2024

TRU RESEARCH HUB KIOSK APP

REQUIREMENTS

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1. Problem Space

Identifying Problems with the Existing Product

The TRU Research Hub relies on a paper-based system to track visitor entries and exits. This antiquated method presents several significant issues, impacting operational efficiency and data accuracy. The core problems include manual data entry, visitor compliance, data accuracy, and reporting.

One primary issue is the time-consuming nature of manual data entry. Staff members must spend substantial time transcribing handwritten entries into digital formats. This manual process is time-consuming, diverting staff from more critical tasks and introducing the potential for transcription errors that can affect the integrity of the data. These errors can compromise the accuracy and reliability of the visitor logs, which are crucial for accountability and reporting.

Visitor compliance is another significant problem. Many visitors overlook the sign-in sheet entirely, either because it is not prominently displayed or because the process of filling it out is inconvenient and time-consuming. This lack of compliance results in incomplete data collection, which further hampers the hub's ability to maintain accurate records.

Data accuracy is a major concern as handwritten entries can often be illegible and the manual transcription process introduces additional opportunities for mistakes. These issues make it difficult to ensure the integrity of the collected data, which is essential for generating accurate reports and making informed decisions.

Finally, the process of reporting is complicated by incomplete and inaccurate data. The manual system makes it challenging to compile comprehensive visitor logs, and the errors inherent in the process further complicate efforts to generate reliable reports. This lack of accurate data affects the hub's ability to allocate resources effectively and maintain accountability.

Problems with Existing Visitor Management Systems

While there are numerous digital visitor management systems (VMS) available, they are not without their own set of challenges. Many existing VMS, such as Envoy, iLobby, and Proxyclick, are designed for large enterprises and come with a host of features that may not be necessary or practical for a research hub setting

Many VMS, such as Envoy and iLobby, offer comprehensive features like visitor sign-in, badge printing, and notifications. However, these systems can be overly complex for the needs of smaller institutions like the TRU Research Hub. Their extensive features can overwhelm users and require significant training for staff, which might not be viable for a smaller organization.

Existing VMS often do not integrate seamlessly with the specific tools and systems already in use at the TRU Research Hub. For example, while iLobby provides robust visitor tracking and compliance management, it may not integrate well with the Microsoft 365 suite used extensively by the hub. This lack of integration can lead to siloed data and additional manual steps to synchronize data across platforms, negating some of the efficiencies gained from automation.

Systems like Proxyclick offer strong security and compliance features but lack the flexibility needed to tailor the system to the unique needs of the TRU Research Hub. Customization is often essential to address specific operational workflows and user experiences. Without the ability to adapt the system to fit the hub's requirements, these VMS can be less effective and harder to adopt.

In essence, the complexity of existing systems coupled with the lack of integration and customization, make them a very impractical to be implemented is a smaller setting such as the Research Hub.

Reasons for Problems

In the case of the TRU Research Hub, the current paper-based system fails to provide an intuitive or engaging experience for visitors. This lack of engagement is a significant factor in the low compliance rates, as visitors may find the process of filling out a paper form to be tedious or irrelevant. Existing digital systems provide complex interfaces, non-intuitive workflows, and a lack of user-centered design which lead to frustration among users, particularly those who are not tech-savvy.

Proposed Design Solutions

In order to address these challenges, the proposed digital sign-in/sign-out kiosk application for the TRU Research Hub will focus on enhancing both functionality and user experience. The application will be designed with a user-centered approach, prioritizing ease of use and accessibility. This will include an intuitive interface that is easy for visitors to navigate, reducing the likelihood of user error and improving compliance rates. The application will also incorporate features such as touch-screen compatibility and interactive elements to create a more engaging and efficient experience for visitors. The automation of visitor tracking will reduce the burden on staff and improve data accuracy. The integration of real-time data synchronization with Microsoft 365 will ensure that visitor information is up-to-date and readily accessible for reporting and analysis.

The proposed digital sign-in/sign-out kiosk application will support current methods by providing a more efficient alternative to manual sign-in sheets. This will streamline the visitor tracking process, reduce the need for manual data entry, and improve the accuracy and reliability of visitor logs. The automation of the sign-in process enables staff to allocate their time to more critical tasks, enhancing overall productivity and reducing operational costs. The digital system will be more visible and interactive compared to traditional paper sheets, making it easier for visitors to use and reducing the likelihood of incomplete records.

Additionally, the application will extend the capabilities of the current system by integrating real-time data synchronization and advanced analytics. Real-time synchronization with Microsoft 365 will ensure that visitor data is updated immediately across all platforms, always providing staff with up-to-date information. These features will not only improve the operational efficiency of the research hub but also enhance its ability to generate accurate and comprehensive reports.

Assumptions and Claims

The development of the digital kiosk application is based on several assumptions:

1. Digital interfaces are inherently more user-friendly and will encourage visitor compliance compared to manual sign-in sheets.
2. Automated systems are more accurate and efficient than manual data entry, reducing the risk of errors and improving data reliability.

3. Enhanced data accuracy, achieved through digital entry and real-time synchronization, will improve operational efficiency and reduce the workload on staff.
4. The digital kiosk can streamline the visitor tracking process by automating sign-ins and sign-outs, making the process quicker and more efficient.

