**HCI PROJECT REVIEW-3**

**SUBMITTED BY:**

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**THEME:** **Class Attendance Management Problem**

**1)** **Tabulate input modality, output modality, sensing modes and its parameters and justification required in designing "Your application".**

**Justification:**

Biometric attendance system is the automated recognition of individuals based on their behavioral and biological characteristics. It is a tool for establishing confidence that one is dealing with individuals who are already known or not known and consequently that they belong to a group with certain rights. It relies on the presumption that individuals are physically and behaviorally distinctive in a number of ways illustrates the basic operations of a recognition process. Human recognition systems are inherently probabilistic. The chance of error can be made small but not eliminated. System designers and operators should anticipate and plan for the occurrence of errors, even if errors are expected to be infrequent.

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| --- | --- | --- | --- |
| **Input Modalities** | **Output Modalities** | **Sensing Modes** | **Parameters** |
| Radio frequency Identifier | Digital display | Visual: Can see the attendance status by color | Enrolment |
| Barcode Scanner | Indicator Lamp(to describe the status) | Tactile: Fingerprint recognition | Failure to capture and Failure to enroll  Detection Error Rate |
| Button(Switch on or off) | User’s and admin’s device to check the attendance | Haptic: Buttons to operate the system | Verification and Identification |
| Fingerprint, Finger vein(Additional) | Multifunctional display | Barcode recognition | Authentication |

**2) List the factors that as a designer you need to understand for designing "your application"**

**FACTORS FOR DESIGING THIS APPLICATION:**

* Barcode identity in every students id card must be different and it has to register student details.
* Barcode identity in every teacher id card must be different from student one because when they enter and exit the attendance of student gets locked partially and completely respectively.
* The receiving system in class must register with class room id and class timing of particular subject and teacher. It should be connected to internet so that it can immediately display and mark present/absent according to presence of students.
* In the software it has to monitor every student status(like leave, on-duty, absent) and it should display to users while attendance is going on.
* Alternatively fingerprint biometric data also should be taken if any inconvenience occur in the system it will automatically consider fingerprint of the user.

**3) Discuss the modalities of interaction that have explored recently when used in your application would enhance the interface?**

a. Device will make sound if anyone try to leave the class while class is going on.

b. Notification is send immediately to student after partial lock.

c. Creation of separate table for present, absent, leave, on-duty student.

d. Stores student timings for their presence.

e.

**4)List out the representative task, representative users and usability measures required for your application to conduct usability testing.**

**Representative task :**

1.Modification of attendance by teacher when it is partial lock.

2.Verification of attendance capture.

3.Displays student attendance status.

**Representative users:**

1.Faculty of particular class

2.HOD of particular department

3.Students of the class

**Usability Measures:**

1.If user can modify the attendance of student then it is good result or else we have to solve the error.

2.If it displays the student presence/absence according to presence of student then it sounds good else we have to solve the problem by modification

3.If it displays the student status in color which must be

true for that propose , if it does it sound good. else we have solve the problem

**5)Provide two different task models for a single functionality of your choice and analyze the sequence of interaction using GOMS theorem.**

Checking Attendance Status using GOMS theorem

|  |  |
| --- | --- |
| Type of operation (**for students**) | Time estimate |
| 1)Reach for mouse | 400ms |
| 2)Move pointer to “Attendance Status” button | 1100ms |
| 3)Click on “Attendance Status” option | 200ms |
| 4)Select the date of class attendance field | 300ms |
| 5)Point to “Slot” selection | 1100ms |
| 6)Move pointer to “+” or “-” | 1000ms |
| 7)Choose any button to add or remove classes in attendance calculator | 1800ms |
| 8)Click on the required field | 200ms |
| 9)Click “Submit” to view the resultant status | 300ms |
|  | Total time = 6400 ms |
|  | Avg time = 711.12 ms |

|  |  |
| --- | --- |
| Type of operation (**for faculty**) | Time estimate |
| 1)Reach for mouse | 400ms |
| 2)Move pointer to “Attendance Status” button | 1100ms |
| 3)Click on “Attendance Status” option | 200ms |
| 4)Point to “Modify” option | 1100ms |
| 5)Click on the field | 200ms |
| 6)Select the date of class attendance field | 300ms |
| 7)Point to “Slot” selection | 1100ms |
| 8)Specify option “Present” or “Absent” | 400ms |
| 9)Click on the required field | 200ms |
| 10)Move pointer on “Update” | 1100ms |
| 11)Click on the field | 200ms |
|  | Total time = 6300 ms |
|  | Avg time = 572.73 ms |