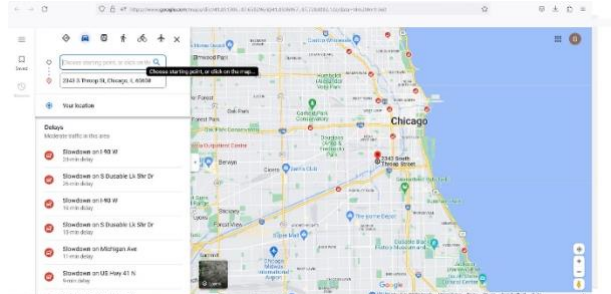


Figure 12 After clicking the “directions” button

This violates the Nielsen Heuristic to Use Consistent standards because the “directions” button is also used in the app to indicate getting directions within the app itself. Our recommendation is to change the wording on the button to be “*GET Directions from Google Maps*” or include some styling to indicate that the link is going to take you away from apple maps.

Priority Level: Medium. Affects non-apple user’s understanding of the app.

5. App Logo Lacks Best Practices

The app logo also breaks from industry standards laid out by Apple making it less visible in a crowded home screen. From Apple's best practices on app logo design. “Avoid adding too many details, because they can be hard to discern and can make an icon appear muddy, especially at smaller sizes. Prefer a simple background that puts the emphasis on the primary image — you don’t need to fill the entire icon with content.”



Figure 13

The full-bleed multi-color background of the app logo violates the Nielsen Heuristic to employ recognition rather than recall because rather than quickly scanning for the app, the user has to recall its position in the grid. Our recommendation is to redesign the app logo to include a margin with a logo/icon in the middle with high contrast background.

Priority Level: Low. Does not affect the usability of the app.

6. Lack of Offline Access

When traveling with a spotty connection or with bad service, the cache stores a helpful map of the search (Figure 14). However, with no connection when the user tries to look up the way back to where they were, a route cannot be shown (Figure 15).

Figure 14

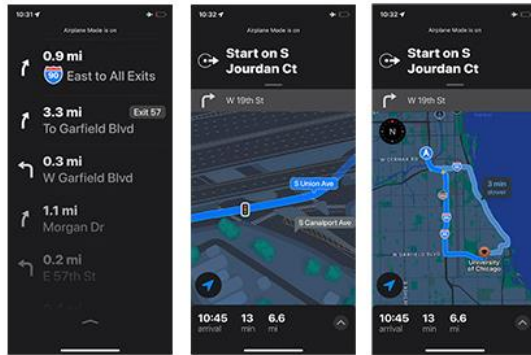
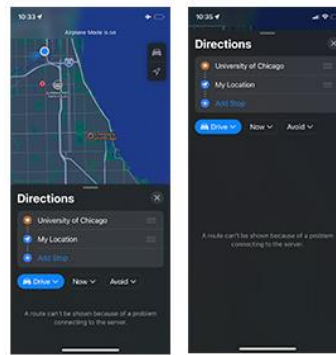


Figure 15



This lack of accessibility to maps violates the Nielsen Heuristic to handle error prevention because the user might have to stop in an area with low cellular service coverage or access to data. Our recommendation is to redesign the cache to include potentially helpful maps that can, at the very least, take you back to the last area of coverage.

Priority Level: High. Affects the usability of the app.

Overall, we identified the above six major points in violation of Nielsen's Heuristics. To provide better usability, we recommend further review and implementations in adding more accessible search-bar and “Favorite” button, removing redundant elements, redesigning the logo, and improving the cross-platform compatibility and offline functionality.