Cognitive Walkthrough Document:

FOR

STUDENT ACTIVITY DETECTOR AND ALERT GENERATION APP FOR INSTRUCTOR

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User Definition

In the cognitive walkthrough of "Student Activity Detector & Alert Generation App", the following definition of user was used: "The user for this app is a typical instructor of school or college level. The user doesn't necessarily own an extensive knowledge on background of computing, hardware and programming."

Team details: The team conducting the cognitive walkthrough had 3 members. The details of each of the members is as follows:

Member 1

    Age: 30

    Background: Has basic knowledge of smartphone and app usage

Member 2

    Age: 21

    Background: Has fairly high knowledge app usage and smartphones and is a tech enthusiast.

Member 3

    Age: 40

    Background: Has minimal knowledge of modern app usage

Task identification for evaluation

The following task was used for walking through in our process:

- **Identifying a non-attentive student & sending him an alert message.**

The goals and subgoals of the task are:

Goal: Identify a student and send him an alert.
  Sub goal 1:   Login by instructor.
    Sub goal 2:   Start a course to teach.
      Sub goal 3:   Start monitoring the class.
        Sub goal 4:   Identify the students who are not attentive in class.
          Sub goal 5:   Type a message to send to non-attentive students.
          Sub goal 6:   Send the message to non-attentive students.

Action sequence for task completion

Correct steps to be performed the task are:

    S1. Select 'Teacher' tab.
    S2. Enter 'User Id' & 'Password'.
    S3. Tap on a course.
    S4. Tap on the 'Start monitoring' button.
    S5. Tap on the tab of a red-marked student(non-attentive).
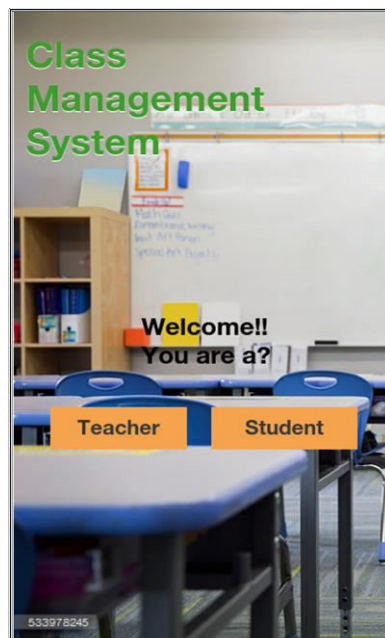   S6. Type message.
    S7. Press 'Send' button.

Detailed description of the actions are as follows:

The screenshots of the prototype are attatched with their respective actions.

- **Login:**
  Description: User has to open the app and select either he is teacher or student.
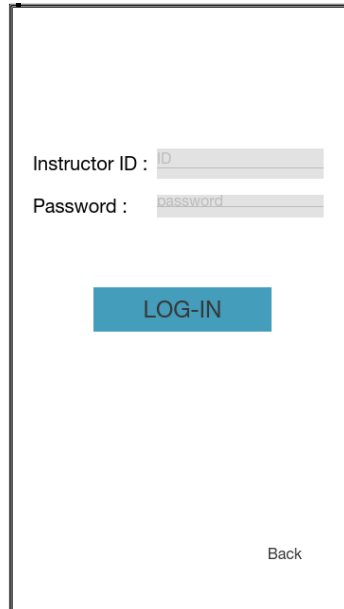 *Successful execution:* User opens the app and tap on 'Teacher' or 'Student' button based on his role.

- **Enter credentials:**

  Description: User has to enter his credentials to log in.

