

Team Members

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Abstract

Health care is one of the very important industries in today's world. The advancements happening in the world of technology have affected health care industries too and a lot of interesting events are happening in this field. SmartCare is an android application implemented using node.js, Research Stack, Android features and the web api's are hosted on amazon aws server. This application sends notifications to users reminding/letting them know about a question or a survey which has been posted to the study group they are part of. Admin creates Study Coordinators and Users where in Study coordinators create users and studies.

Introduction

This application depends on the server which we have hosted on amazon aws and the android application. We used research stack for creating survey purposes, and all the api's are written either in node.js or php.

Features Description:

Admin can

- Can create new user/patient
- Can create new study co-Ordinator
- Can view the list of existing users
- Can view the list of existing study co-Ordinator

Study Co-Ordinator can

- Can create new user/patient
- Can view the list of existing users
- Can create a new study
- Can view the list of existing studies
- Can add the users to the created studies
- Can design the study by adding the questions of both informative types and multiple choice questions
- Created questions can be scheduled to be sent
- Can create surveys in the studies with 3 types of questions open text, linkern type and multiple choice questions
- Can view the responses of the questions provided by users.
- Can view the responses of the surveys of each user
- Can print the responses in the printable format.

Client Side Features

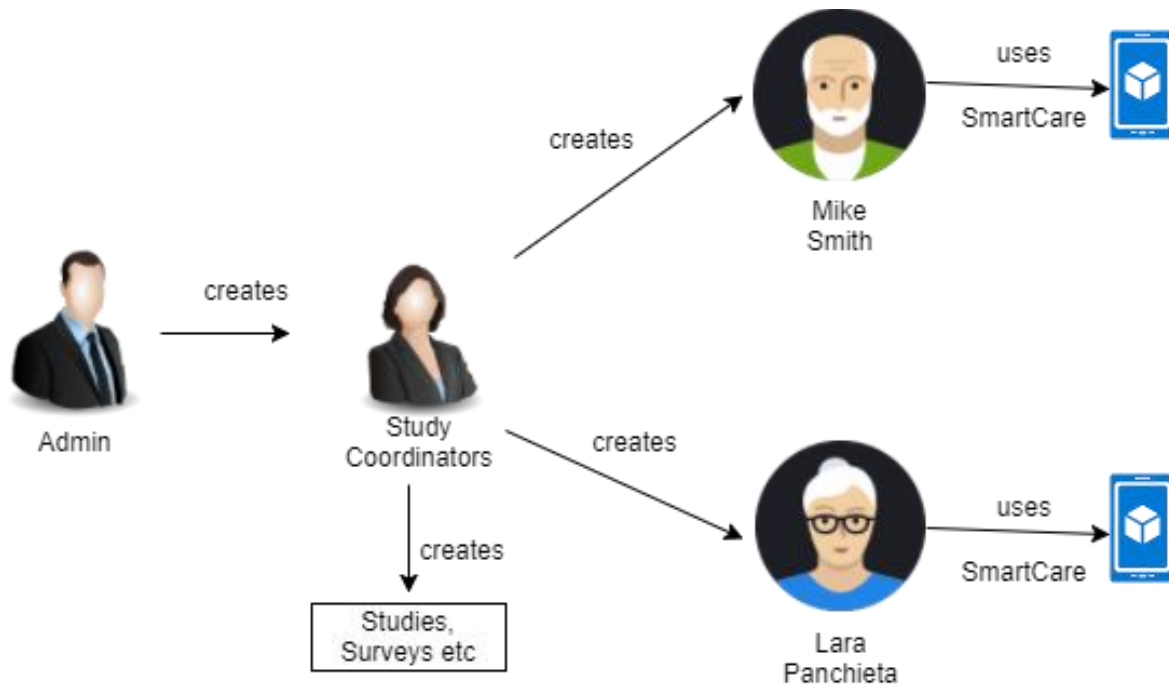
- Will receive the notification once a new question is added to the study
- Can opt-in or opt-out from receiving the notifications
- Will list the list of studies that has been enrolled
- Will show the list of questions in each study
- Can submit the responses for each mcq questions
- Can take the survey and submit the responses

Features listed above are all the tasks which are completed.

