A Survey Study on the Feasibility and Benefits of Developing a Mobile Course Registration System

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Motivation

As a Colgate student, I have noticed some inconvenience from our current course selection website and registration system by myself and my friends in Colgate. For example, the current system does not provide mobility as a mobile application does, and students cannot favor some courses that they are planning to select for future references. Since mobile clients have been widely used now by most people, including Colgate students, the mobile client application can make the course registration more convenient and transparent and on demand updated information more accessible and personalized for both incoming and enrolled Colgate students. So, the study of other Colgate students' opinions on the issue and the feasibility of utilizing a mobile client system as a solution is one of the objectives of this research. In order to achieve this objective, I need to show respondent students a demo application by developing a mobile course registration system. In this project I developed a mobile client application which provides solutions for a number of identified problems, such as favoring courses, getting notification due to the change of favored courses, and so forth. I also made a demo video for representing the application, and a questionnaire to use it for the survey study.

Functionalities

Functionality 1: View the latest courses categorized by majors

- Show all latest Colgate majors categorized in alphabetical order. Figure 4 shows a portion of majors in Xcode IOS simulator.
- Display clickable card pattern of short course description for all major courses under each accordion panel with course number, course name, instructor's last name with first initial, and seat availability. Figure 5 shows a portion of courses in African American Studies major.

Functionality 2: Read through detail descriptions of each course

- Contain all the information for each course after clicking the short course description pattern, use all requested API data from the Colgate web course registration system. Click red return button to the home page. Figure 6 shows the sample detail page for ALST 202 A.
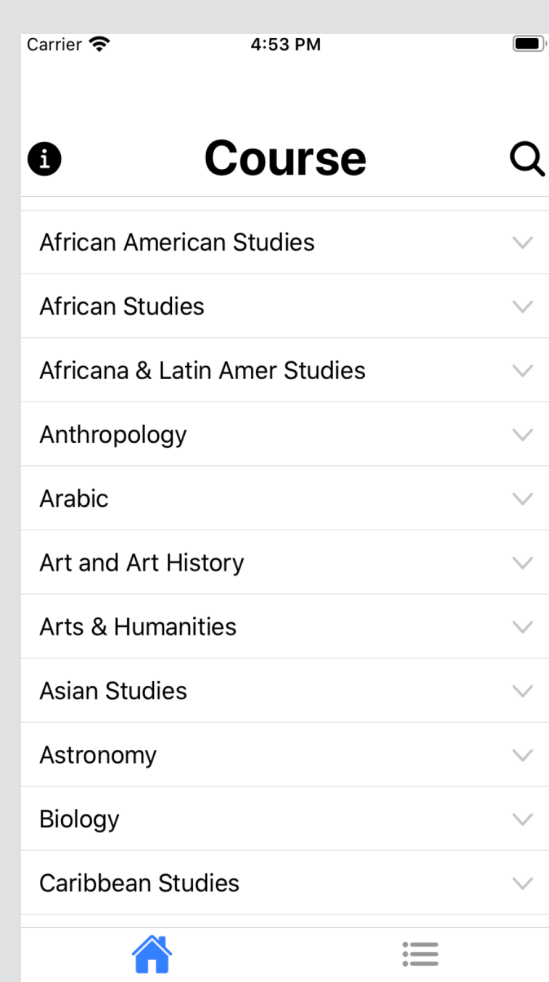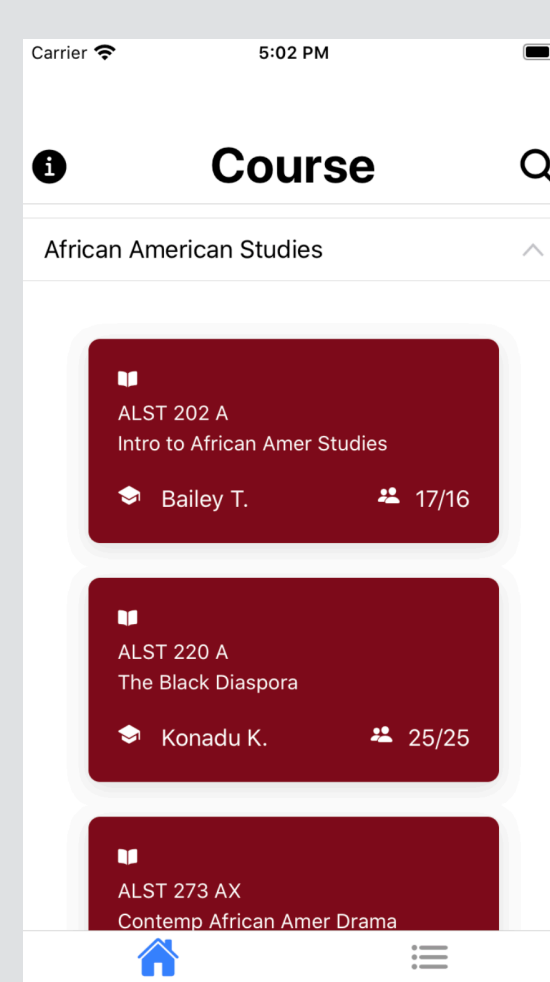