  Successful execution: After tapping student or teacher button, screen moves to the next screen where there are fields for 'User ID' and 'Password'. The user fills the fields and taps 'Log in'.
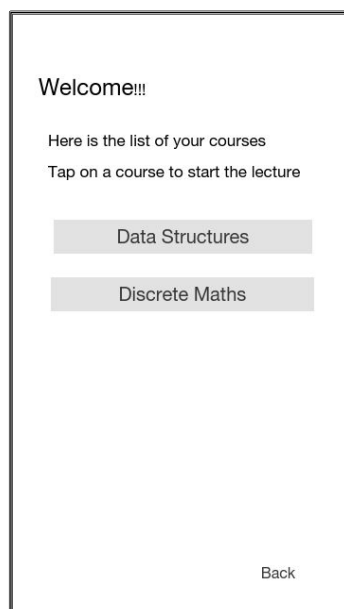
  Instructor ID : ID

  Password : password

  LOG-IN

  Back

- **Select course:**

  Description: User has to select a course to start monitoring.

  Successful execution: After successful login, user gets a list of courses he can teach. He taps on a button corresponding to the course he wants to teach.
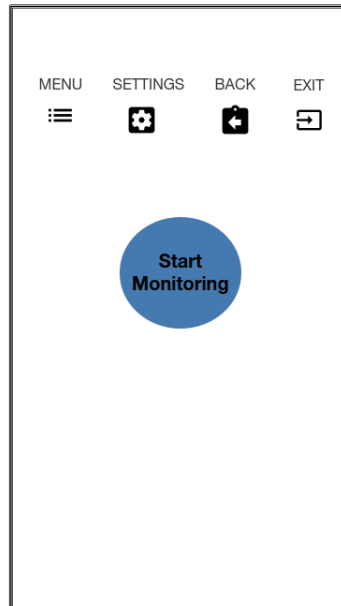
  Welcome!!!

  Here is the list of your courses

  Tap on a course to start the lecture

  Data Structures

  Discrete Maths

  Back

- **Start monitoring:**

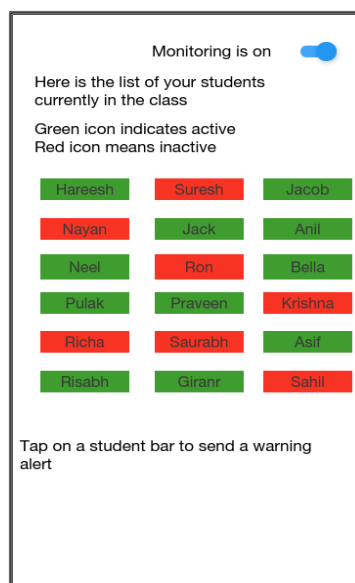 *Description:*   User has to start monitoring students.

  Successful execution: After selecting a course and staring lecture, user has to tap 'Start Monitoring' button for monitoring students.

- **Select student:**

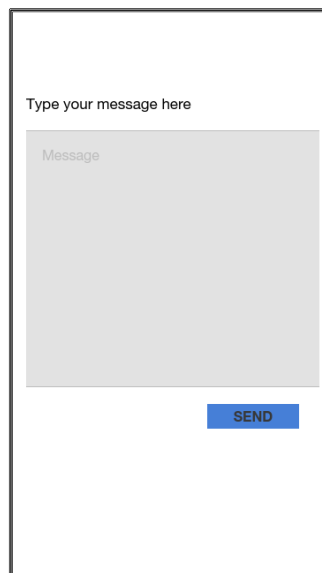 *Description:*   Instructor has to select an inattentive student to send message.

  Successful execution: After turning on monitoring, all the students' phone cameras will get activated and start scanning their activity. If a student is attentive, he will be shown as green, otherwise red. Instructor has to tap on an inattentive student's button to send alert.

- **Type message:**
  Description: Instructor has to type a message to send to corresponding student.
  Successful execution: After tapping a student's tab, instructor will be redirected to a screen where he has to write his message for sending to the student.
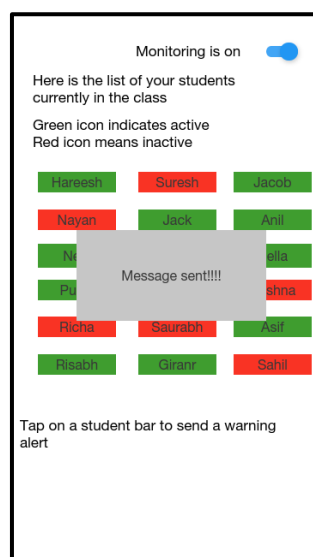

- **Send:**
  Description: Instructor has to send the message.
  Successful execution: After typing message, the instructor need to tap 'Send' button for sending the message. An alert with the message will be sent to the student's phone and a message will also appear on instructor's screen that alert has been sent.