Tasks not completed:

- Sending notifications on creation of a survey
- Opening the study directly on clicking of the notification
- Improvisation on UI

Design Architecture



Database Schema

The tables created are,

Admin table to store admin username and password.

```
CREATE TABLE `admin` ( `username` varchar(50) NOT NULL, `password` varchar(50) NOT NULL ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

Gcmids table is to store device ids of android phones and the email id of person using it.

```
CREATE TABLE `gcmids` ( `devid` varchar(500) NOT NULL, `uemail` varchar(50) NOT NULL ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

Questions table is to store question id and question text.

```
CREATE TABLE `questions` ( `sid` int(11) NOT NULL, `qid` int(11) NOT NULL, `question` varchar(1000) DEFAULT NULL ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

QuestionsOptions is to store the options given for a question, option id and option name

```
CREATE TABLE `questionsOptions` ( `qid` int(11) NOT NULL, `optionid` int(11) NOT NULL, `optionname` varchar(50) DEFAULT NULL ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

QuestionsResponse is to store question id, timeid, optionid, email.

```
CREATE TABLE `questionsResponse` ( `qid` int(11) NOT NULL, `timeid` int(11) NOT NULL, `uemail` varchar(50) NOT NULL, `optionid` int(11) DEFAULT NULL ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

QuestionsTime table stores qid,time in hours, time in minutes, isscheduled

```
CREATE TABLE `questionsTime` ( `qid` int(11) NOT NULL, `qtimehh` int(11) NOT NULL, `qtimemm` int(11) NOT NULL, `isscheduled` int(11) NOT NULL DEFAULT '0' ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

QuestionsTimePosted stores question id, timeid, and date time.

```
CREATE TABLE `questionsTimesPosted` ( `qid` int(11) DEFAULT NULL, `timeid` int(11) NOT NULL, `dtime` datetime DEFAULT CURRENT_TIMESTAMP ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

QuestionsUsers stores qid, uemail.

```
CREATE TABLE `questionsUsers` ( `qid` int(11) NOT NULL, `uemail` varchar(50) NOT NULL ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

Scheduler is to schedule push notifications which consists of id, hh and mm

```
CREATE TABLE `scheduler` ( `id` int(11) NOT NULL, `hh` int(11) DEFAULT NULL, `mm` int(11) DEFAULT NULL ) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```

Studies table consists of sid, sname, sdescription

```
CREATE TABLE `Studies` ( `sid` int(11) NOT NULL, `sname` varchar(255) NOT NULL, `sdescription` varchar(255) DEFAULT NULL ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

StudiesUsers table consists of sid, uemail

```
CREATE TABLE `StudiesUsers` ( `sid` int(11) NOT NULL, `uemail` varchar(50) NOT NULL ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

StudyCoordinator consists of his email, first name, lastname, password

```
CREATE TABLE `StudyCoordinator` ( `semail` varchar(50) NOT NULL, `fname` varchar(50)
```

Smart Care Report

```
DEFAULT NULL, `lname` varchar(50) DEFAULT NULL, `pwd` varchar(100) DEFAULT NULL )  
ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

Survey table consists of surveyid, sid, surveyname, dttime

```
CREATE TABLE `Survey` ( `surveyid` int(11) NOT NULL, `sid` int(11) NOT NULL, `surveyname`  
varchar(50) NOT NULL, `dttime` datetime NOT NULL DEFAULT CURRENT_TIMESTAMP )  
ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

Survey questions table consists of sid, surveyed, qid, questionName, questionType.

```
CREATE TABLE `surveyquestions` ( `sid` int(11) NOT NULL, `surveyid` int(11) NOT NULL, `qid`  
int(11) NOT NULL, `questionname` varchar(1000) DEFAULT NULL, `questiontype` varchar(100)  
DEFAULT NULL ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

```
CREATE TABLE `surveyquestionsOptions` ( `qid` int(11) NOT NULL, `surveyid` int(11) NOT NULL,  
`optionid` int(11) NOT NULL, `optionname` varchar(50) DEFAULT NULL ) ENGINE=InnoDB  
DEFAULT CHARSET=latin1;
```

```
CREATE TABLE `surveyquestionsResponse` ( `qid` int(11) NOT NULL, `surveyid` int(11) NOT  
NULL, `responseText` varchar(100) DEFAULT NULL, `uemail` varchar(50) NOT NULL, `optionid`  
int(11) DEFAULT NULL ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

```
CREATE TABLE `USERS` ( `uemail` varchar(50) NOT NULL, `fname` varchar(50) DEFAULT NULL,  
`lname` varchar(50) DEFAULT NULL, `pwd` varchar(100) DEFAULT NULL, `age` int(10) DEFAULT  
NULL ) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

API Descriptions:

All the api's listed below are written in node.js.

