

Online Examination/Assessment System

Live Application: [Click here](#)

Abstractions: The Examination system is a web application system that is able to manage the student exams or assessment by computerized way. It gives fast service to the student as well as to the faculty for the exam or assessment related stuff.

Existing System: The following drawbacks of existing system emphasize the need for online system:

1. A lot of copies of question papers have to be made – wastage of paper
2. A lot of correction work needs to be done manually – delays in giving the results.
3. A lot of tabulation work for each subject results.

Proposed System: Using an online examination/assessment system, the students can sit at individual terminals and login with their credentials to write the exam in the given duration. The Faculty can create questions papers, evaluate the online answers submitted by students easily without any pen-paper work.

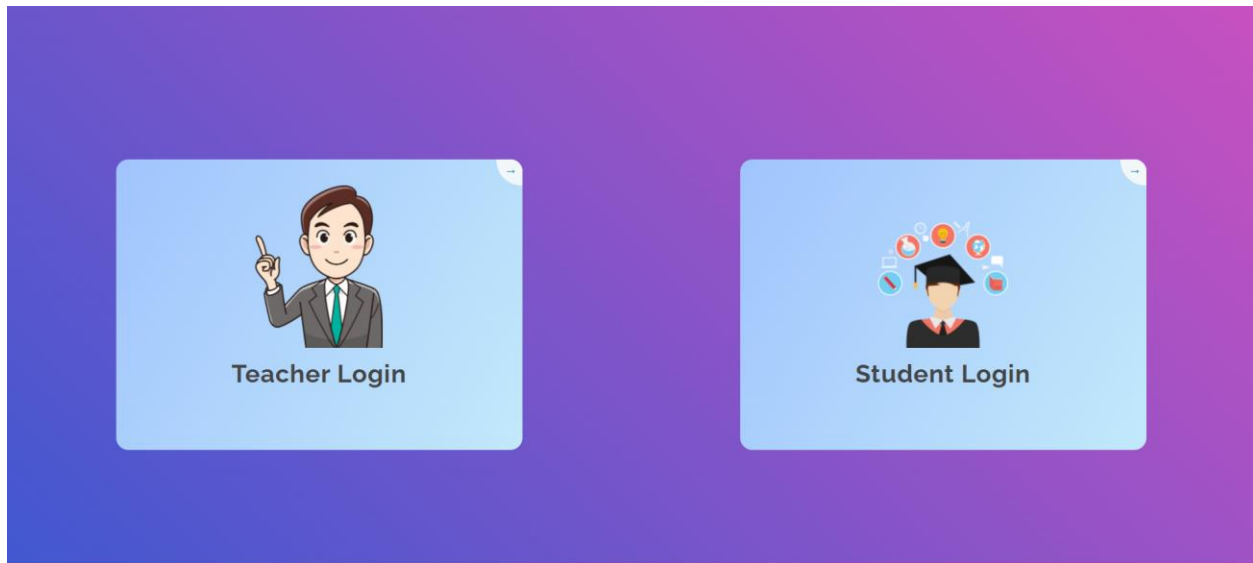
Objective: To develop the Manual Existing Examination/Assessment System into an Online Examination/Assessment System.

Scope: System is designed for Educational Institutes (likes schools, Universities, Training centers). The system handles all the operations, and generates reports as soon as the test is finished, that includes name, scored marks, time spent to solve the exam/test.

The Scope of this proposed system will be explained in terms of:

- Faculty Panel
- Student Panel

Below is the displayed Home Page:



FACULTY PANEL

The image shows a "Faculty Login" form centered on a purple-to-blue gradient background. The form is white and contains the following elements: the title "Faculty Login", a "Username" input field with a user icon, a "Password" input field with a key icon, a "REMEMBER ME" checkbox, a "Forgot Password?" link, a purple "LOGIN" button, and a section for "or sign in with" featuring icons for Facebook, Twitter, and Google.