Conceptual Model, Interface Metaphors and Interaction Types

The conceptual model for the TRU Research Hub Cross-Platform Sign-In/Sign-Out Kiosk is designed to provide a seamless and efficient visitor management experience. At the heart of the system is the sign-in/sign-out process, which forms the core interaction between the user and the system. Visitors interact with the kiosk by following on-screen prompts, entering their information directly through a digital form (replacing the traditional paper form), and receiving confirmation of their successful sign-in or sign-out. The interaction is immediate, direct, and intuitive, requiring minimal effort from the user, akin to interacting with a digital receptionist. The model is structured around four main components:

1. User Interaction with the Kiosk - Visitors physically interact with the kiosk through a touch-screen interface. This interaction allows them to sign in, sign out, and provide any required information such as name, contact details, and purpose of visit.
2. Data Processing and Synchronization - The system processes the input data and synchronizes it in real-time with Microsoft 365 Dataverse, ensuring that visitor information is up to date across all platforms and easily accessible by Research Hub staff.
3. Data Storage and Management - Visitor logs are securely stored in the Dataverse. The system ensures data integrity and security by using encrypted storage, adhering to privacy regulations like GDPR, and providing easy retrieval of information for reporting purposes.
4. Reporting and Analytics - Through integration with Microsoft Power BI, the system analyzes stored data to generate visual reports on visitor activity, demographics, and peak times, helping Research Hub staff make data-driven decisions.

To further explain this model, the application utilizes the metaphor of a "receptionist" to guide users through the sign-in/sign-out process. Just as a receptionist might greet visitors and record their information, the kiosk provides a similar service, guiding users through the steps of signing in and recording their data digitally. Instead of interacting with a person, users interact with a screen that replicates the steps they would take if speaking to a receptionist: they provide their

information, confirm their details, and receive acknowledgment that their visit has been logged. This metaphor helps users understand the role of the kiosk as a facilitator of their visit.

Users will interact with the kiosk primarily through direct manipulation. This interaction type involves touch-screen inputs, where users can tap, swipe, and select options directly on the screen. Direct manipulation is intuitive and aligns with users' natural behaviors, making it an effective interaction type for the kiosk application. Through a graphical user interface, it provides immediate feedback, enhancing the user experience by making interactions feel responsive and engaging.

Instead of filling out paper forms, users will complete digital forms on the kiosk. This interaction simplifies the data entry process, ensuring that information is collected in a structured and standardized manner. The digital forms will include fields for essential visitor information, such as name, contact details, and purpose of visit.

2. Establishing Requirements

Goals of Data Gathering

The primary goals of data gathering are to understand visitor preferences and identify the pain points associated with the current sign-in/sign-out system at the TRU Research Hub. This will provide an understanding of what features users value most in a VMS. This will inform the design of a more efficient and user-friendly digital kiosk, ensuring the final product meets their needs and desires.

Identifying Participants

Participants for this data gathering phase will include both visitors to the Research Hub and the staff members who manage the sign-in process. Visitors will provide insights into their experiences and expectations, while staff members will offer valuable perspectives on operational challenges and requirements. The involvement of both groups will assist in gathering comprehensive data that addresses all aspects of the system's usage and management. The following personas illustrate different user profiles for the TRU Research Hub, each with distinct traits and motivations that will inform the design of the digital kiosk.

Sarah

"I don't want to spend more than 30 seconds signing in."

Age: **22**
Work: **Student**
Family: **Single**
Location: **Kamloops, BC**
Visit Frequency: **3-4 times a week**

Organized | Studious | Reserved

Goals

- Quickly sign in and out of the TRU Research Hub
- Ensure that her personal information is secure and handled responsibly when she signs in.

Bio

Sarah is a full-time undergraduate student at TRU, majoring in Computer Science. She frequently visits the TRU Research Hub to work on her assignments, collaborate with peers on projects, and conduct research for her courses.
As a tech-savvy individual, Sarah is comfortable using digital devices and prefers systems that are intuitive, quick, and efficient. She typically visits the hub two to three times per week, often during the afternoon when it's less crowded.

Frustrations

- Finds the current paper-based sign-in system inefficient and time-consuming.
- Has privacy concerns when signing in manually, as the sign-in sheet is visible to other visitors

Motivations

Efficiency
Privacy-Conscious
Tech-Savvy
Time-Conscious

James

"I wan to focus on other aspects of my job"

Age: **45**
Work: **Research Hub Manager**
Family: **Married with 2 kids**
Location: **Kamloops, BC**
Visit Frequency: **Daily**

Detail-Oriented | Goal-Focused | Efficiency-Driven

Goals

- Manage sign-in data without spending excessive time on manual entry.
- Wants a digital kiosk that is easy to use and reliable

Bio

James is the Research Hub Manager, responsible for overseeing daily operations at the TRU Research Hub. His role involves managing visitor data, tracking usage statistics, and ensuring the smooth operation of the hub's services and resources.
James regularly interacts with both visitors and staff, coordinating schedules and ensuring that resources are properly allocated. He is familiar with the technology used within the hub, but prefers systems that are reliable, efficient, and easy to use, as his role demands juggling multiple tasks at once.

Frustrations

- Manually transcribing visitor logs into digital formats.
- when software is overly complex or frequently malfunctions.

Motivations

Efficiency
Privacy-Conscious
Tech-Savvy
Time-Conscious

Data Gathering Techniques

The data gathering for the requirements of this project will take place through questionnaires and direct field observations.

Questionnaires

Questionnaires will be distributed to a sample of 10 visitors and staff to the Research Hub. The questionnaires will be designed to capture a wide range of information, including demographic data, and targeted data to determine ease of use of the current system, preferred features, and any challenges faced with the current sign-in/sign-out process. Below is the initial draft of the questionnaire.

Purpose: This questionnaire aims to gather feedback from visitors and staff at the TRU Research Hub regarding the current sign-in/sign-out process and to identify features and improvements for a new digital kiosk system. This questionnaire should take less than 5 minutes to complete.