Walkthrough Session

The following questions were chosen for users for walkthrough:
Q1. Did the user understand the purpose of the step?
Q2. Did the user notice that the correct action buttons/choices are available?
Q3. Did the user confidently know that he is headed to the right direction?
Q4. Did the user understand the feedback provided by the interface?

The following data was collected while conducting walkthrough with the cognitive walkthrough team members:

Member 1:

Description of step.	Did the user understand the purpose of the step?	Did the user notice that the correct action buttons/choices are available?	Did the user confidently know that he is headed to the right direction?	Did the user understand the feedback provided by the interface?
Login	Yes "it is clearly written on the screen itself"	Yes "two different tabs are available for student and teacher"	Yes	Yes
Enter credentials	Yes "Fields are given"	Yes	Yes	Yes
Select course	Yes	Yes	Yes	Yes
Start monitoring	No "What does monitoring mean?"	Yes "There is an onscreen button for it"	No "it is not clear what it will actually do"	Yes "It shows the list of students"
Select Student	Yes	Yes	Yes	Yes "Message field pops out"
Type message	Yes	Yes	Yes	Yes
Send	Yes	Yes	No "How will he student see the message"	Yes "it says message sent"

Member 2:

Description of step.	Did the user understand the purpose of the step?	Did the user notice that the correct action buttons/choices are available?	Did the user confidently know that he is headed to the right direction?	Did the user understand the feedback provided by the interface?
Login	Yes	Yes	Yes	Yes
Enter credentials	Yes	Yes	Yes	Yes
Select course	No	Yes	Yes	Yes
Start monitoring	No "define monitoring"	Yes	Yes	No "did the scanning start or not?"
Select Student	Yes	Yes	Yes	Yes
Type message	Yes	Yes	Yes	Yes
Send	Yes	Yes	Yes	Yes

Member 3:

Description of step.	Did the user understand the purpose of the step?	Did the user notice that the correct action buttons/choices are available?	Did the user confidently know that he is headed to the right direction?	Did the user understand the feedback provided by the interface?
Login	Yes	Yes	Yes	Yes
Enter credentials	Yes	Yes	Yes	Yes
Select course	No "What is it supposed to do"	Yes	Yes	Yes
Start monitoring	No "What does monitoring mean"	Yes	No	Yes "Student list show up"
Select Student	Yes	Yes	No	Yes
Type message	Yes	Yes	Yes	Yes
Send	Yes	Yes	Yes	Yes

Analysis and inference:

Description of step.	Mismatch question	% mismatch	Potential problem
Login	NIL	NIL	NIL
Enter credentials	NIL	NIL	NIL
Select course	Q1	66%	The user doesn't know what to expect.
Start monitoring	Q1	66%	User did not know what 'Monitoring' mean in this context
	Q4	33%	User wasn't sure if monitoring started or not.
Select Student	Q3	33%	User was not sure how interface will respond on pressing the student tab.
Type message	NIL	NIL	NIL
Send	NIL	NIL	NIL

Summary:

The actions which had more than 50% negative answers for 1 or multiple questions under it shall be considered for improvement.
The system as a whole needs improvement too.

The actions that needed to be improved are:

- **Start Monitoring**
  Possible improvement: Add an (i) button near the start monitoring button, clicking on which will show a pop up and help the user understand the aspects of 'monitoring' function. Here the pop up may say "With monitoring, you can turn on camera and sensors of students' phone and get attentiveness state of your students".

- **Selecting a course**
  Possible improvement: Giving the user an appropriate tutorial animation while running the app for the first time, so that he can understand the purpose of the action.