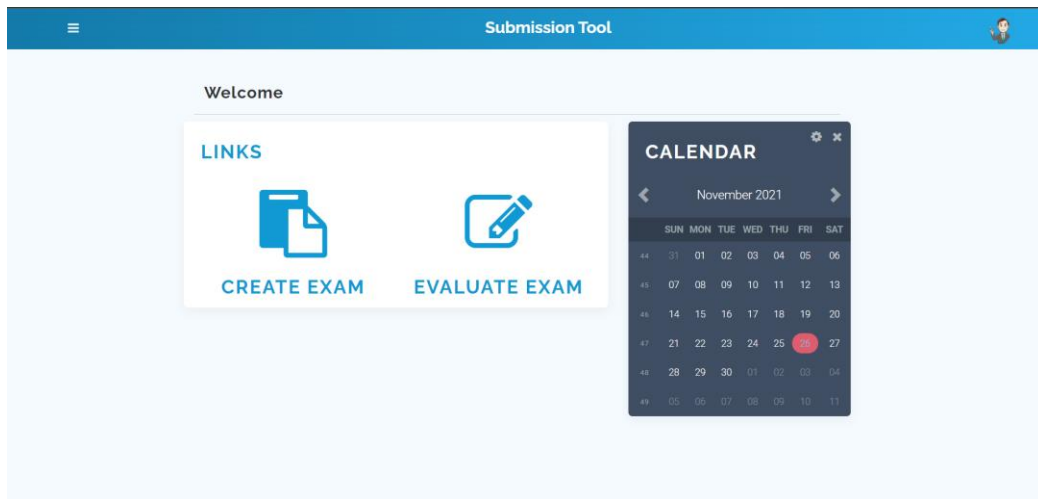
- The faculty will login to the software using his/her static credentials.

Username as: 4444

Password as: 1234

- After a successful login, faculty has two options:

- Create Exam
- Evaluate Exam



- 1. Create Exam :** There will be a form displayed to faculty which needs to be filled for creating a question paper for students:
 - a. Course - for which course the exam needs to be conducted
 - b. Subject – Name of Subject
 - c. Schedule Start and End date
 - d. Schedule Start and End time
 - e. Exam Title - displayed at top of the question paper
- 2. Evaluate Exam:** Here, all the submitted sheets will be displayed by the student so that teacher can evaluate the answers:

Let's create an exam for Data structures and Algorithms:

The screenshot shows the 'Submission Tool' interface with a 'FORM' section. The form contains the following fields:

Field	Value
COURSE	BTech
SUBJECT	Data Structures And Algorithms
START DATE	27-November-2021
END DATE	27-November-2021
START TIME	01:45
END TIME	02:00
EXAM TITLE	CT-2

Below the form is a 'Submit' button. At the bottom left, there is a 'View Previous' button.

Now, after submitting the form faculty needs to create question paper:

The screenshot shows the 'Submission Tool' interface with a 'CREATE FORM' section. The form contains the following fields:

Field	Value
START DATE	27-November-2021
END DATE	27-November-2021
START TIME	01:45
END TIME	02:00
EXAM TITLE	CT-2

Below the form is a 'Submit' button. The 'CREATE FORM' section also displays the exam details: 'BTech - Data Structures and Algorithms' and 'CT-2'. A 'Note' section provides instructions: 'Click on plus button to add new question.', 'In step 1 select the type of question.', 'In step 2 fill the necessary attributes of selected question.', and 'After completion click on submit button at the bottom of the page.' At the bottom right, there are two buttons: 'Clear form' (with a trash icon) and 'Add Ques.' (with a plus icon). Two blue arrows point to these buttons from the right side of the screen.

Form has two options:

- Clear form – will clear complete form
- Add questions – will add questions in the form

While adding questions these features will be displayed:

CT-2

Note:-

- Click on plus button to add new question.
- In step 1 select the type of question.
- In step 2 fill the necessary attributes of selected question.
- After completion click on submit button at the bottom of the page.

Clear form

STEP 1

Text Number Email

Dropdown Paragraph Radio

Checkboxes Date Image Upload

Note:- Click on gear icon to cancel adding question.

Submit

View Previous

Now, suppose **we add MCQ question** by selecting radio button, then filling details mentioned below:

Submission Tool

STEP 2 (RADIO)

PREVIEW

Which type of data structure Array is?

PROPERTIES

ENTER QUESTION*

Which type of data structure Array is?

Max. Marks 2

Mandatory ☒

Tip

Options*

☒ Linear Data structure

☐ Non-linear data structure

☐ Hierarchical data structure

☐ Network model data structure

Note:- Click on gear icon to cancel adding question.