Section 1: Demographic Information

1. **Age Range:**
   - ☐ 12-17
   - ☐ 18-24
   - ☐ 25-34
   - ☐ 35-44
   - ☐ 45+
2. **Gender:**
   - ☐ Male
   - ☐ Female
   - ☐ Non-binary/Third gender
   - ☐ Prefer not to say
3. **Your Role in the Hub:**
   - I am a student
   - I am a staff member
   - I am Visitor

Section 2: Current Sign-In/Sign-Out System

4. **How often do you visit the TRU Research Hub?**
   - Daily
   - Weekly
   - Monthly
   - Occasionally
5. **On a scale of 1-5, how easy is it to locate the current sign-in sheet?**
   - Very Easy
   - Easy
   - Neutral
   - Difficult

- Very Difficult

6. **How often do you complete the sign-in/sign-out process when visiting the hub?**
    - Always
    - Often
    - Sometimes
    - Rarely
    - Never
7. **What challenges do you face with the current sign-in/sign-out process? (Select all that apply)**
    - Difficulty locating the sign-in sheet
    - Time-consuming process
    - Lack of privacy when signing in
    - Forgetting to sign out
    - None
    - Other (Please specify): _____
8. **How satisfied are you with the current sign-in/sign-out process?**
    - Very Satisfied
    - Satisfied
    - Neutral
    - Dissatisfied
    - Very Dissatisfied

Section 3: Preferences for a Digital Kiosk System

9. **Which of the following features would you value most in a digital sign-in/sign-out system? (Select up to three)**
    - Quick and easy sign-in process
    - Automatic sign-out reminders
    - Real-time visitor data updates
    - Secure data storage and privacy
    - Touch-screen interface
    - Integration with calendar/scheduling systems

- Customizable sign-in options (e.g., visitor type, reason for visit)
- Visitor notifications (e.g., confirmation emails)

10. **How important is it to you that the sign-in/sign-out process is fast?**
    - Extremely Important
    - Very Important
    - Moderately Important
    - Slightly Important
    - Not Important
11. **How likely are you to use a digital sign-in/sign-out kiosk if implemented?**
    - Extremely Likely
    - Very Likely
    - Moderately Likely
    - Slightly Likely
    - Not Likely
12. **How concerned are you about the privacy of your data when using a digital sign-in system?**
    - Extremely Concerned
    - Very Concerned
    - Moderately Concerned
    - Slightly Concerned
    - Not Concerned
13. **Would you prefer to sign in/out manually or use a digital system?**
    - Strongly Prefer Manual
    - Prefer Manual
    - Neutral
    - Prefer Digital
    - Strongly Prefer Digital
14. How would you rate the following aspects of a potential digital sign-in/sign-out system? (Rate on a scale from 1 to 5, where 1 = Very Poor and 5 = Excellent)

    Ease of Use: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5

    Speed of Process: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5

Data Privacy: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5

Visual Design: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5

Section 4: Additional Feedback

15. **Do you have any other suggestions or comments regarding the sign-in/sign-out process at the TRU Research Hub?**

Thank you for your participation! Your feedback is invaluable in helping us improve the TRU Research Hub's visitor management system.

This questionnaire utilizes a mixture of closed and open-ended questions to collect consistent data from all participants, making it easier to analyze and compare responses.

Direct Observation in the Field

Direct observation involves watching visitors as they interact with the current sign-in system in real-time. A series of 15 randomized visits to the hub will be monitored. This technique allows the identification of issues that may not be apparent from questionnaire responses alone, such as body language indicating frustration or confusion, the time taken to complete the sign-in process, and any physical obstacles that might impede access to the sign-in sheet. The observation will focus on capturing:

1. How visitors approach and locate the sign-in sheet.
2. The duration of the sign-in process.
3. Any assistance provided or needed during sign-in.
4. Behavioral cues indicating satisfaction or dissatisfaction with the process.

Direct observation provides rich, qualitative data that complements the quantitative data collected through questionnaires, offering a more holistic view of the user experience.

Pilot Studies

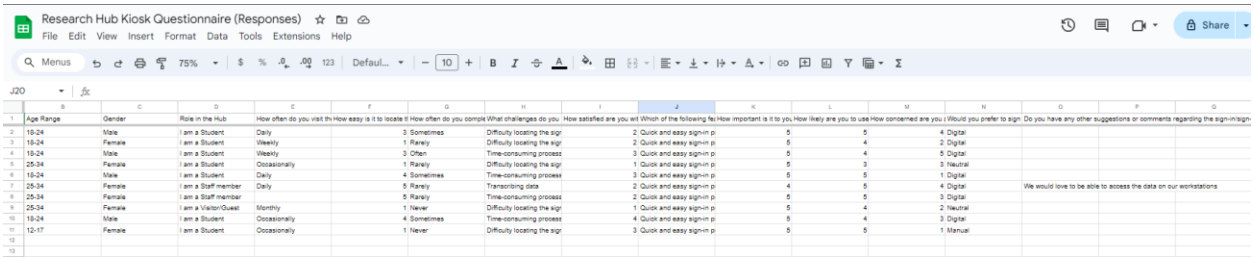
Once the data gathering tools were developed, a pilot study was conducted with a small group of four participants, consisting of both visitors and staff at the TRU Research Hub to refine the questionnaire and direct observation protocol. The pilot aimed to identify any issues with the clarity of the questions, the relevance of the options provided, and the overall flow of the questionnaire. Additionally, direct observations were carried out during the participants' interaction with the current paper-based sign-in system to assess the practicality of the observation criteria.

