Software Requirements Specification

For

Online Remote Examination

With full surveillance

# Introduction

## Problem Statement

During this pandemic situation, there are lot of challenges which are faced by our education system. IT is possible to get education from home through online means. But to test that knowledge and give a proper exam without any unfair means is very difficult.

Till now, there is not any platform which gave you option to conduct exams that is free from any unfair means. The problem it faces are:

* Using of unfair means
* Exam is not given by the authorized person
* Help by others during exam, etc.

## Proposed Solution

To deal with maximum problems and tries to provide appropriate examination environment. We came up with a software application which tries to conduct exam without any plagiarism and unfair means.

Under this application, student will be under surveillance and his surrounding audio and his video will be continuously capture and monitor. If any unfair means caught if will provide warnings, if still there are unavoidable reason. His exam will be considered as unaccepted.

# Functionalities

## Admin

* Can login into the portal.
* Perform CRUD operation on Admin and Teacher.
* Can see the defaulter list.
* Can see the ranking on the basis of score in exam.

## Teacher

* Can login into the portal.
* Can create an examination for the students.
* Can provide questions and time for the examination.
* Can check the result/response in the examination of the student.
* Can see the accuracy level or check any student uses unfair means by checking his monitoring table that posses data regarding activity of student during examination.
* Can see the defaulter list.
* Perform CRUD operation on Student.
* Can see the ranking on the basis of score in exam.

## Student

* Can login into the portal.
* Can give examination.
* See his result as well as his activity record.
* Can see the ranking on the basis of score in exam.

# Platform

This Application is going to be full stack web application which can accessed through any browser developed using various technologies which includes:

* For Frontend:
* HTML, CSS, php, javascript, Bootstrap
* For Backend
* Python, Machine learning, Deep learning, Cloud services,
* For Database
* Cloud Storage

# Application Features

* **Authorization**
  + Continuously check whether the person giving exam is the right person or not.
* **Optimized Storage**
  + Taking screenshot at random interval instead of continuous helps to reduce the database size.
* **Video Surveillance**
  + Check the student at random interval and tries to detect unfair means.
* **Browser Security**
  + Maintain record if any other tab open or the key pressed while giving exam.

# System Requirements

Following are the requirements for the application:

* Application Should be open in browser either in laptop or personal computers.
* Application should have permission to use system mic and system camera.
* There will be requirement test for the system to check it is capable for taking the exam or not.

# Safety Requirements

* Databases should use sharding to be redundant to prevent loss of data.
* Backups of the databases should be done hourly and be kept for one week.

# Security Requirements

* Any keys used for the REST API should be stored securely.
* Only the REST API should be able to connect to the databases.
* Databases should be behind a firewall.