1. /addidforgcm - adds gcm ids to devices. This api is important in receiving push notifications.
2. /deleteidforgcm – deletes the gcm ids if the user chooses not to receive notifications.
3. /sendnotification - this api sends notifications to all the users selected by the admin. We have used google's cloud messaging service.
4. /getQuestions - This api is written in php, since to get questions we had to make inner joins of multiple tables, node.js code was getting messy and we were in callback hell. We used promises library in node.js and tried but were partially successful. So, this is written in php.
5. /submitresponse – This api is to submit responses from the user to server.
6. /getuserprofile – This api is to display users profile in android app.
7. /displayQuestionsToAdminPromise – Admin has an ability to check messages/questions sent to the user. We have used promise library to do the same.
8. /resetscheduler – This api is to schedule questions to the user
9. /viewresponses – Api to view user responses
10. /schedulemessages – Api to schedule messages to be sent to user
11. Createinformationquestion – Creates the information message in the study
12. Createmcqquestion – Creates the mcq question in the study
13. getUsers – lists the users in the study
14. createuser – creates a patient account
15. userlogin – for the validation of user login from the app
16. getSurveys- lists the surveys for the study
17. getEachSurveyUsers – lists the users for the survey selected
18. getEachSurveyResult – gets the response submitted for the survey by the user
19. addSurveyQuestions – adds the survey questions to the database for the selected study
20. getQuestionsForResponse -lists the questions that require users response
21. getQuestionResponseForAll – gets the response for the selected question for all users
22. login – login for the study coordinator
23. getUsersStdyFirstTime – lists all users to add into the study
24. getUsersForStudy – lists the current users in the study
25. createstudyusers – adds the user to the study
26. getStudies – lists the existing studies
27. createstudy – creates the study
28. getQuestionsForMobile - gets the questions for the current study
29. submitresponse – submits the response for each question
30. getuserprofile – gets the user profile
31. addSurveyAnswers – submits the survey responses for the user
32. getSurveyQuestions – gets the survey questions for the selected survey

Tasks undertaken and completed by different team members

To make sure everyone in the team works on all areas we divided the work in such a way that, all of us worked on building api's in node.js, front end in angular.js and android app development.

