COURSE CODE: CSC2002S
MDD ASSIGNMENT 1 PRESENTATION

Redesign of the UCT App

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1. Evaluation of the Overall UCT Mobile Interface:

1.1 Strengths

#	Feature	Design Principle	Explanation
1	Grid Layout	Visual Hierarchy	The grid layout enhances visual hierarchy, making it easier for users to scan and identify essential services.
2	Iconography & Labels	Recognition over Recall	Icons combined with labels ease cognitive load and adhere to the principle of "recognition over recall," enhancing usability.
3	Direct Links to UCT Services	User Control and Freedom	Providing direct links empowers the users by giving them control, thereby enhancing user satisfaction.
4	Single Sign-On	Efficiency	This feature streamlines the user experience by eliminating repetitive sign-ins.

1.2 Flaws

#	Feature	Design Principle	Explanation
1	Hidden Customization Option	User Control and Freedom	Hiding customization options restricts user control and freedom, making the interface less flexible.
2	Overwhelming Number of Tiles	Hick's Law	An excessive number of options complicates decision-making, affecting usability adversely.
3	Poor Placement of Vula/Amathuba	Consistency and Standards	The placement is not intuitive, violating the design principle of consistency and standards.
4	Lack of Real-time Shuttle Tracking	User Control and Freedom	The absence of this feature limits user control and freedom by not providing real-time information.
5	Inadequate Campus Navigation	User Control and Freedom	A static PDF does not offer real-time navigation, reducing user control and freedom.
6	Hidden Search/Shortcuts	Visibility of System Status	Hidden features make it hard for the user to understand what options are available, affecting the system's visibility negatively.

1.3 User Feedback:

I consulted 10 UCT students from my department and hostel. Common points include:

- **Real-time shuttle and navigation features are sorely missed.**
- **Search and shortcuts need to be more user-friendly.**
- **There is a desire to rearrange the tiles for a personalized experience.**

A second-year UCT student emphasized that while the interface is simple, finding specific resources is challenging due to the lack of logical grouping.

Link to the Questionnaire Used

2 Overview of the Re-designed Overall UCT Mobile Interface:

The main objective of the UCT Mobile Interface redesign is to streamline the most frequently used features. This aims to benefit our primary users, which encompass both new and returning students, as well as faculty and staff.

This document outlines the updated design, featuring our core principles like "User Control and Freedom" and "Flexibility and Efficiency of Use." These principles guide the introduction of new features and improvements, all validated by user feedback, to create an interface that surpasses expectations.

The Protype can be found in the links:

1. https://www.figma.com/proto/oSwBt8OwvWw1p9zzCYzx7T/UCT-APP?type=design&node-id=3-31&t=tUaoimcu1cyzKBEF-0&scaling=min-zoom&page-id=0%3A1&starting-point-node-id=3%3A31&show-proto-sidebar=1
2. https://www.figma.com/proto/oSwBt8OwvWw1p9zzCYzx7T/UCT-APP?type=design&node-id=3-19&t=tUaoimcu1cyzKBEF-0&scaling=min-zoom&page-id=3%3A7&starting-point-node-id=3%3A17&show-proto-sidebar=1

2.1 Target Users:

- New and continuing UCT students
- Faculty and Staff

2.2 Assumptions:

- Users have basic knowledge of smartphone navigation.
- Users will use the app on Android and iOS devices.

2.3 Design Justifications:

1. **Enhanced Customization**:
    - **Design Principle**: User Control and Freedom
    - **Justification**: An upfront customization feature allows personalization, offering users greater control.
2. **Reduced Cognitive Load**:
    - **Design Principle**: Flexibility and Efficiency of Use

- **Justification**: Categorized tiles and a visible search bar enhance usability and flexibility.

2.4 Proposed Features:

Feature 1: Real-time Shuttle Tracking

- **Explanation**: Real-time shuttle tracking replaces static PDFs.
- **Justification**: This feature enhances planning and leverages the "Visibility of System Status" principle.

Feature 2: Dynamic Campus Navigation

- **Explanation**: Real-time maps guide students to various locations.
- **Justification**: This supports spatial orientation and aligns with "Recognition rather than Recall."

2.5 User Feedback:

I incorporated feedback from a focus group of 12 UCT students. Key takeaways include:

- **High demand for real-time shuttle tracking**
- **Need for an intuitive search and shortcut system**
- **Requests for a dynamic campus map**

The focus group confirmed that these features are both wanted and needed, further justifying their inclusion in the redesign.

