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| Module Code: ISAD254SL | Module Name: Human Computer Interaction | |
| Coursework Title: Application Interface for recreational center | | |
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| Programme: | | |
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| Group work: please list all names of all participants formally associated with this work and state whether the work was undertaken alone or as part of a team. Please note you may be required to identify individual responsibility for component parts.  10602294- A.A Yasiru Heshan Perera  10602165- R.Jegatheshan  10601896- B.M.U.S Basnayake  10601909- R.G.K.Dilshan  10601886- C.Shan Aluwihare  ***We confirm that we have read and understood the Plymouth University regulations relating to Assessment Offences and that we are aware of the possible penalties for any breach of these regulations. We confirm that this is the independent work of the group.***  Signed on behalf of the group: | | |
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**Introduction**

a. Introduction to Project

Recreation Center of our University is a important Enthusiastic Unit. Many staff members and students daily uses recreation center. Therefore recreation center represent a major role in the university. To handle the day to day activities we have suggested standalone mobile software for this unit.

Suggested mobile software is able to manage students’ registration for sports, NFC card accessing, availability check, and also they can get to know information about indoor, outdoor sports and booking.

The major purpose of the system is taking all information about the users.

* Create new registry and sign in for registered ones.
* Facility to pay payments, such as for gym and swimming pool.
* Availability check for gymnasium, swimming pool, indoor stadium and outdoor stadium.

b. Concept and Assumptions

Our main vision through this concept is to reduce the difficulties and to simplify the day to day activities and also the time management system of the recreation center.

Twenty is the maximum number of students can workout at a time at the NSBM gymnasium. So as soon as the gym gets filled the students should wait for another one more hour and some may go and get betrayed, and some others may wait and waste an hour, and the same thing happens at the NSBM swimming pool also. So we have developed an app called “REC.” which helps us solve these difficulties such as online time reservation which pretends students from getting disappointed and wasting their valuable time.

If we have a look at indoor and outdoor games, NSBM conducts a plenty of indoor and outdoor games and each and every team is having practices, this may cause practices getting overlapped and also the students who are coming to use the facilities can get disappointed. To avoid this situation our system informs the users about the practice schedules.

We assume that users of gymnasium and the swimming pool should start their session at start of an hour and should end it at the end of that hour.

Ex- If a student enters the gymnasium at 9am he should leave the gymnasium strictly at 10am.This helps recreation staff to manage the user traffic and to manage the time.

c. Technical Specifications

* System is made for touch screen mobile phones. (not any physical buttons are implemented in this system)
* System interface is developed by the ‘just in mind’ application.

**User Design Principles used**

* We kept everything simple and clear for the user. We didn’t use any eye troubling sharp colors or images. Even the language we have used in the application is simple and very easily understandable. We used “Rec.” as the application name instead of “recreation center” because it’s the pet name which is used among the students.
* Visibility – The theme we used is a light theme which contains white and gray. And we used various colors for different elements to highlight the meaning.

Ex- we used blue color for the submit button and red for error messages and warning massages. *(figure 1)*

We used pop up effect for the buttons and text boxes, so they appear in a more realistic way and more noticeable for the user.

* Feedback -System always provides user with feedbacks, so that user can easily understand what’s going on in the application and how he’s handling it. *(figure 2)*
* Constrains - We always tried to use dropdown menus and tick boxes where ever it’s possible to avoid dull textboxes. *(figure 3)*
* Mapping – We have arranged a button bar in the bottom of the system which contains a back button, profile button, home button, settings button and a forward button. So, the user can freely move throughout the system.

Every page contains a header section which contain the heading of the page, so the user can easily understand where he is on the application. *(figure 4)*

* Consistency – We used the same theme, same font size and colors throughout the system so the user will feel more familiar with the system.

Also, the arrangement of the elements such as headers, footers, buttons, etc., are in the same order in the application throughout the system.