Add Question

Now, we have **few options for each question on right side** which have following features:

The screenshot shows the 'Submission Tool' interface. At the top, there's a blue header with 'Submission Tool'. Below it, a light blue bar says 'CREATE FORM'. The main content area is titled 'BTech - Data Structures and Algorithms' with 'CT-2' below it. A 'Note:-' section lists instructions: 'Click on plus button to add new question.', 'In step 1 select the type of question.', 'In step 2 fill the necessary attributes of selected question.', and 'After completion click on submit button at the bottom of the page.' The question is 'Which type of data structure Array is?'. There are four radio button options: '1) Linear Data structure', '2) Non-linear data structure', '3) Hierarchical data structure', and '4) Network model data structure'. To the right of the question, there's a 'Clear form' button with a trash icon and a context menu with options: 'Move Up', 'Delete', 'Edit', and 'Move Down'. Below the question, there's a text input field with the placeholder 'Write your answer' and a '[Marks - 2]' label. At the bottom, there's a 'Submit' button and an 'Add Ques.' button with a plus icon.

We submit this form **using submit button** and it will show **pop up box** whether to submit surely or not and then success pop box will appear:

This screenshot shows the same 'Submission Tool' interface as the previous one, but with a confirmation pop-up box in the center. The pop-up box has a yellow warning icon and the text 'Are you sure?' followed by 'The form is completed!'. It has two buttons: 'Cancel' and 'Yes'. The background of the form is dimmed.

The screenshot shows a 'Submission Tool' interface. A modal window titled 'FORM' is displayed, containing input fields for 'COURSE', 'SUBJECT', 'START DATE', 'END DATE', 'START TIME', 'END TIME', and 'EXAM TITLE'. A 'View Previous' button is located at the bottom left of the modal. A confirmation dialog box is centered on the screen, featuring a green checkmark icon, the text 'Done!', and a message 'The form has been saved.' with an 'OK' button.

Now, we have **previous button** also in create form page:

This screenshot shows the 'Submission Tool' interface with the 'FORM' modal. The modal contains the same input fields as the previous image. A blue arrow points from the left side of the screen to a 'View Previous' button located at the bottom left of the modal. A 'Submit' button is visible at the bottom right of the modal.

When **we click previous button** then **faculty will be able to delete or update or view** only those questions papers which are yet to start in the upcoming time period (start time > current time).

Like shown below:

Here, Data structures and Algorithms test is not active yet so faculty can perform delete, update, **view** operation on this test.

Submission Tool

FORM

COUSER

START DATE

START TIME

EXAM TITLE

SUBJECT

END DATE

END TIME

PREVIOUS FORMS

Sno.	Course	Subject	Exam Title	Start Time	End Time	Edit	Delete Survey
1	A	A	SASASA	2021-11-27 15:00:00	2021-11-27 19:00:00	<input type="button" value="view"/>	<input type="button" value="Delete"/>
2	BTECH	DATA STRUCTURES AND ALOGRITHMS	CT-2	2021-11-27 01:45:00	2021-11-27 02:00:00	<input type="button" value="view"/>	<input type="button" value="delete"/>

If faculty **chooses view option**, then they will see the form with update button below:

CREATE FORM

BTECH - DATA STRUCTURES AND ALOGRITHMS
 CT-2

Note:-

- ▶ Click on plus button to add new question.
- ▶ In step 1 select the type of question.
- ▶ In step 2 fill the necessary attributes of selected question.
- ▶ After completion click on submit button at the bottom of the page.

Which type of data structure Array is? [Marks - 2]

☐ 1) Linear Data structure

☐ 2) Non-linear data structure

☐ 3) Hierarchical data structure

☐ 4) Network model data structure

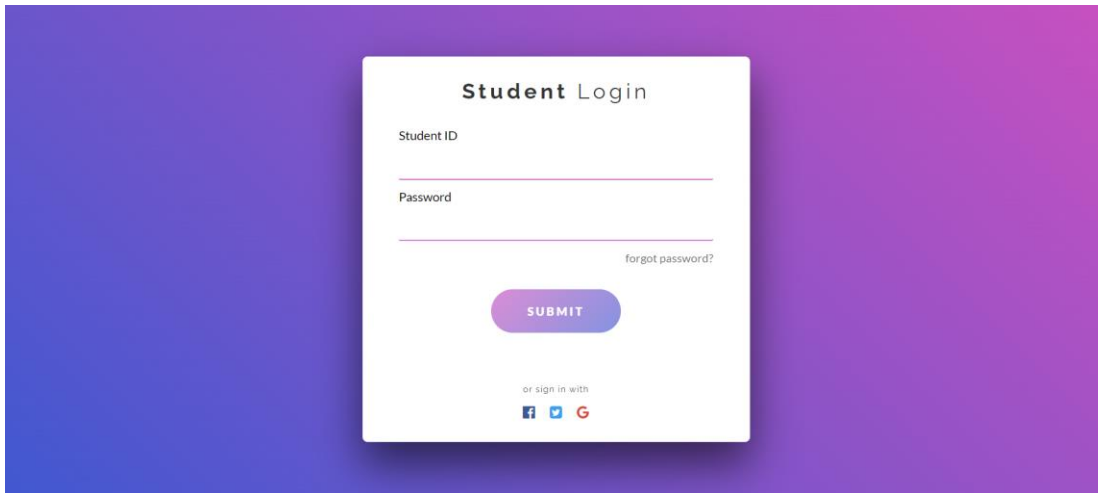
_____ means organization of data. [Marks - 2]