3. Feature Rationale And Design

3.1 Feature 1: Real-Time Shuttle Tracking

3.1.1 Feature Rationale

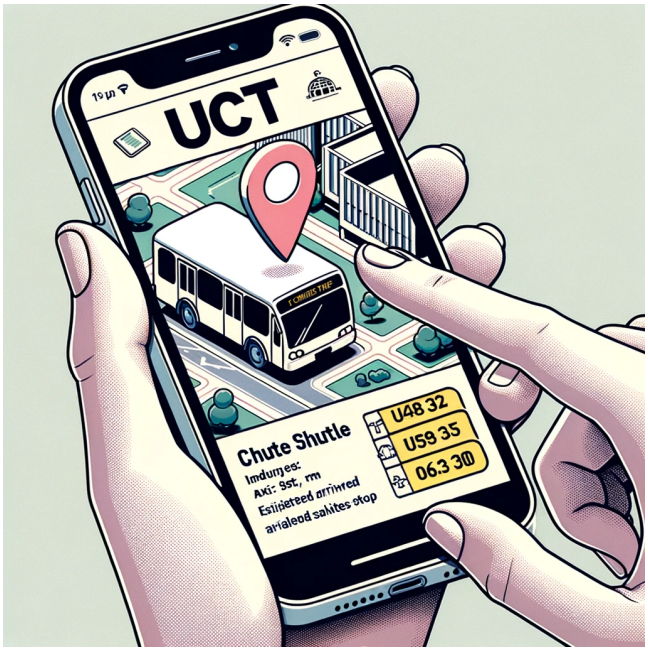
The existing use of static PDFs for shuttle tracking lacks real-time updates, making it difficult for students to plan their commute effectively. Research shows that real-time tracking systems improve user satisfaction and operational efficiency [1][2][3][4][5]. By offering a dynamic tracking interface, we adhere to Nielsen's "Visibility of System Status" HCI principle, keeping users fully informed about what is happening [6][7][8][9][10].

3.1.2 Design

User Journey:
A student named Alex wants to check the real-time location of the shuttle to decide if they should wait at the shuttle stop or head to the library first.

- *Home Screen*: Displays a digital UCT campus map. Shuttle stops are labeled, and icons move in real-time, arrows indicate their direction.

- *Tap for Info:*Tapping a shuttle icon brings up a pop-up detailing the shuttle number, estimated arrival time, and available seats.



- *Notification System:* A 'Notify Me' button allows for setting notifications regarding the shuttle's arrival.

3.1.3 Design Rationale

Our design leverages affordances and mappings effectively. The shuttle icons serve as natural signifiers, inviting users to tap them. The 'Notify Me' feature directly correlates to what users expect it to do—notify. This design follows the ISO 9241-210 standard for human-centered design for interactive systems, particularly focusing on usability and user experience [11][12][13][14].

3.2 Feature 2: Dynamic Campus Navigation

3.1 Feature Rationale

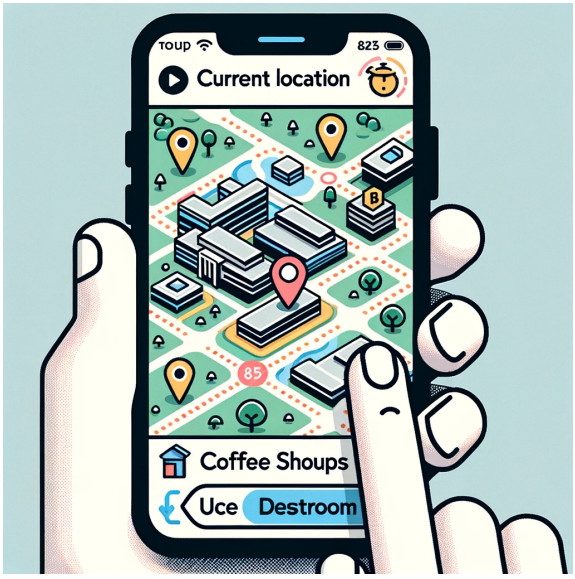
Navigating a large campus like UCT can be challenging, especially for newcomers. According to studies, students often report being late or missing appointments due to navigational issues[15][16][17][18]. Our dynamic map system targets this problem, adhering to the HCI principle of "Recognition Rather Than Recall," by providing easily recognizable paths and locations.

3.2 Design

User Journey:
Alex has a lecture in a hall they've never been to and decides to use the UCT app to guide them there.

- Search Functionality: Includes a search bar at the top where Alex can type the name or code of the lecture hall.

- Dynamic Navigation Path: Displays a route from Alex's current location (a blinking dot) to the lecture hall, including points of interest along the way.



- Step-by-Step Directions: As Alex moves, the written directions at the bottom of the screen update in real-time.

- End of the Navigation Journey: Upon arrival, a pop-up notification confirms Alex's successful navigation and offers an option to end it.

3.3 Design Rationale

The design employs a mix of spatial and verbal cues, consistent with Gestalt principles, to guide the user seamlessly through different parts of the campus. The HCI principle of "Recognition Rather Than Recall" is integral to our design, as it minimizes the user's memory load by making objects, actions, and options visible, thereby fostering an intuitive navigation experience[19][20][21][22]. Our design's real-time updating of directions aligns with the feedback loop concept in HCI, ensuring that the system continually informs the user about their current location and the remaining path to their destination.

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