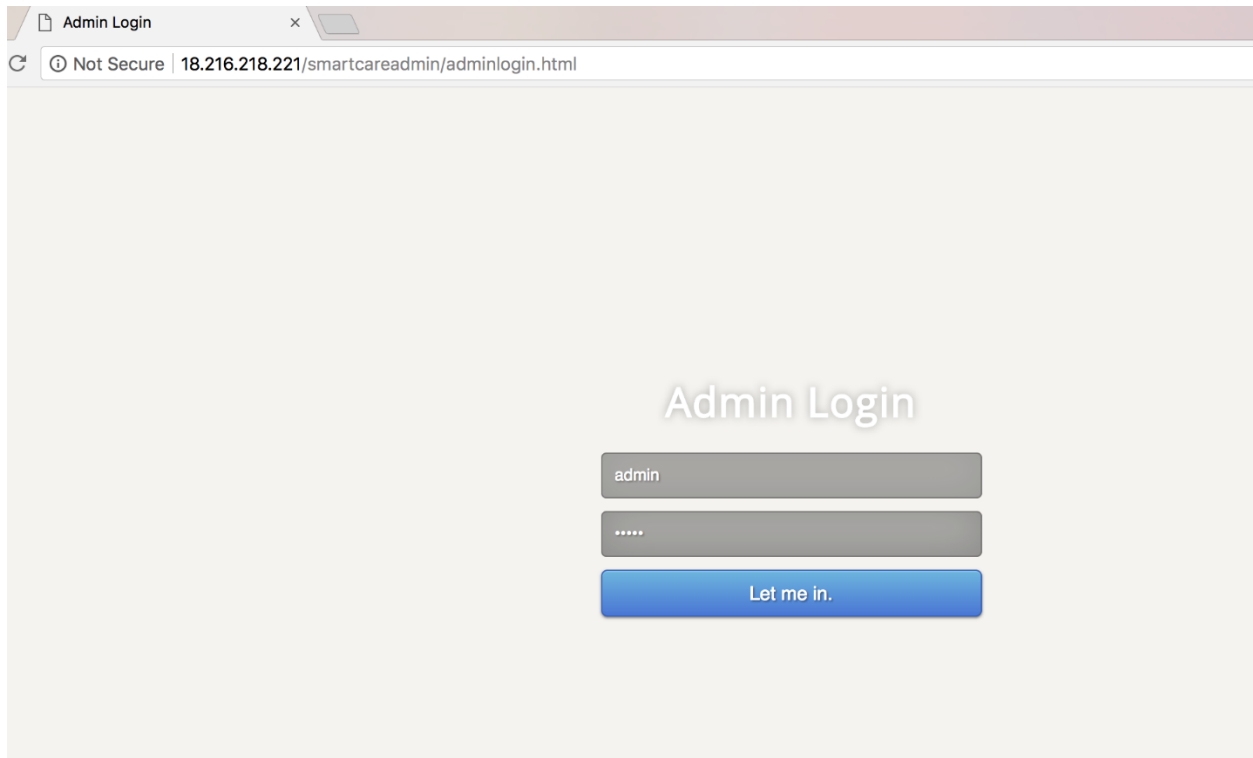
Name	Tasks Completed
Sai Nishanth Dilly	Node api's for adding questions, admin and study coordinator login, adding users, scheduling web portal front end for some parts using angular.js, database schema design, modularizing code into proper structure and files, android , schedulemessages node api, createstudy, Createinformationquestion, resetscheduler getEachSurveyResult
Venkatesh Bonageri	Node api's for creating surveys, getting studies list, submitting survey responses adding gcm id's, handling push notifications, database schema design, front end angular.js for some files, navigation bar and hamburger icon., getEachSurveyUsers node api's, addSurveyQuestions , addidforgcm,getQuestionResponseForAll, Createmcqquestion
Vikas Deshpande	Node api's for creating getting questions of a particular survey, adding users to particular survey, hosting in aws, database schema, learning research stack and implementation, android ui, angular.js some web portal files development, displaying questions to admin, getQuestionsForMobile, viewresponses, getStudies

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ScreenShots:

Web Portal:

Admin Login Page.

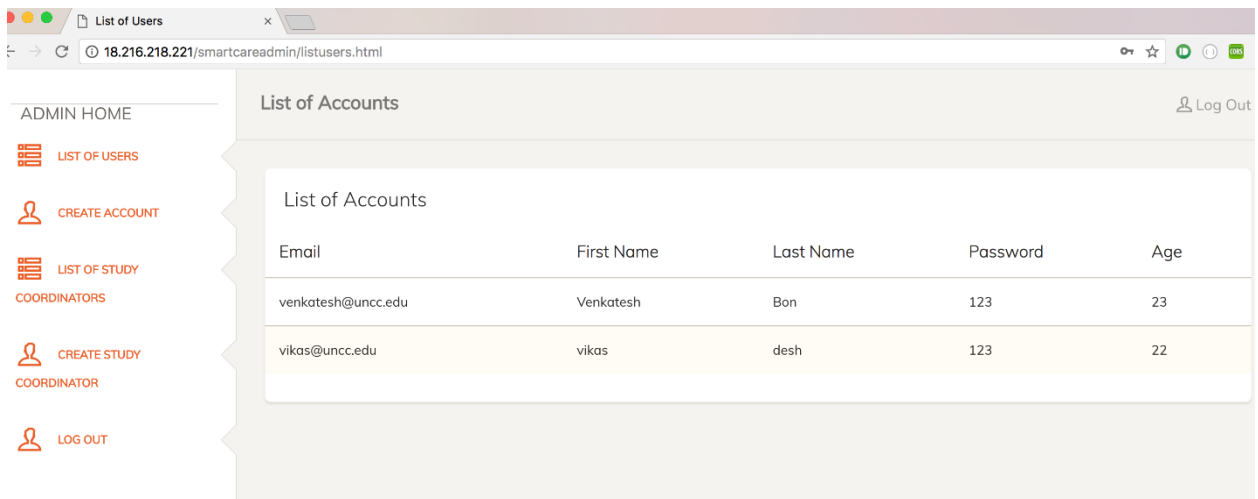


Admin Login

admin

.....