![A screenshot of a cell phone

Description generated with very high confidence]()![A screenshot of a cell phone

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figure 1 figure 2

figure 3 figure 4

**Usability methodology**

*A close up of text on a whiteboard

Description generated with high confidence*We did our usability methodology research with a simple questionnaire. We went to the recreation center and randomly picked some users. Then we showed them a demo of ‘REC.’ application and gave them this questionnaire which contains three close end questions and two open end questions. *(figure 5)*

We have pined some of the feedbacks we have received from the questionnaire. *(figure 6,7,8,9,10)*

Almost every feedback we got from the questionnaire are positive.

**A close up of text on a white background

Description generated with very high confidenceA close up of text on a whiteboard

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**User Profiles**

1. Target User Description

Age Group 16-30 Years

Gender Male/Female

Nationality 97% - Sri Lankan / 3% - Foreign

Ethnicity 75% - Sinhalese / 10% -Tamil / 10% -Muslim / 5%-Others

Income Higher/ Higher middle/ Lower middle

Locality Urban / Semi Urban

Height 4’5” – 6’5”

Eye sight Good / Average / low

Physical Ability Good / Average / low

Language Sinhala / English / Tamil

**User Profiles**

A person standing posing for the camera

Description generated with very high confidence

Uditha Basnayaka is 21 year old. His Father is a custom director and his mother is a house wife. Uditha studied in Dharmaraja College and his home town is Kandy. Uditha is an undergraduate in software engineering and his computing knowledge is excellent. Uditha is a national level badminton player and collecting stamp is his hobby. Uditha is a healthy person who works out atleast twice a day.

A person standing in front of a crowd

Description generated with very high confidence

Dilshan Munasingha is 19 year old. His Father is a businessman and his mother is a house wife. Dilshan studied in S.Thomas College and his home town is Bandarawela. Dilshan recently started work out at the gymnasium and he’s loving it. Dilshan is 120kg in weight and 5’5” in height.

A screen shot of a person

Description generated with very high confidence

Supuni Kavindi is 21 years old and she is born to a family of teachers. Supuni studied at President’s girls College and her home town is Athurugiriya. Supuni is a good swimmer and she likes to spend her leisure times improving her swimming abilities. Supuni is 60Kg in weight and 5’5” in height.

A person posing for the camera

Description generated with very high confidence

Ravindu Rathnayake is 18 years old. His father is an Engineer and mother is a teacher. He studied at Pinnawala central College and his hometown is Kegalla. Ravindu is a good cricketer and he even plays for the NSBM cricket team. Ravindu is very healthy. His height is 5’9” and weight is 75Kg.

**Task Analysis Diagrams**

Login

**A screenshot of a social media post

Description generated with very high confidence**

Home Page

**A screenshot of a cell phone

Description generated with high confidence**

A picture containing screenshot

Description generated with very high confidenceA screenshot of a cell phone

Description generated with high confidenceGymnasium and Swimming pool

A screenshot of a cell phone

Description generated with high confidenceIndoor Games

Outdoor Games A screenshot of a cell phone

Description generated with high confidence

**Parallel Design Sketches**

![A close up of electronics

Description generated with high confidence]()![A screenshot of a cell phone

Description generated with very high confidence]()Design 1

Design 2

![A close up of a device

Description generated with very high confidence]()![A close up of electronics

Description generated with high confidence]()

![A screenshot of a cell phone

Description generated with very high confidence]()![A screenshot of a cell phone

Description generated with high confidence]()Design 3

Justification for the selected design

Selected theme is more attractive and user friendly. Dark color themes may make the user feel uncomfortable while using the application for a long time, and addition to that arrangement of the selected theme is more satisfying.

**Prototype**

![A screenshot of a cell phone

Description generated with very high confidence]()

This is the sign in page of the system. Users can Enter the Username and password and then sign in to the application.

If the user cannot remember his password, he can simply tap into “Forget Password?” link and go to the password recover page.