The pilot study provided valuable insights, revealing that most participants found the questionnaire clear and easy to understand. However, feedback indicated that question 14 was redundant and was removed, as its concerns were already addressed in earlier questions. Additionally, some participants suggested clarifying the response options for questions using a "scale of 1-5" to explicitly indicate which number corresponded to each response.

During direct observation, it was noted that very few participants signed out afterward, leading to the decision to monitor the sign-out rate more closely. Based on this feedback, the questionnaire and observation protocol were refined to better capture the necessary data. Based on this feedback, the questionnaire and observation protocol were refined to better capture the necessary data.

Data Collection and Analysis

After refining the tools, the full-scale data collection was conducted with 10 participants, selected to represent a diverse range of ages, roles, and frequency of visits to the TRU Research Hub. The data was collected through the finalized questionnaires via Google Forms and direct observations as participants interacted with the current sign-in system.

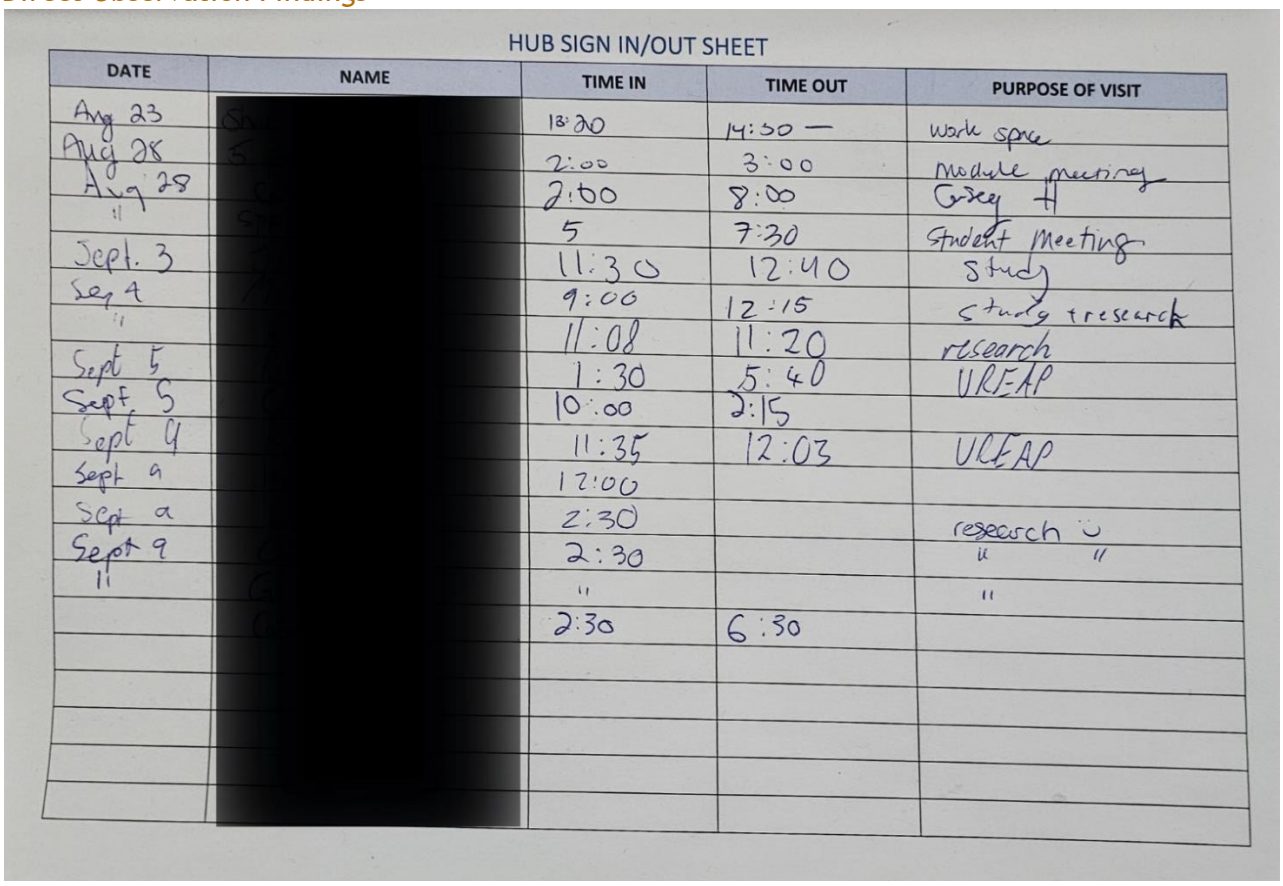


Research Hub Kiosk Questionnaire (Responses)

Age Range	Gender	Role in the Hub	How often do you visit th	How easy is it to locate t	How often do you comple	What challenges do you	How satisfied are you wi	Which of the following fe	How important is it to you	How likely are you to use	How concerned are you	Would you prefer to sign	Do you have any other suggestions or comments regarding the sign-in/sign-
18-24	Male	I am a Student	Daily	3 Sometimes		Difficulty locating the sig	2 Quick and easy sign-in p		5	5	4	4 Digital	
18-24	Female	I am a Student	Weekly	1 Rarely		Difficulty locating the sig	2 Quick and easy sign-in p		5	4	2	2 Digital	
18-24	Male	I am a Student	Weekly	3 Often		Time-consuming process	3 Quick and easy sign-in p		5	4	5	5 Digital	
25-34	Female	I am a Student	Occasionally	1 Rarely		Difficulty locating the sig	1 Quick and easy sign-in p		5	3	3	3 Neutral	
18-24	Male	I am a Student	Daily	4 Sometimes		Time-consuming process	3 Quick and easy sign-in p		5	5	1	1 Digital	
25-34	Female	I am a Staff member	Daily	5 Rarely		Transcribing data	2 Quick and easy sign-in p		4	5	4	4 Digital	We would love to be able to access the data on our workstations
25-34	Female	I am a Staff member		5 Rarely		Time-consuming process	2 Quick and easy sign-in p		5	5	5	3 Digital	
25-34	Female	I am a Visitor/Guest	Monthly	1 Never		Difficulty locating the sig	1 Quick and easy sign-in p		5	4	4	2 Neutral	
18-24	Male	I am a Student	Occasionally	4 Sometimes		Time-consuming process	4 Quick and easy sign-in p		5	4	3	3 Digital	
12-17	Female	I am a Student	Occasionally	1 Never		Difficulty locating the sig	3 Quick and easy sign-in p		5	5	1	1 Manual	