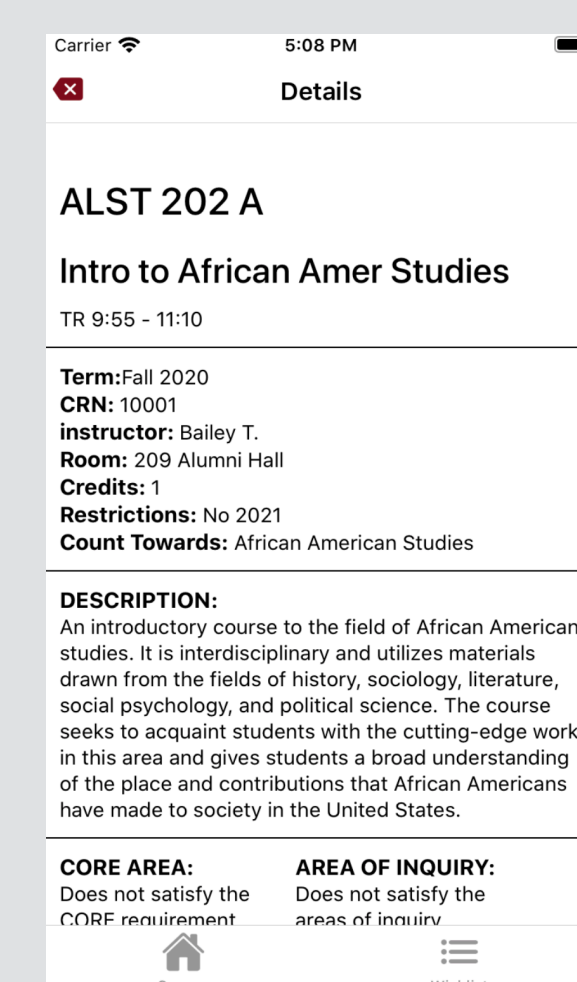Figure 1: Home page

Figure 2: Major courses

Figure 3: Detail page

Functionalities

Functionality 3: Search all courses by keywords

- Clickable search button with popup search bar. Eliminate all search bar results and the search bar by clicking the search button again.
- Search all Colgate latest courses by course number, instructor last name, and department. Figure 7,8,9 show sample search results by three different type-in information.
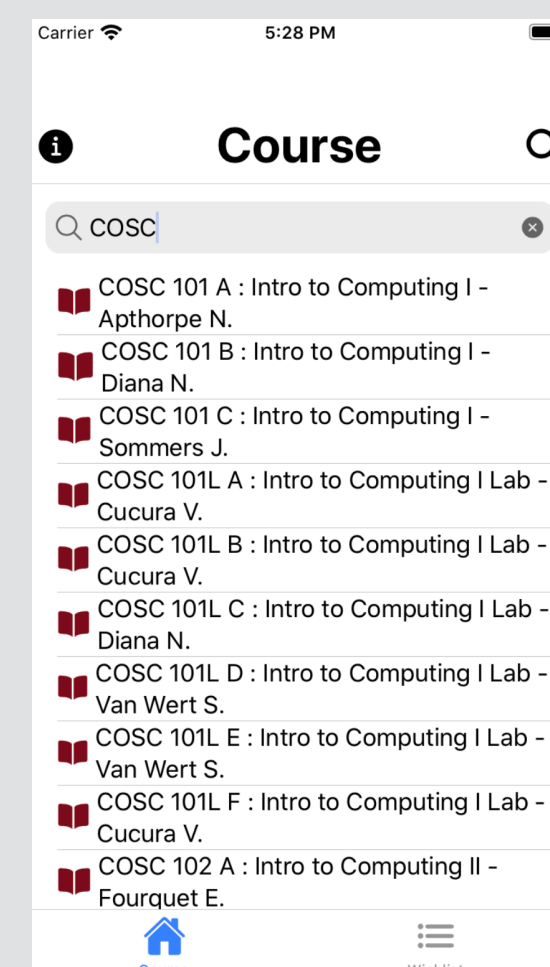- The research result varies and confines as more words are typed in.
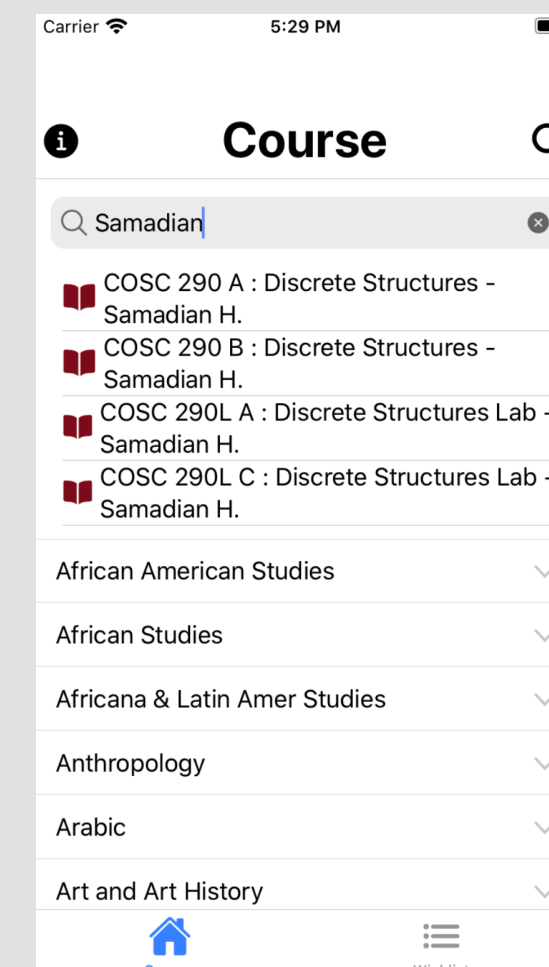