If the user yet don’t have an account, he can tap into “Sign up” link and go to the sign-up page.

![A screenshot of a cell phone

Description generated with very high confidence]()

This is the “Forget Password” page.

If the user cannot remember or forgot his password, he can get and verification code by clicking “Verify” button to his email address. (which has given to the system when sign up)

![A screenshot of a cell phone

Description generated with very high confidence]()![A screenshot of a cell phone

Description generated with very high confidence]()

User has to enter a four-digit recovery code which will be sent to his E-mail ID.

Then has to tap confirm.

This page contains “password reset successfully” message.

User can then go back to the “Login page” by tapping Login button.

![A screenshot of a cell phone

Description generated with very high confidence]()

This is the sign up page of the application.

User has to fill each and every textbox and drop-down menus.

Password should at least contain eight digits. If the entered password full fills that requirement green tick mark will show at the right corner of the password field. If not, it will show a red cross mark.

Confirm password field should match the password field. If it matches, a green tick mark will show at the right corner of the confirm password field. If not, it will show a red cross mark.

After filling each and every field user can tap “Next” button to go to the next page.

![A screenshot of a cell phone

Description generated with very high confidence]()

This is the second step of the Sign-up process.

This page asks user about his payment details

(card details).

After filling each and every field user can create his “REC.” account by tapping “Create account” button.

![A screenshot of a cell phone

Description generated with very high confidence]()

After user successfully enters all the details and submit, application creates a unique account for the user and it will show the user an overview of his account.

![A screenshot of a cell phone

Description generated with very high confidence]()

User can go to his profile by tapping the profile icon in the bottom bar. From that he can Change password and can add additional information for his profile.

After every change save button should be tapped to save the changes.

![A screenshot of a cell phone

Description generated with very high confidence]()

This is the Home screen of the “REC.” application.

User can go into the home screen by tapping the home button in the bottom bar or it automatically goes to the home page after the login.

![A screenshot of a cell phone

Description generated with very high confidence]()

From the gymnasium page user can choose a time slot and reserve it for a workout session.

![A screenshot of a cell phone

Description generated with very high confidence]()

If the time already reserved for 20, (20 is the maximum for a time slot) application will show a message asking, choose another time slot.

![A screenshot of a cell phone

Description generated with very high confidence]()

When the user is done with choosing a time and tap the pay button. Application reserves that time slot for the user. And the pay button will be changed as “Reserved”, so that the user can know that his time slot is reserved.

This same scenario applies to the swimming pool also.

![A screenshot of a cell phone

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![A screenshot of a cell phone

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Indoor and Outdoor Games pages shows the users in which times practices and free times are scheduled. So, the user doesn’t have to get disappointed by the wrong timing.

This window can be scrolled down to check the full schedule.

![A close up of electronics

Description generated with high confidence]()

Users can access the Settings page by tapping the settings icon in the bottom button bar.

From their user can Sign out by tapping the sign out.

There’s also some other extra facilities that are provided by the “REC.” application such as alerts, emails, user settings and invite Friends.

**Usability Evaluations**

Formative

* Method

As we finish designing our interface we showed it to some people and get their ideas about the system. We used questionnaires for this

* Results

Some suggested that the font size is too small and it’s hard to read.

Some suggested that to use icons as buttons instead of text buttons.

* Improvements

We increased the font size and tried to use icon buttons as suggested in Questionnaire.

**Usability Evaluations**

Summative

* Method

As we develop the above improvement we did the same for the second time.

* Results

This time feedbacks were positive. Everyone was satisfied with the interface.

* Improvements

In future we are hoping to add more facilities to the application.

**Conclusion**

We believe that this system could solve many problems that students faces when using the recreation center of NSBM green university. This system is designed with design principles. Th whole system is very user friendly.

We are planning to improve our application to log in with the finger print id.

**References**

* The application is developed with the “Just in mind” application.
* Lynda.com