# Purpose

The purpose of developing attendance tracking system is to computerize the traditional way of taking attendance. Another purpose of this system is to reduce the burden of taking attendance for the instructor and to eliminate duplicate data entry, errors in time and attendance entries. It improves visibility to track and manage student attendance.

# Scope

The scope of this project is to track the student attendance by generating QR code. To elaborate, we have provided more functionalities to the department head and instructor, they can view the student attendance as well as they can see the number of students present in class on a day with representation of bar graph, they can manage courses as per CRN and they can add a course likewise they can remove the course too. Students can view the attendance and we have limited the access for students like one user can only scan QR code with one mac address. This system is limited to the Northwest Missouri State University.

The project is mainly focused on the students to mark their attendance using a QR code which is generated by the instructor at any point of time in a class. There are mainly three modules in the system they are the Student, Admin and the Instructor. These three modules have different functionalities to perform their own task.

Different screens of the iOS (mobile) application:

* Login Page
* Scanning the QR code page
* Capturing the QR code
* View Attendance of the student.
* View courses registered.

Based on the functionality, the system is divided into three modules. Along with the interface of the pages, the modules contain their own respective process to communicate with the database and update accordingly.

As mentioned above the initial pages are the welcome and the login pages. These modules also consist of issues which may be used for collaborating with the other modules to retrieve the data effectively.

Student view module plays a major role in the system. He is responsible for login in to the system using his Student ID as his user name and using his unique password with all the constraints. He then scans the QR and captures an image of the QR and then sends it to the instructor for grading his attendance. He can also view the overall courses he is registered in to and check the individual percentage in each of his course. He receives a feedback as soon as the code is captured and is sent to the instructor for grades.

Admin plays a kind of actor who is responsible for all the roles, he can also be defined as the head of the department. He is capable of login into the system and view different courses present in the system, capable of managing students such as check student details, student’s attendance, capable of managing the instructor such as checking the details of the instructor and capable of add or deleting or the QR code for a course.

Instructor can manage the student and his attendance. He is also capable of updating the attendance details of the student. He has many vital roles such as managing the courses, managing the students, and displaying the QR codes. In the process of managing the student instructor can view the details of the students and check the percentage of the student and update it. In the process of managing the courses he can add or delete the courses with his own sections. He is also allowed to display the QR codes according to the time at which the class meets and the CRN number and he also has access to generate multiple QR codes based on his requirements for a specific class at any point of time.

|  |  |
| --- | --- |
| **Instructor Module/Admin Module** | **Student Module** |
| Login Page | Login page |
| Dash board | Home tab |
| Add/remove a course | QR scanning tab |
| Mark/delete student attendance | Profile tab |
| Add/delete Instructor | - |

Function Definitions

private int getCourseID();

private int getStudentID();

private int getInstructorID();

private int getDepartmentID();

private int getNoOfCourses(int departmentID);

private String getCourseName(String courseNo);

private double getAttendancePercentage(int StudentID, int courseNo);

private double generateQR(int noOfQrs, int courseNo, int timeInterval);

private String getCourseDetails(int CourseNo);

**Instructor module:**

**Login Page:**

The purpose of the module is to validate the admin/instructor credentials with the credentials in the database and navigate to home page to the if the credentials are matched. If the credentials are wrong, the module should provide the user with a proper and significant feedback. Login should also provide an option for the user to sign up for the system.

**Dash board:**

Dash board should present the user with options to navigate to all the core functional features for the specific user and an option for the user to logout of the system.