Let me in.



ADMIN HOME

LIST OF USERS

CREATE ACCOUNT

LIST OF STUDY COORDINATORS

CREATE STUDY COORDINATOR

LOG OUT

List of Accounts

Log Out

Email	First Name	Last Name	Password	Age
venkatesh@uncc.edu	Venkatesh	Bon	123	23
vikas@uncc.edu	vikas	desh	123	22

Smart Care Report

CREATE USER

LIST OF USERS

CREATE ACCOUNT

LIST OF STUDY COORDINATORS

CREATE STUDY COORDINATOR

LOG OUT

Create Account

Create Account

Email address

john@uncc.edu

First Name

john

Last Name

cena

Age

35

Password

.....

Confirm Password

.....

Create Account

CREATE STUDY COORDINATOR

LIST OF USERS

CREATE ACCOUNT

LIST OF STUDY COORDINATORS

CREATE STUDY COORDINATOR

LOG OUT

Create Study Coordinator

Create Study Coordinator

Email address

Mike@uncc.edu

First Name

Mike

Last Name

Plecko

Password

.....


Confirm Password


.....


Create Account


Smart Care Report


ADMIN HOME

 LIST OF USERS

 CREATE ACCOUNT

 LIST OF STUDY COORDINATORS

 CREATE STUDY COORDINATOR

 LOG OUT

List of Accounts

Log out

List of Study Coordinators

Email	First Name	Last Name	Password
lalith@uncc.edu	lalith	reddy	123
sdilly@uncc.edu	sai	nishanth	123

For study coordinators:

Study Coordinator Login x

Not secure | 18.216.218.221/smartcare/studycoordinatorlogin.html

Study Coordinator Login

sdilly@uncc.edu

...

Let me in.

Smart Care Report

Create Information

← → ↻ ⓘ Not secure | 18.216.218.221/smartcare/createinformation.html

☆ 🔒 📶 📶 📶 📶 📶 📶

CREATE INFORMATION MESSAGE

USERS IN STUDY

CREATE USERS FOR STUDY

CREATE INFORMATION QUESTION

CREATE MCQ QUESTION

LIST OF QUESTIONS FOR STUDY

CREATE SURVEY

LOG OUT

Create Question

Question

information question

Submit

☐ ☒ Send Every Hour ☐ ☒ Send at 05:59 & 00:00 ☐ ☒ Send at --:--

Create MCQ

← → ↻ ⓘ Not secure | 18.216.218.221/smartcare/createmcq.html

☆ 🔒 📶 📶 📶 📶 📶 📶

CREATE USER

USERS IN STUDY

CREATE USERS FOR STUDY

CREATE INFORMATION QUESTION

CREATE MCQ QUESTION

LIST OF QUESTIONS FOR STUDY

CREATE SURVEY

LIST OF SURVEYS

LOG OUT

Create Question

Question

How old are you?

Option 1

21

Option 2

23

If you want to add more options, Please enter the number of options you want to add

