



Exam Management System

CSE, SUST



Introduction

EMS is a software that can perform web-based examination system where teacher and student can manage exams online, publish results, test integrity and so on!



Motivation

When we first heard about this project, it was already working great. Our vision was to see SUST, to use this piece of software to assess students even if they are not in campus due to pandemic or whatever the reason is. Also an online exam management system is not only taking the exam, also it automates and reduces a lot of work load for the teacher as well as department, which could enable them to be more productive and help us be better engineers!



Key Features

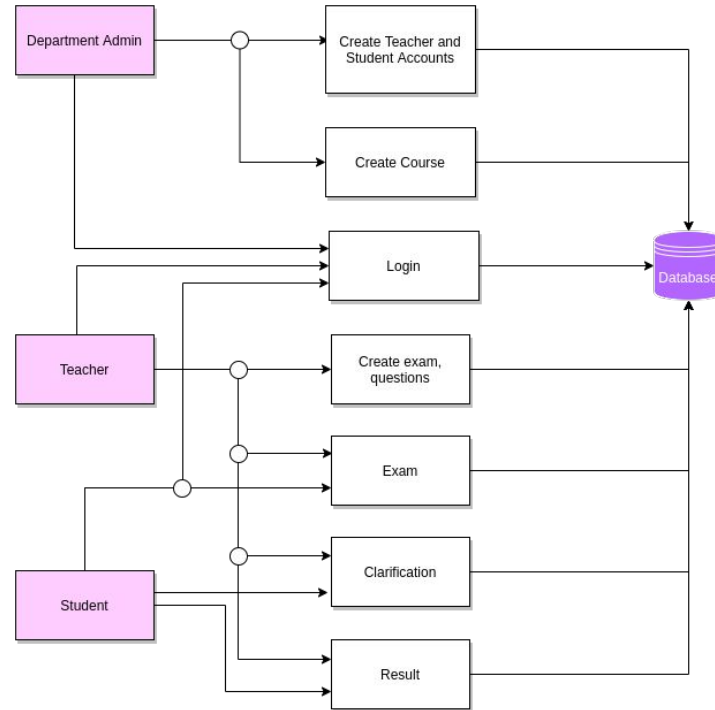
- Creating MCQ/free-text/code based Exam
- Evaluating and grading (auto/manual)
- Plagiarism Detection
- creating dummy accounts for students to attempt an exam
- evaluating dynamic answers by running a code
- Publishing results of a exam/test without any hassle



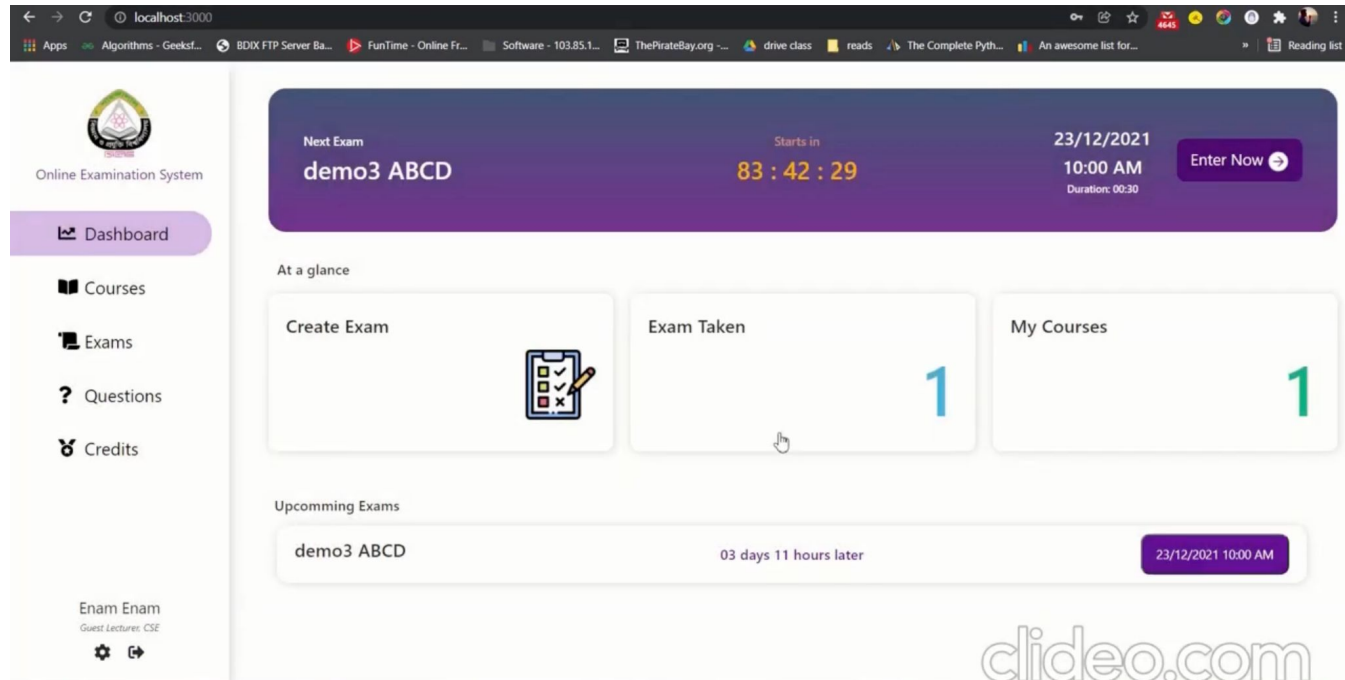
Tools And Technologies

- Frontend
 - React.js as frontend
 - Ant design as Ui Framework
 - Redux as state management tool
- Backend
 - Node.js runtime environment
 - Express.js Routing framework
 - Moment.js to handle exam time management
 - Sendgrid Mailling api
- Devops
 - Pm2 as long running process manager
 - UFW to block all ports
 - Nginx as proxy server