Spreadsheet of Collected Data from Questionnaire

Direct Observation Findings



HUB SIGN IN/OUT SHEET

DATE	NAME	TIME IN	TIME OUT	PURPOSE OF VISIT
Aug 23	[redacted]	13:20	14:50	work space
Aug 28		2:00	3:00	module meeting
Aug 28		2:00	8:00	Essay
"		5	7:30	Student Meeting
Sept. 3		11:30	12:40	study
Sep 4		9:00	12:15	study research
"		11:08	11:20	research
Sept 5		1:30	5:40	UREAP
Sept. 5		10:00	2:15	
Sept 4		11:35	12:03	UREAP
Sept a		12:00		
Sept a		2:30		research
Sept 9		2:30		" "
"		"		"
		2:30	6:30	

Manual Sign-In Sheet with Incomplete entries from Direct Observation

The goal of the observation was to understand how visitors locate, interact with, and complete the sign-in process, as well as their satisfaction or dissatisfaction with the overall process. Here are the detailed findings based on the observational goals:

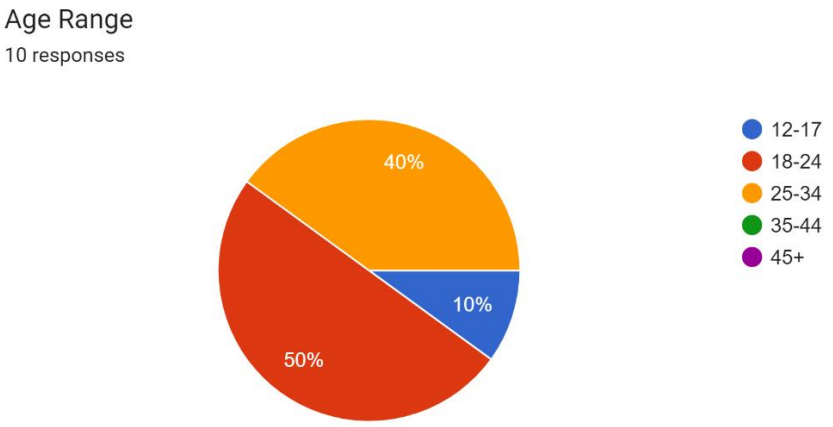
- **Locating the Sheet**: Several visitors (75%) did not notice the sign-in sheet at all until they were either reminded by a staff member or saw another visitor signing in. This suggests that the current setup lacks prominence and may not immediately draw attention from visitors.
- **Sign-In Process Duration**: On average, the process took 2 minutes per visitor, depending on how much information was required (name, time of arrival, contact details). Visitors had to write their information by hand, which led to variability in the duration.
- **Sign Out Rate**: About 30% of observed visits where not signed out which creates incomplete data that the staff will need to process and report. This signals that user may need additional assistance in the form of reminders to prompt them to sign out.
- **Assistance Required**: A third of the visitors observed needed some form of assistance. Most of the time, this assistance came from nearby staff members who pointed out which fields to complete on the form.
- **Behavioral Observations**: Behavioral cues suggested a general lack of satisfaction with the process. The inconvenience and time-consuming nature of the manual process likely contributed to this frustration. Common behaviors included visible frustration when locating the sheet, repeated glances around the room looking for assistance, and sighs of impatience while completing the form.

Demographic Data

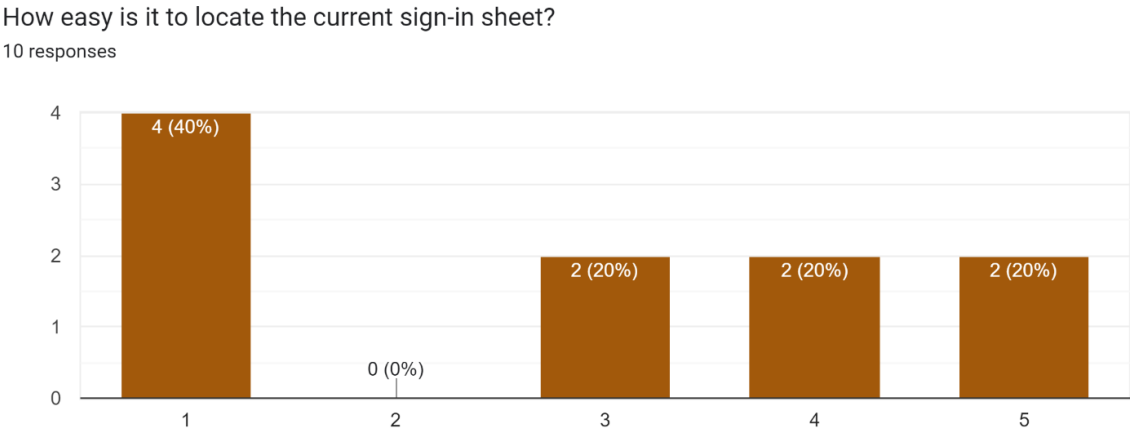
The participants included:

- **Age Range**: 5 participants (50%) were in the 18-24 age group, 4 participants (40%) aged 25-34, and 1 participant (10%) aged 12-17.
- **Gender**: 4 male (40%) and 6 female (60%) participants
- **Role**: 7 were students, 2 were staff and 1 was a visitor.