Write your answer

So, if faculty wants to add more questions then he/she can update the question paper.

Now, comes student portal

STUDENT PANEL



- The student will login to the software using his/her static credentials.

Username: yash123

Password: yash123

- After successful login they will be able to see the three sections:
- Live Exam
 - Upcoming Exam
 - Previous Exam



Welcome Yash

LIVE EXAM

S.No.	Course	Subject	Exam Title	Start Date	End Date	Action
1.	BTECH	SOFT COMPUTING	TEST	2021-11-26 22:00:00	2021-11-27 16:55:00	ATTEMPT
2.	BTECH	SOFT COMPUTING	TEST	2021-11-26 22:00:00	2021-11-27 16:55:00	ATTEMPTED
3.	BTECH	SOFT COMPUTING	TEST 2	2021-11-26 23:57:00	2021-11-27 22:00:00	ATTEMPT

UPCOMING EXAM

S.No.	Course	Subject	Exam Title	Start Date	End Date	Countdown
1.	A	A	SASASA	2021-11-27 15:00:00	2021-11-27 19:00:00	0d 13h 19m 36s
2.	BTECH	DATA STRUCTURES AND ALGORITHMS	CT-2	2021-11-27 01:45:00	2021-11-27 02:00:00	0d 0h 4m 36s

PREVIOUS EXAM

S.No.	Course	Subject	Exam Title	Start Date	End Date
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- LIVE EXAM:** This is a section where students will be displayed with all the exams which are currently active. It will also display:
 - Course
 - Subject of exam with exam title
 - start and end date
 - Button which displays whether student attempted the exam till yet or not (student can attempt the exam at most 1 time).
- UPCOMING EXAM:** This is a section where students will be displayed with the exams which are scheduled later. It will display:
 - Course
 - Subject of exam with exam title
 - Start and end date
 - Along with countdown (remaining time of upcoming exam)
- PREVIOUS EXAM:** This is a section where student will be able to see the exams that they have already completed with start and end date, subject and exam title too.

Since, **Faculty recently created the Data structures and Algorithm exam** and it was not active, so on student panel its showing in upcoming section with countdown:

UPCOMING EXAM						
S.No.	Course	Subject	Exam Title	Start Date	End Date	Countdown
1.	A	A	SASASA	2021-11-27 15:00:00	2021-11-27 19:00:00	0d 13h 17m 21s
2.	BTECH	DATA STRUCTURES AND ALOGRITHMS	CT-2	2021-11-27 01:45:00	2021-11-27 02:00:00	0d 0h 2m 21s

Now, after 2 mins, this test will be live and it will be displayed in Live exam section which student needs to attempt within given allotted time as shown below:

Submission Tool

Welcome Yash

LIVE EXAM

S.No.	Course	Subject	Exam Title	Start Date	End Date	Action
1.	BTECH	SOFT COMPUTING	TEST	2021-11-26 22:00:00	2021-11-27 16:55:00	ATTEMPT
2.	BTECH	SOFT COMPUTING	TEST	2021-11-26 22:00:00	2021-11-27 16:55:00	ATTEMPTED
3.	BTECH	SOFT COMPUTING	TAST 2	2021-11-26 23:57:00	2021-11-27 22:00:00	ATTEMPT
4.	BTECH	DATA STRUCTURES AND ALOGRITHMS	CT-2	2021-11-27 01:45:00	2021-11-27 02:00:00	ATTEMPT

UPCOMING EXAM

S.No.	Course	Subject	Exam Title	Start Date	End Date	Countdown
1.	A	A	SASASA	2021-11-27 15:00:00	2021-11-27 19:00:00	0d 13h 13m 44s

PREVIOUS EXAM

S.No.	Course	Subject	Exam Title	Start Date	End Date
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We can see the Data structures test have moved to Live exam session and the time limit is only of 15 mins and from upcoming exam this test is removed.

