CACS DATABASE PRESENTATION

INFX 510: HUMAN COMPUTER INTERACTION

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MOTIVATION AND CONTEXT

Inventory management is the process of managing, storing, and tracking inventory equipment.

The system administrator's present technique has not proven to be as effective and efficient as it could be. Maintaining and tracking the status of every piece of equipment at the James R. Oliver building at the University of Louisiana at Lafayette has been a struggle for the inventory manager and his crew. All university inventory equipment worth more than $1500 must be accounted for because the university is a state-run institution. We identified three target users after understanding the problem and they include:

User type 1: this user oversees inventory management of equipment worth over $1500 and conducts an end-of-the-year report to the state.

User type 2: this user oversees receiving quote requests, obtaining board member's approval for the quote, placing the order, and recording the custodian of this equipment.

User type 3: these users request order for research purposes and reports to user 1 at the end of the year for continued usage of the equipment.

REQUIREMENTS ANALYSIS

- User Type 1: The major tasks identified to be performed by this user type are:

    1. Manage and track the location of every state's equipment.

    2. Receive a quote from user type 3 and contact the sales director of the company.

- User Type 2: The major tasks identified to be performed by this user type are:

    1. Find out what account would fund the purchase of the item requested by the user 3.

    2. Place an order for the equipment.

    3. Ask user type 3 to sign a custodian receipt to acknowledge the equipment and send a copy to user type 1.

- User Type 3: The two major tasks identified to be performed by this user type are:

    1. Request and receive the equipment from user type 2 for their research activities.

    2. Replies email sent by user type 1 to confirm equipment is still in their possession.

REQUIREMENTS ANALYSIS

Context Analysis: we discovered that the current method of inventory management used by our target users has not been efficient and effective as the user would want. The users have tried several methods which have proved abortive. Some of the methods include:

- Using the barcode scanner along with spreadsheet tool which is not the best tool. Because of the duplicate data and one-size-fits-all view make it tough to use in inventory management.

- Getting assistance from others and conducting routine team checks

- Labelling every area and item.

Main Findings: After several interviews with our target users and understanding their problems, evaluating their capabilities, understanding their goals and frustration. We decided to explore and came up with several designs that we think will solve their issues.
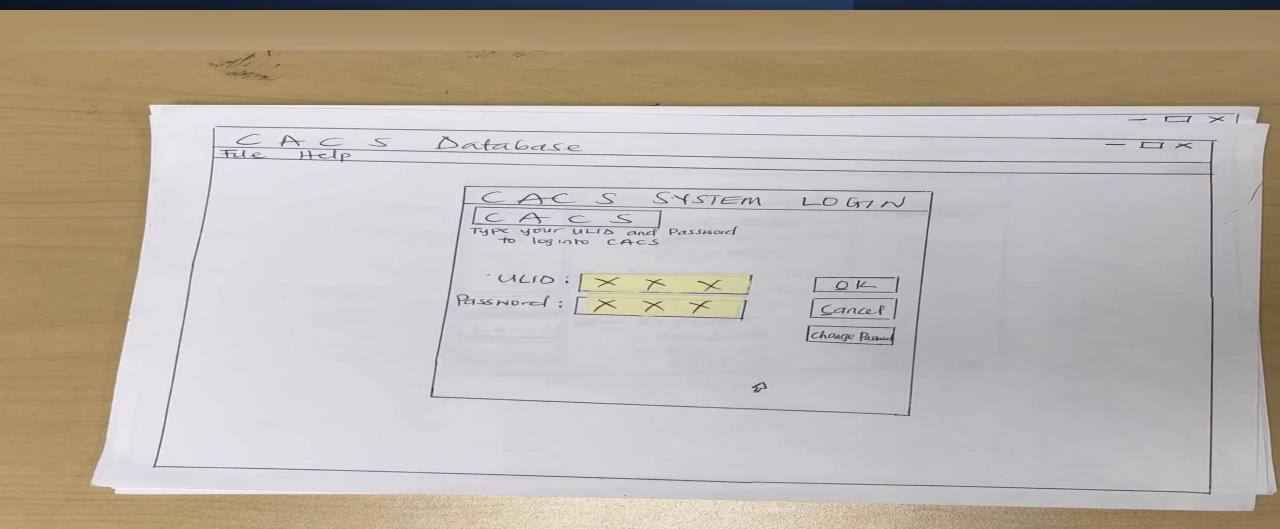
DESIGN CONCEPTS

We designed three different designs during the design alternative process listed below:

- CACS Database System: is a software that will cater to the collection of electronic and digital records to extract useful information and store that information.

- CACS Application Software: is a mobile application that will provide its users with similar services to those accessed on pcs.

- CACS RFID: Radio Frequency Identification is a wireless non-contact use of radio frequency waves to transfer data. RFID systems usually consist of RFID readers, RFID tags, and antennas.