2

Option

24

Option

25

Submit

Add Options

No More Options

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Create Study

18.216.218.221/smartcare/createstudy.html

CREATE STUDY

LIST OF USERS

CREATE ACCOUNT

CREATE STUDY

LIST OF STUDIES

LOG OUT

Create Study

Create Study

Study Name

study name

Study Description

Study Description

Create Study

Create Survey

Not secure | 18.216.218.221/smartcare/createsurvey.html

CREATE USER

USERS IN STUDY

CREATE USERS FOR STUDY

CREATE INFORMATION QUESTION

CREATE MCQ QUESTION

LIST OF QUESTIONS FOR STUDY

CREATE SURVEY

LIST OF SURVEYS

LOG OUT

Create Survey

Survey Name

survey1

question1

Multiple choice

1

Select Choices

choice1

Add Question

Submit Survey

Smart Care Report

Create User

Not secure | 18.216.218.221/smartcare/createuser.html

CREATE USER

- LIST OF USERS
- CREATE ACCOUNT
- CREATE STUDY
- LIST OF STUDIES
- LOG OUT

Create Account

Create Account

Email address

Email

First Name

First Name

Last Name

Last Name

Age

Age

Password

password

Confirm Password

confirm password

Create Account

Create Users

18.216.218.221/smartcare/createusersforstudy.html

CREATE USERS FOR STUDY ADVANCEMAD

- USERS IN STUDY
- CREATE USERS FOR STUDY ADVANCEMAD
- CREATE INFORMATION QUESTION
- CREATE MCQ QUESTION
- LIST OF QUESTIONS FOR STUDY
- CREATE SURVEY
- LIST OF SURVEYS
- LOG OUT

Create Users For Study AdvanceMad

test@test.com

Select Users

Smart Care Report

STUDY COORDINATOR



USERS IN STUDY



CREATE USERS FOR STUDY

ADVANCEMAD



CREATE INFORMATION

QUESTION



CREATE MCQ QUESTION



LIST OF QUESTIONS FOR

STUDY



CREATE SURVEY



LIST OF SURVEYS



LOG OUT

List of Studies

List of questions(displays only MCQ questions)

Question

List of Studies

18.216.218.221/smartcare/liststudies.html

STUDY COORDINATOR

LIST OF USERS

CREATE ACCOUNT

CREATE STUDY

LIST OF STUDIES

LOG OUT

List of Accounts

List of studies

Study Name	Study Decription	
AdvanceMad	Advanced Mobile Application Development	Let me in the study
DB	Database Management System	Let me in the study
Hungerness	Study to know your food habbits	Let me in the study

Smart Care Report

STUDY COORDINATOR



USERS IN STUDY



CREATE USERS FOR STUDY

3



CREATE INFORMATION
QUESTION



CREATE MCQ QUESTION



LIST OF QUESTIONS FOR
STUDY



CREATE SURVEY



LIST OF SURVEYS



LOG OUT

List of Surveys

List of Surveys

Survey Name

InClass08

Let me in the survey

USERS FOR SURVEY



LIST OF USERS PER SURVEY



LIST OF SURVEYS



LOG OUT

List of Users in Survey

List of Users Per Survey

User Email

venkatesh@uncc.edu

View Responses

vikas@uncc.edu

View Responses

Smart Care Report

List Users

18.216.218.221/smartcare/listusers.html

ADMIN HOME

LIST OF USERS

CREATE ACCOUNT

CREATE STUDY

LIST OF STUDIES

LOG OUT

List of Accounts

Create Patient

Email	First Name	Last Name	Password	Age
test@test.com	test	test	test	24
venkatesh@uncc.edu	Venkatesh	Bon	123	23
vikas@uncc.edu	vikas	desh	123	22

List Users For Study

18.216.218.221/smartcare/listusersforstudy.html

STUDY ADVANCEMAD

USERS IN STUDY

CREATE USERS FOR STUDY ADVANCEMAD

CREATE INFORMATION QUESTION

CREATE MCQ QUESTION

LIST OF QUESTIONS FOR STUDY

CREATE SURVEY

LIST OF SURVEYS

LOG OUT

List of Users

List of Users in Study AdvanceMad

User Email
venkatesh@uncc.edu
vikas@uncc.edu



86% 11:50 AM

SMARTCARE

Please login.

User Name

Password

LOG IN



86% 11:51 AM



Studies

You are enrolled in:

Hungerness

Study to know your food habbits



86% 11:51 AM



Studies

Studies

My Profile

Logout



86% 11:51 AM



SmartCare!

First Name: test

Last Name: test

Email: test@test.com

Age: 24

Notifications

ON

Questions of Study: Final Demo

test

Options are

☐ Yes

☐ No

moments ago

You are invited to take test

TAKE TEST

moments ago

hi

5 hours ago

jello

5 hours ago

Survey1

You have already taken this survey

5 hours ago

how old are you?

You have answered 22

5 hours ago

← Step 4 of 4

test linkert

☐ 0

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

☐ 6

☐ 7

☐ 8



← Step 3 of 4

test mcq

☐ yes

☐ no

NEXT



19% 5:44 PM



Step 2 of 4

testopen

Answer

NEXT



86% 11:51 AM

SMARTCARE

Please login.

User Name

Password

LOG IN

Logged Out successfully