Now, when student will attempt this test it will open the test like this with countdown i.e. time left to attempt the test as shown below:

The screenshot shows a web interface for a submission tool. At the top, there is a blue header bar with the text "Submission Tool". Below this, the main content area has a light blue header with the word "EXAM". The main title is "BTECH - DATA STRUCTURES AND ALGORITHMS" with a subtitle "CT-2". In the top right corner, a red countdown timer displays "0d 0h 9m 45s". Below the title, there is a "Note:-" section with two bullet points: "All * marked questions are mandatory." and "After completing click on submit button." The first question is a multiple-choice question: "1.) Which type of data structure Array is?". It has four options: "1) Linear Data structure", "2) Non-linear data structure", "3) Hierarchical data structure", and "4) Network model data structure". The second question is a text-based question: "2.) _____ means organization of data." with a text input field labeled "Write your answer". At the bottom right of the question area, there is a blue "SUBMIT" button.

Its showing that students needs to submit this test within 9 mins only and form is displayed as it is created by faculty.

When we need **submit the test** and this pop up will be displayed for security:

This screenshot shows the same exam interface as the previous one, but with a confirmation pop-up dialog displayed in the center. The dialog has a white background and a grey border. It features a large orange exclamation mark icon at the top. Below the icon, the text "Are you sure?" is displayed in bold. Underneath, it says "You Want To Submit!". At the bottom of the dialog, there are two buttons: a grey "Cancel" button and a blue "Yes" button. The background of the exam interface is dimmed, showing the same questions and timer as before.

After confirming sure on pop up box, it displays form has been submitted:

The screenshot shows the 'Submission Tool' interface with a 'Welcome Yash' message. A central pop-up box displays a green checkmark and the text 'Done! The form has been submit.' with an 'OK' button. The background is dimmed, showing three sections: 'LIVE EXAM', 'UPCOMING EXAM', and 'PREVIOUS EXAM'. The 'LIVE EXAM' table lists four exams, with the last one, 'CT-2', marked as 'ATTEMPTED'.

S.No.	Course	Subject	Exam Title	Start Date	End Date	Action
1.	BTECH	SOFT COMPUTING	TEST	2021-11-26 22:00:00	2021-11-27 16:55:00	ATTEMPT
2.	BTECH	SOFT COMPUTING	TEST	2021-11-26 22:00:00	2021-11-27 16:55:00	ATTEMPTED
3.	BTECH	SOFT COMPUTING	TAST 2	2021-11-26 23:57:00	2021-11-27 22:00:00	ATTEMPT
4.	BTECH	DATA STRUCTURES AND ALGORITHMS	CT-2	2021-11-27 01:45:00	2021-11-27 02:00:00	ATTEMPTED

Student will be able to see that yes they have **attempted this test**:

This screenshot shows the 'Submission Tool' interface with the 'LIVE EXAM' table. A blue arrow points to the 'ATTEMPTED' status of the fourth exam, 'CT-2'.

S.No.	Course	Subject	Exam Title	Start Date	End Date	Action
1.	BTECH	SOFT COMPUTING	TEST	2021-11-26 22:00:00	2021-11-27 16:55:00	ATTEMPT
2.	BTECH	SOFT COMPUTING	TEST	2021-11-26 22:00:00	2021-11-27 16:55:00	ATTEMPTED
3.	BTECH	SOFT COMPUTING	TAST 2	2021-11-26 23:57:00	2021-11-27 22:00:00	ATTEMPT
4.	BTECH	DATA STRUCTURES AND ALGORITHMS	CT-2	2021-11-27 01:45:00	2021-11-27 02:00:00	ATTEMPTED

Student can logout their account too:

The screenshot shows the 'Submission Tool' interface with the 'Welcome Yash' message. In the top right corner, there is a user profile icon and a 'LOGOUT' button, which is highlighted by a blue arrow.