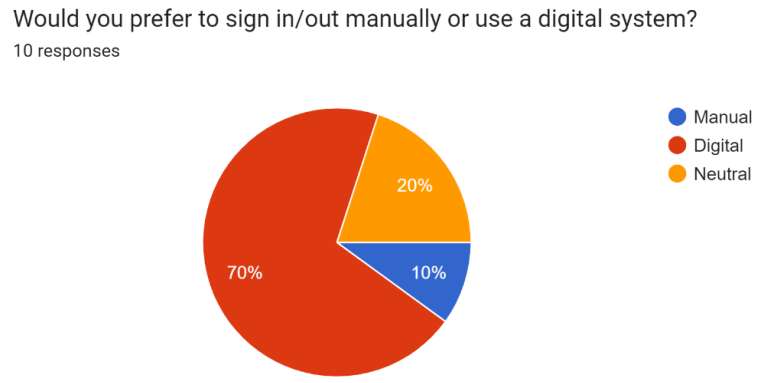
Targeting Data



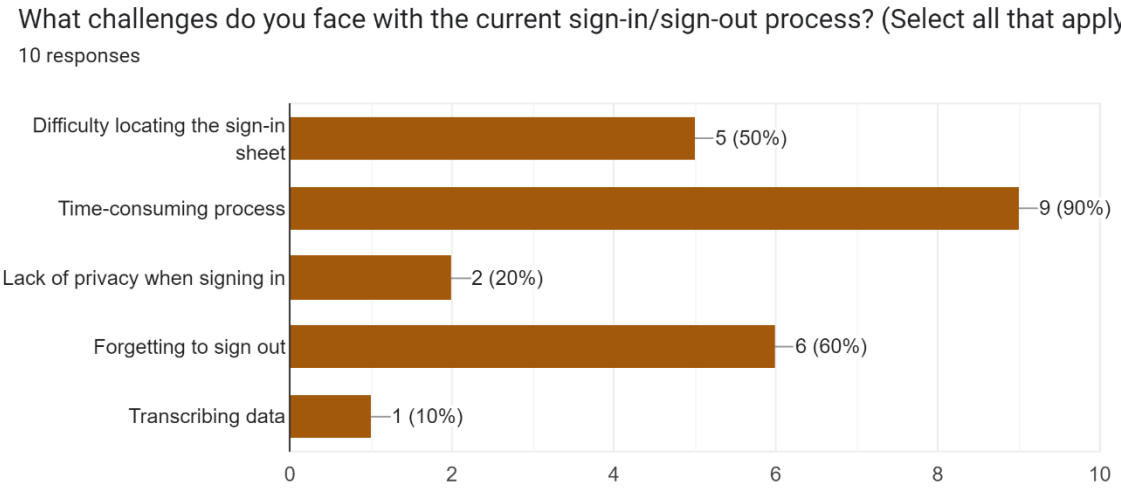
The analysis of the collected data revealed several key insights. Most respondents, 50%, were in the 18-24 age range, indicating that younger students are the primary users of the TRU Research Hub. This demographic is generally more comfortable with technology, suggesting that a well-designed digital system would likely be well-received. In terms of visit frequency, 55% of users visit the hub weekly, with 22% visiting daily. This high frequency stresses the need for an efficient sign-in/out process that can accommodate regular users without causing frustration.



However, the ease of locating the current sign-in sheet varied among respondents. While 20% found it very easy to locate, 40% reported difficulty, suggesting inconsistency in the visibility or placement of the sign-in sheet. This inconsistency points to the need for a more standardized and accessible solution. Privacy concerns were significant, with 60% of respondents expressing that they were extremely or very concerned about the privacy of their data. This finding highlights the importance of incorporating strong privacy protections and clear communication about data security in the new system.

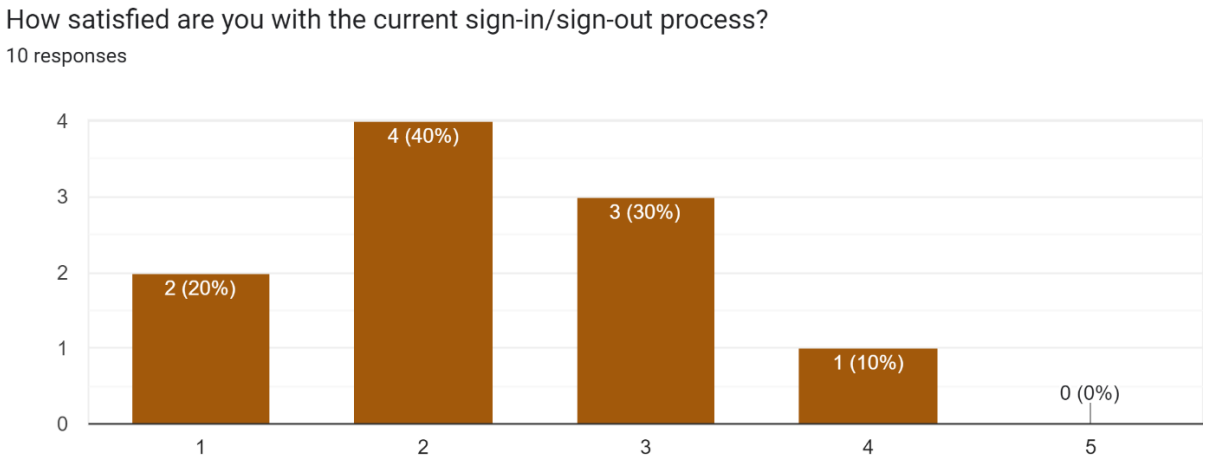


When it came to preferences for manual versus digital sign-in, 70% of respondents strongly preferred a digital system. However, a portion of users remained neutral or preferred the manual process. This suggests that while a digital solution is desirable, it must be user-friendly and possibly include a manual backup option for those who prefer it or when the digital system is unavailable.