Component Diagram



Dashboard for a Student



The screenshot shows a web browser at localhost:3000 displaying a student dashboard. The browser's address bar and tabs are visible at the top. The dashboard has a left sidebar with a logo and navigation links: Dashboard, Courses, Exams, Questions, and Credits. The main content area features a purple header for the next exam, 'demo3 ABCD', with a countdown timer of 83:42:29 and a start time of 23/12/2021 at 10:00 AM. Below this, there are three cards: 'Create Exam' with a clipboard icon, 'Exam Taken' with a large blue '1', and 'My Courses' with a large green '1'. At the bottom, an 'Upcomming Exams' section shows the same exam starting in 03 days 11 hours. A watermark 'clideo.com' is present in the bottom right corner.

localhost:3000

Apps Algorithms - Geeks... BDIX FTP Server Ba... FunTime - Online Fr... Software - 103.85.1... ThePirateBay.org -... drive class reads The Complete Pyth... An awesome list for... Reading list

Online Examination System

Dashboard

Courses

Exams

Questions

Credits

Enam Enam
Guest Lecturer: CSE

Next Exam
demo3 ABCD
Starts in
83 : 42 : 29
23/12/2021
10:00 AM
Duration: 00:30
[Enter Now](#)

At a glance

Create Exam

Exam Taken

My Courses

Upcomming Exams


demo3 ABCD

03 days 11 hours later

23/12/2021 10:00 AM

clideo.com


Student Exam Dashboard



Online Examination System

- Dashboard
- Courses
- Exams**
- Results
- Credits

Ovishek Paul



← Exam

Term test 01 (CSE 135)

Running 00 : 53 : 52

Total 6 questions

Answer Questions

Title	Type	Marks	
Favorite Picture	broad	10	
Broad Question	broad	10	
Matching Question	matching	10	✓
Fill blank	fillInTheBlank	10	✓
Supernova	broad	10	✓
Code code code	broad	10	✓

Clarifications

Ask a question

Select Topic

All

Topic: Matching Question **ANSWERED**

How to solve this?

Asked by Ovishek Paul 23d ago

Answer: Just drag the buttons right and match corresponding row!

General **PENDING**

Do you take another exam?

Asked by Ovishek Paul 23d ago



Plagiarism Detection

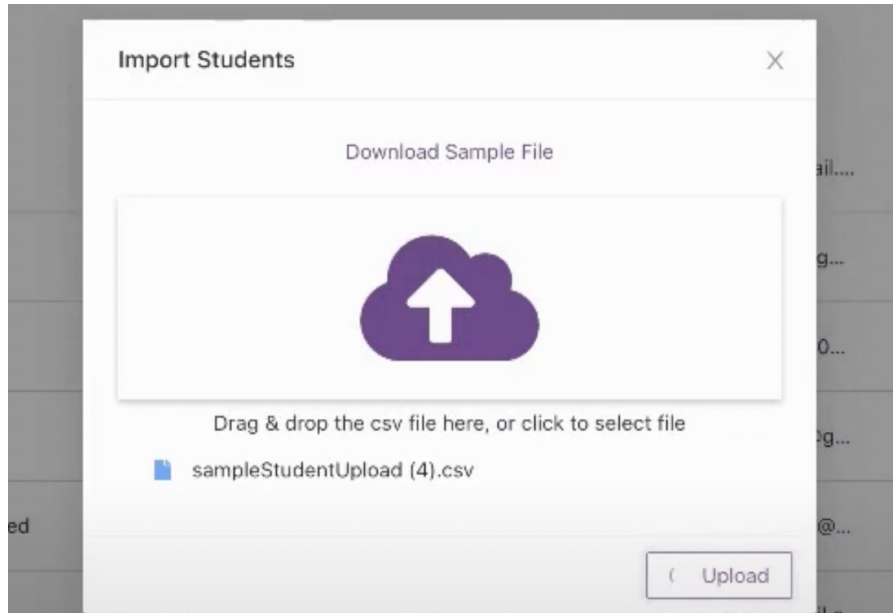
Logging User-Agent to track same ip address login sessions

```

  data: Object
    ip: Object
      ip: "42.0.6.239"
      hostname: "gprsdk208.robi.com.bd"
      city: "Dhaka"
      region: "Dhaka"
      country: "BD"
      loc: "23.7104,90.4074"
      org: "AS24432 TM International Bangladesh Ltd.Internet service Provider,Guls..."
      postal: "1000"
      timezone: "Asia/Dhaka"
    device: Object
      browser: "Chrome"
      browserVersion: "96.0.4664.110"
      os: "Windows 10.0"
      platform: "Microsoft Windows"

```

Importing Students From a CSV





Download Credentials in a batch

```
Users > royantar > Downloads > student_creds (6).csv
```

```
1  "registrationNo","email","password"
```

```
2  "20181111112","royantar1+2@gmail.com","E95jx38Vfo"
```



Achievements

- A short term test on July of CSE'19
- Two Lab finals of CHE'18 and PAD'18 on December
- Two Lab Finals of CSE' 19 on December



Future Goals

- Introduce serverless architecture to some services
- Optimize Database queries
- Introduce caching
- Use server side rendering for pages that will remain static for at least a few seconds
- Saving exam attempt data periodically in a optimized way (currently over 100 requests per second for one batch)



Team

Supervisor

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Team Lead

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Developers

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Acknowledgement

Thanks to all the Open Source engineers who helps us by making libraries, writing their findings, best practices, solving approaches and error findings and Stackoverflow.com for their wonderful community.



Thank You