

APP Festo - Team Name - App Masters

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Abstract:

Problem statement:

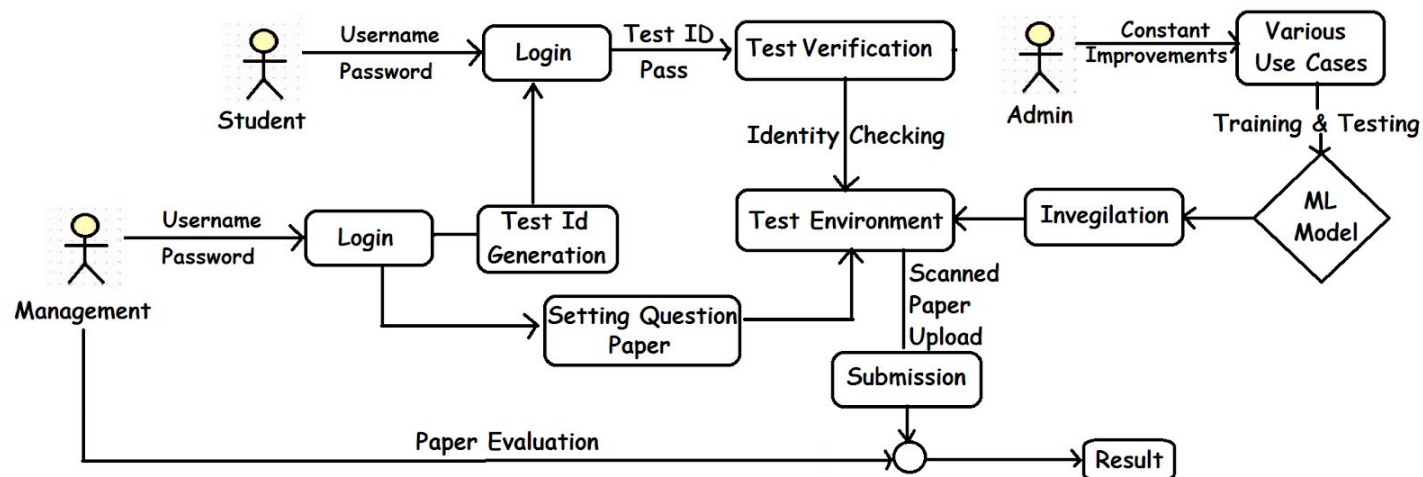
With the COVID-19 prevalent all over the world and is posing a big threat to everyone, corporate companies and educational institutions have taken advantage of e-learning.

While the educational institutions have been tremendously benefitted by e-learning, then again it comes to a question of how effective it is to conduct the examinations online. When students are taking their examinations online, there is no possibility of a physical proctor to be present with the student. By asking the students to take their exams in front of the camera, and with the help of computer vision we have the possibility of helping the institutions by providing a virtual invigilator.

Proposed solution based on the problem:

This project focuses on detecting any violation of exam rules by the students by tracking their eyeball movement and authenticating each student by their email and password provided by the institution. Our idea is to detect the online examination fraud through the behavioral analysis of students. We will be using **OpenCV** to capture the eyeball movement of the student and calculate and display the time in which a student did not appear in front of the camera. By restricting the eyeball movement in a specified region and measuring the time of absence of a student from their camera device, the institution can find if there is a violation of exam rules by any student.

App Masters - UML Diagram



Objectives of our applications:

- The objective of this project is to help educational institutions to find any during online examinations, and mal-practices can be avoided quite enough.
- By using our application, the quality of the students can be assessed by taking up the online exams will give maximum accuracy.
- Students will be more cautious as in the exam hall as there is an online invigilator watching us i.e our application.

Platform to our Solution:

This app will be a web app and we plan to take it to a progressive web app (PWA). Progressive Web Apps provide an installable, app-like experience on desktop and mobile that are built and delivered directly via the web. As PWA apps are fast and reliable and has the power to make it an offline app experience, this project created as a PWA would be efficient and faster for both the developer and the user.

Features:

- Fast & Reliable
- Installable
- **Full responsiveness and browser compatibility.** These apps are built according to progressive enhancement principles. Progressive enhancement is the web design strategy of providing the basic functionality and content to everyone regardless of browsers they use or connection quality while delivering more sophisticated page versions to users whose newer browsers can support them.
- **Connectivity independence.** Progressive web applications can work both offline and on low-quality networks.
- **App-like interface.** These apps mimic navigation and interactions of native apps.
- **Push notifications.** If used as a part of a good messaging strategy, push notifications can keep customers interested, motivating them to open and use an app more.
- **Self-updates.** Able to update themselves automatically, apps stay fresh.
- **Safety.** These apps are served through **HTTPS**, so unauthorized users can't access their content.
- **Discoverability and easy installation.** While search engines classify PWAs as applications, they are not distributed via app stores. These apps can be shared through a URL instead so they're easily found. The installation is simple and entails visiting a site and adding it to a device home screen.

Functionalities:

Field:

1. Username and Password filed for students.
2. Username and Password for organizations.(schools and colleges)
3. Unique id and password generation to attend specific tests.

Things to be noted:

1. Eye site detection- To check whether the student is viewing only on a specified range.
2. Identity Test - To check whether the correct student is writing the Test.
To perform, this profile photo is compared with the live image of the student