The qualitative analysis, derived from both the questionnaire comments and direct observations, further emphasized these points. Common issues identified included difficulty in locating the sign-in sheet, the time-consuming nature of the process, and concerns about privacy when signing in. These insights indicate a strong need for a more accessible, faster, and private sign-in process. Although many respondents left the comment section of the questionnaire blank, those who did provide feedback consistently mentioned the need for a faster process and better privacy controls. This qualitative feedback supports the quantitative findings and reinforces the importance of addressing these specific pain points in the new system.

Findings

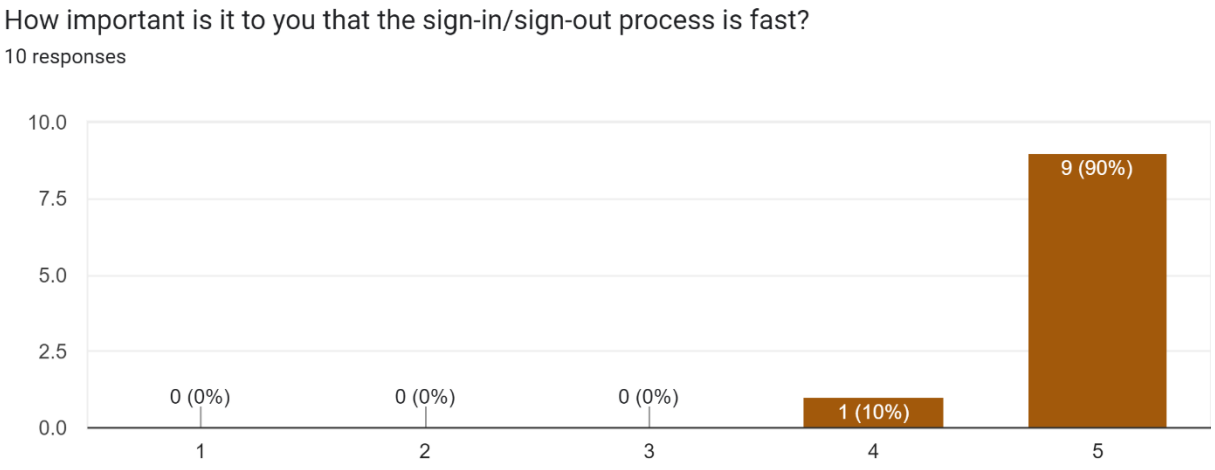


The data analysis highlighted numerous critical issues with the current sign-in system that could explain the dissatisfaction expressed by at least 60% of respondents as shown above.

First, there is an inconsistent ease of use; the process of locating and completing the sign-in is not straightforward for all users, leading to frustration. A digital system could standardize and simplify this process, ensuring that it is easily accessible to everyone.

Second, there are significant privacy concerns that must be addressed in the new system, likely through the implementation of robust encryption and transparent data-handling policies.

Third, while there is a clear preference for a digital sign-in system, there should still be provisions for users who prefer a manual option.