Figure 4: Search by course number
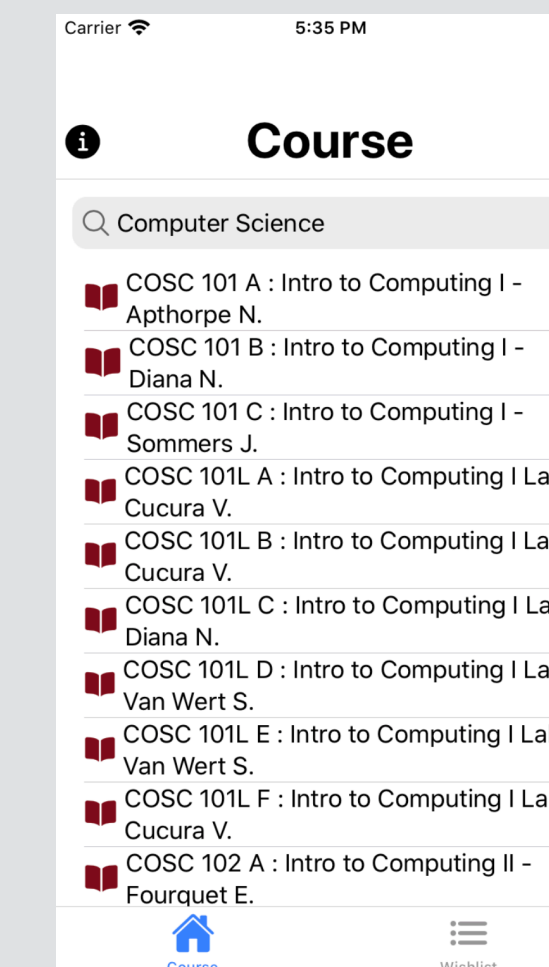

Figure 5: Search by instructor last name

Figure 6: Search by department

Functionality 4: Wishlist System

Beyond the functionalities the web system has already contained, the mobile course registration application would have a new Wishlist system. The system contains:

1. Add and remove courses into and from the Wishlist section. There is a Wishlist section at the home page, which originally has nothing in it (see Figure 1). As user scrolls down to the bottom of detail page, there