DESIGN CONCEPTS

Rationale: After the mockup, the users decided on the CACS database system as the chosen design. One of the many reasons given by the users is that the CACS database seems like the current method used but in a more advanced manner, because of the idea of its being on the computer as an installed software it makes it similar to Microsoft Excel or Spreadsheet which the users are already familiar with. Though users were open to the idea of the CACS application software, they would instead stick to the design they are familiar with.

PROTOTYPE

EVALUATION

During the evaluation process, all users were briefed, and the tasks assigned to the users took them an average of about 10-15 mins to complete. We carried out two rounds of usability testing, and each round consisted of 3 users, making a total of 6 users. The second round of usability testing was done for our target users.

EVALUATION FOR USABILITY TESTING 1

User Type 1

Step 1:- Briefing

Step 2:-Tasks

- Log in to the database with your information.

- Add a new record of equipment that you had just received.

- Reconcile the state record by importing the new state data from your local PC, then click on the reconcile button and save it.

- Log out of the system

EVALUATION FOR USABILITY TESTING 1

User Type 2

Step 1:- Briefing

Step 2:-Tasks

- Log in to the database with your information.

- When you received a new quote request, view and click the send button to send the new quote request to the board members for approval.

- Delete a delivered quote request by double-clicking on the row and clicking the delete button

- Log out of the system

EVALUATION FOR USABILITY TESTING 1

User Type 3

Sept 1:- Briefing

Step 2:-Tasks

- Log in to the database with your information.

- Submit a quote request for a new laptop

- It's the end of the year inventory time, attach a picture of serial number 5442 through record event for inventory

➢ Search for the serial number

➢ Perform filter

➢ Click on events to edit the record

➢ Click on attach a file to search for the picture on your local PC

➢ Save the changes

- 4. Log out of the system

OBSERVATION DURING USABILITY TESTING 1

- Users had difficulty understanding the wordings used in the database system. For example, the word quotation on the menu was confusing.

- User type 1 couldn't complete the second task of reconciling the data from the state with CACS data; she was confused navigating through the system.

- Our users find it difficult to log out of the system: initially, users will have to click on the file icon and select the logout.

USERS' FEEDBACK AFTER USABILITY TESTING 1

- User 1 complained about logging out of the system; she thought the logging out icon should be placed somewhere on the interface.

- User 2 complained about the drop-down menu instead of clicking all the menu options before they could view the sub-menu and suggested that we make the sub-menu visible.

- User 3 suggested that the **save** button that submits a quote request should be changed to **submit** instead of save.

PERFORMANCE METRIC FOR USABILITY TESTING 1

	User 1	User 2	User 3
Number of steps for the user to complete the task	19	10	28
Number of errors per users	5	7	13
Number of users making a particular type of error	1	1	1
Time taken to complete the task	Unable to complete the task.	Unable to complete the task.	Unable to complete
Remark of the user	Good, but needed some improvement.	Good, but needed some improvement.	Needed some improvement.

CHANGES MADE TO THE PROTOTYPE AFTER USABILITY TESTING 1

Before we proceeded to conduct the usability testing 2, some changes were made to the database system:

- The save button after the quote request form has been completed was changed to submit to make the database system easier to use.

- The log-out icon was placed on the right upper side of the system interface to be easily located when logging out of the system.

- Drop-down menu was changed to a visible submenu to avoid confusion.

OBSERVATION DURING USABILITY TESTING 2

- Our users could navigate through the database while completing their tasks.

- User 1 was able to complete his tasks due to the changes made to the database system.

- Our users were satisfied except for user 3, who was somewhat satisfied because the facial expression looked confusing.

USERS' FEEDBACK AFTER USABILITY TESTING 2

- Our users said they were satisfied with the system.

- Users said the database system is easy to use.

- Our users found the database system useful.

- User 2 said security should be two-factor authentication since the quote request contains sensitive information like faculty members' personal information and some financial information.

- User 3 would like the system to be more streamlined, especially the process of attaching a picture to the equipment record.

PERFORMANCE METRIC FOR USABILITY TESTING 2

Observation	User 1	User 2	User 3
Number of steps for the user to complete the task	19	10	28
Number of errors per users	0	1	2
Number of users making a particular type of error	NIL	1	1
Time taken to complete the task	10	12	12
Remark of the user	Satisfactory	Satisfactory	Satisfactory

CONCLUSION

Any organization with a poor inventory management system suffers greatly since it is impossible to track events. At CACS, it is difficult to track equipment availability, location, and custodians. The CACS database system will efficiently bridge all these problems. If we had more time, we would investigate further by adding new features to our system, enhancing our wordings, and simplifying some processes for users in order to positively assist them in achieving their desired goals while considering their frustrations.

THANK YOU FOR LISTENING!