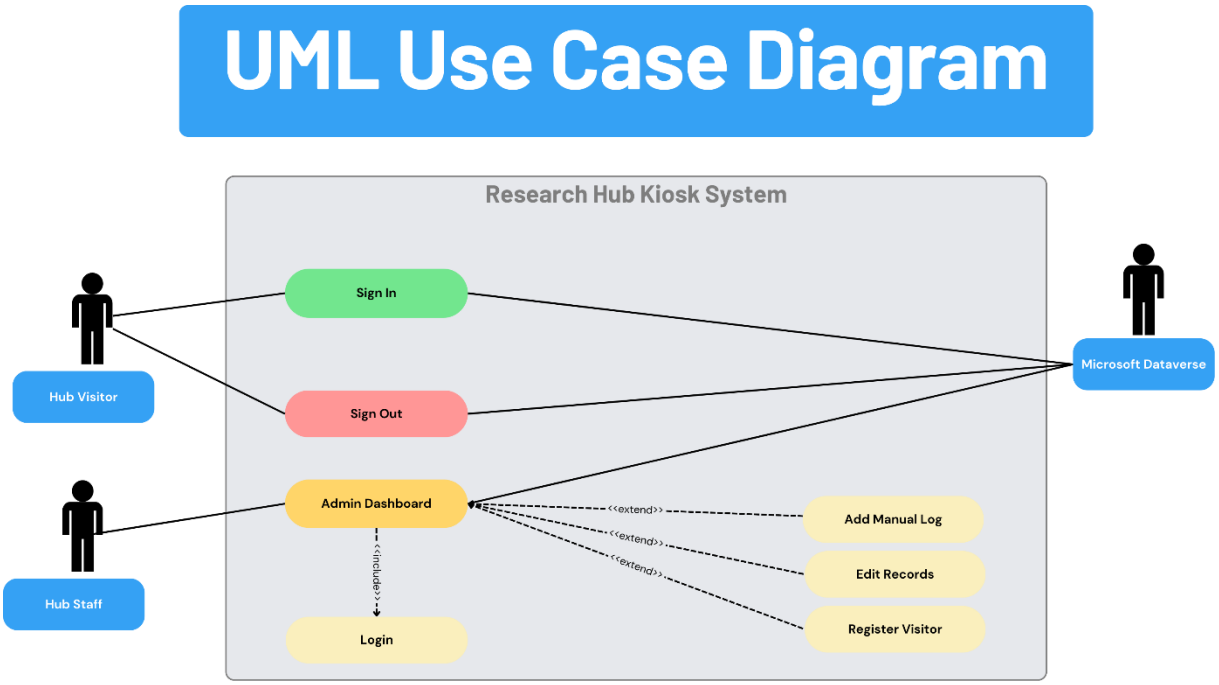


Finally, the need for efficiency is paramount. Through direct observation it was revealed that, the average time taken to sign in was approximately 2 minutes, with some participants requiring assistance in finding the current time or the appropriate reason for visit. This time-consuming aspect of the process contributed to the overall dissatisfaction recorded in the questionnaire and observation. Questionnaire responses indicate that 100% of participants value speed in a VMS. This implies that sign-in process should be quick, especially for frequent users, to reduce time consumption and improve the overall user experience.

Task Description

Scenario: Bensly is a 20-year-old student who visits the TRU Research Hub twice a week for study sessions. He is often in a rush to find a quiet space to study, wants to quickly sign in without any hassle. His primary concern is to complete the sign-in process efficiently while ensuring that his personal data is secure.

Use Case



Upon arrival at the hub, the student approaches the digital kiosk. The kiosk immediately prompts them to sign in, and the student quickly enters their details. The system securely logs the sign-in and provides a confirmation of completion, allowing the student to proceed with their study session without delay.

ID:	UC-001
Title:	Sign In
Primary Actor:	Hub Visitor
Preconditions:	Visitor is already registered by a staff member.
Postconditions:	Visitor signed in successfully. Visitor appears on sign out screen.

Main Success Scenario:	1. The kiosk displays a "Sign In" button, and the visitor selects it. 2. The system prompts the visitor to input their name, purpose of visit, and any other relevant information. 3. After entering the required details, the visitor taps "Submit" and the system confirms their sign-in with a success message and a visual cue.
Alternative Flows:	Incorrect Input 1. If the visitor enters incorrect or incomplete details, the system provides feedback, indicating the issue. 2. The visitor corrects the input and proceeds with the sign-in.
Frequency of Use:	Able to check in/out about 50 visitors per day.
Owner:	OVPR Research Hub
Priority:	High (10)

Essential Use Case

The system must enable fast and secure sign-ins. It should present a clear and accessible sign-in prompt, minimize the steps required to complete the process, provide immediate feedback on successful sign-in, and ensure that all data is encrypted and handled securely.

User Intention	System Responsibility
Sign In to the Research Hub	Request Name, Reason and Comments
Supply Required Information	Save visit record on the Dataverse
Obtain check-in confirmation	Display success or failure message

Key Requirements

The following requirements for the TRU Research Hub Kiosk Application are derived from the issues identified through user interviews, questionnaires, and field observations.

Functional Requirements

1. The system must be quick and easy to use, allowing users to complete the sign-in/out process with minimal steps in less than 30 seconds.
2. The system should include features such as automatic sign-out reminders to ensure that users do not forget to sign out.
3. The system shall securely update visitor data in real-time across integrated platforms to ensure accuracy and accessibility.
4. The system shall provide the staff with a dashboard to manage visitor records.
5. The system shall allow visitors to be registered to reduce time required to fill out forms.

Data Requirements

1. The system must store visitor data securely using Microsoft 365 Dataverse, with strong encryption protocols to protect privacy.
2. The system shall have built-in validation to prevent errors and ensure all entries are legible and correctly formatted,
3. The system should also limit data collection to only what is necessary, addressing privacy concerns and ensuring users feel confident in the system's security.

Environmental Requirements

1. The application must run smoothly on mobile tablets, ensuring a consistent user experience across devices.
2. The system must include security features to protect against unauthorized access, ensuring that sensitive visitor information remains confidential.
3. The system must also be designed to handle high traffic, particularly during peak times, to maintain efficiency and avoid delays.

4. The kiosk should be placed in a prominent and accessible location within the hub to ensure that it is easy to find and use.
5. The kiosk should operate in environments where network access may be inconsistent. As such, the system must store data temporarily offline and sync when network access is restored.

User Characteristics

1. The interface must cater to a wide range of users, including those with disabilities. Users will be of varied age groups, education levels, and technological skill. The system must accommodate novice users who may not have experience with digital sign-in systems.
2. The backend interface must be user-friendly, allowing staff to easily manage and analyze visitor data without extensive training.

Usability Goals

1. The interface should be intuitive, with clear instructions and minimal steps required to complete the sign-in/sign-out process *effectively*.
2. Visitors tend to become regular users over time, so the system must be *easy to learn* for first-time users while offering an efficient and familiar experience for repeat visitors.
3. The system should allow users to sign in within 30 seconds, ensuring *efficiency*.
4. The system must comply with accessibility standards, including features like screen readers and high-contrast modes to accommodate all users.

User Experience Goals

1. The design should be *engaging*, interactive and user-friendly, encouraging visitors to complete the sign-in/sign-out process without hesitation.
2. Clear and *helpful* feedback must be provided for every interaction (e.g., confirming sign-in or sign-out), ensuring users understand the outcomes of their actions.

References

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