are two buttons named "Add" and "Remove". When the user click "Add" button, the course will be saved into the Wishlist section. When the user click "Remove" button, the course will be deleted from the Wishlist section.
2. Get notified when subscribed. While the user clicked "Add" button, it will show the current seat availability. Figure 2 shows an example of added the course that the course still have available seats. Figure 3 shows how the added courses looks like in Wishlist.
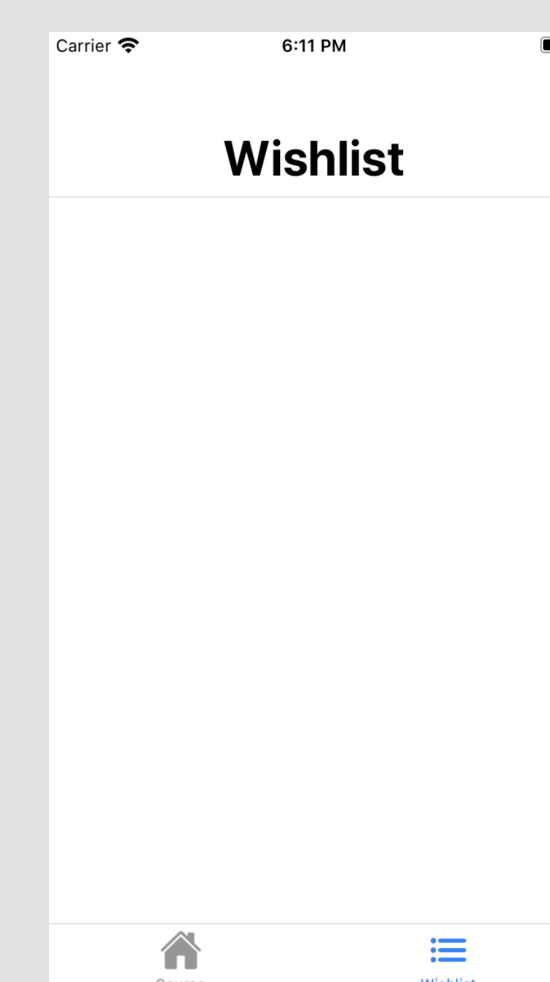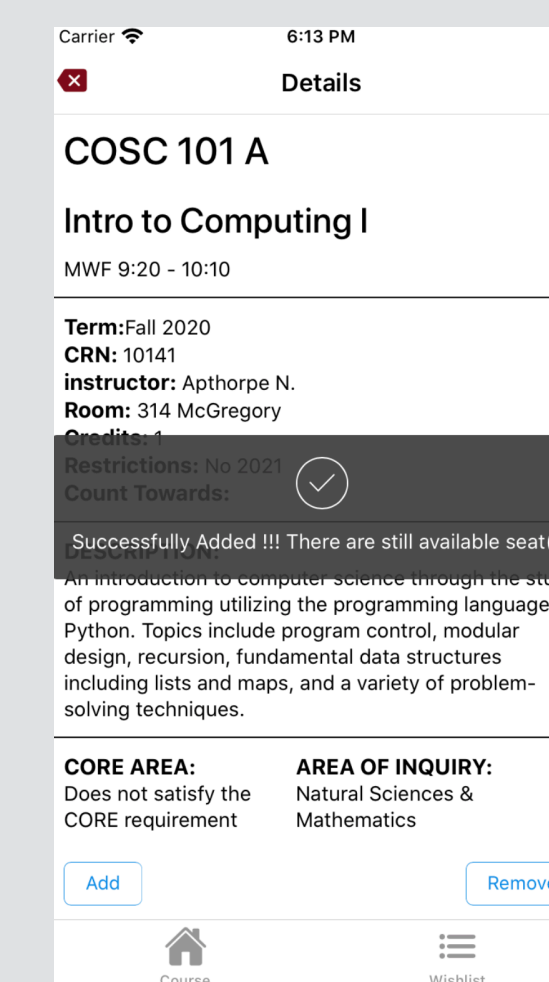

Figure 7: Empty Wishlist
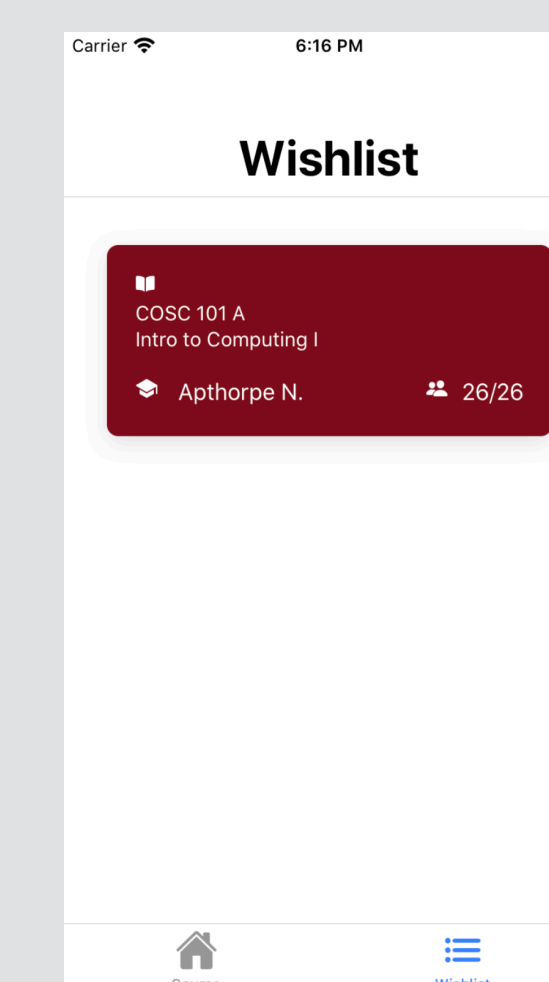

Figure 8: Add/Remove

Figure 9: Filled Wishlist

Approach

I decided to use Apache Cordova for the UI design and front-end framework by building Ionic 5, primarily through Ionic Command Line Utility (CLI), and ant design of angular upon Apache Cordova. The reason I chose Apache Cordova is that only one version of code is needed for both IOS and Android system. The basic UI design of the home page, which displays all majors, is the accordion panel component from ant design of angular for mobile devices. I collected all data from Colgate course offering website by simply sending API request to the specific URL and fetching JSON file, then decoding into custom class object.

Survey Experiment & Result

The required material for concocting the survey including the demo video and the questionnaire were made to be sent out to Colgate students after the necessary permission is given. The survey contains some general and specific questions about the application shown in the demo video. General questions, such as gender, age, class, and so forth, aim to analyze the data from various respondents. Specific questions are related to opinions about the functionalities of this application and different user experiences between mobile and web course selection and registration system. The application, demo video for presenting it, and the survey questionnaire are ready to be used whenever the permission is given.

Conclusion and Future Work

The designed mobile application contains basic functionality required for a registration system as well as additional features such as search, Wishlist and notification. Although the survey has not yet been conducted, and we are not aware of the students' feedback, based on our own observations, the application provides convenience for students to register, overview, and favor latest courses when it is deployed by Colgate. More work will be contained in the future work. A timetable UI design for students to avoid overlapped course schedule, and the notification of seat availability variation for favored courses will be implemented.

Acknowledgment

Selected References

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