S.No.	Course	Subject	Exam Title	Start Date	End Date	Action
1.	BTECH	SOFT COMPUTING	TEST	2021-11-26 22:00:00	2021-11-27 16:55:00	ATTEMPT
2.	BTECH	SOFT COMPUTING	TEST	2021-11-26 22:00:00	2021-11-27 16:55:00	ATTEMPTED
3.	BTECH	SOFT COMPUTING	TAST 2	2021-11-26 23:57:00	2021-11-27 22:00:00	ATTEMPT
4.	BTECH	DATA STRUCTURES AND ALGORITHMS	CT-2	2021-11-27 01:45:00	2021-11-27 02:00:00	ATTEMPTED

S.No.	Course	Subject	Exam Title	Start Date	End Date	Countdown
1.	A	A	SASAGA	2021-11-27 15:00:00	2021-11-27 19:00:00	0d 13h 2m 54s

Now, back to faculty panel

Since, this exam was live so this will be removed from previous section of the faculty see below: **There is no DATA STRUCTURES AND ALGORITHM PAPER which faculty can update or delete as it was made live.**

Submission Tool

FORM

COUSER

Course

SUBJECT

Subject

START DATE

Start Date

END DATE

End Date

START TIME

Start Time

END TIME

End Time

EXAM TITLE

Submit

View Previous

PREVIOUS FORMS

Sno.	Course	Subject	Exam Title	Start Time	End Time	Edit	Delete Survey
1	A	A	SASASA	2021-11-27 15:00:00	2021-11-27 19:00:00	<div>view</div>	<div>delete</div>

10

25

50

100

250

500


Now, since student have submitted the test, faculty will be able to see the answers and can start their evaluation,

Faculty will **click on evaluate exam**:


Submission Tool

Welcome

LINKS



CREATE EXAM



EVALUATE EXAM

CALENDAR

November 2021

SUN	MON	TUE	WED	THU	FRI	SAT
24	25	01	02	03	04	05
26	07	08	09	10	11	12
27	14	15	16	17	18	19
28	20	21	22	23	24	25
29	26	27	28	29	30	01
30	02	03	04	05	06	07

Now, after clicking all the papers which are finished and submitted will be displayed here for evaluation:

Like data structures and algorithm time limit is finished and attempted by student, hence evaluation can be done:

Submission Tool

EXAMS

Sno.	Course	Subject	Exam Title	Start Exam	End Exam	View Form
1	BTECH	DATA STRUCTURES AND ALGORITHMS	CT-2	2021-11-27 01:45:00	2021-11-27 02:00:00	EVALUATE

10 25 50 100 250 500

After **clicking on evaluate button**, faculty will be able to see which student is present or absent:

Submission Tool

DATA STRUCTURES AND ALGORITHMS - CT-2

S.No.	Student Id	Student Name	Username	Mobile	Action
1.	1001	Yash	yash123	8791677889	VIEW
2.	1002	Harsh	harsh123	8777889999	ABSENT
3.	1003	Arjun	arjun123	9786756432	ABSENT

EXAMS

Sno.	Course	Subject	Exam Title	Start Exam	End Exam	View Form
1	BTECH	DATA STRUCTURES AND ALGORITHMS	CT-2	2021-11-27 01:45:00	2021-11-27 02:00:00	EVALUATE

10 25 50 100 250 500

Since, “yash” gave the paper so faculty can evaluate his paper by clicking on **View** option:

Faculty is able to see the answers filled up by the student “yash”:

Submission Tool

Print Form

DATA STRUCTURES AND ALGORITHMS - CT-2

1.) Which type of data structure Array is?

☒ 1) Linear Data structure ☐ 2) Non-linear data structure

☐ 3) Hierarchical data structure ☐ 4) Network model data structure

2.) _____ means organization of data.

Data Structure

Close

Now faculty will close the form and completed with its evaluation:

And on student panel, student will be able to see this **Data structures and algorithm exam in its previous section** as its deadline is finished:

Submission Tool

Welcome Yash

LIVE EXAM

S.No.	Course	Subject	Exam Title	Start Date	End Date	Action
1.	BTECH	SOFT COMPUTING	TEST	2021-11-26 22:00:00	2021-11-27 16:55:00	ATTEMPT
2.	BTECH	SOFT COMPUTING	TEST	2021-11-26 22:00:00	2021-11-27 16:55:00	ATTEMPTED
3.	BTECH	SOFT COMPUTING	TAST 2	2021-11-26 23:57:00	2021-11-27 22:00:00	ATTEMPT

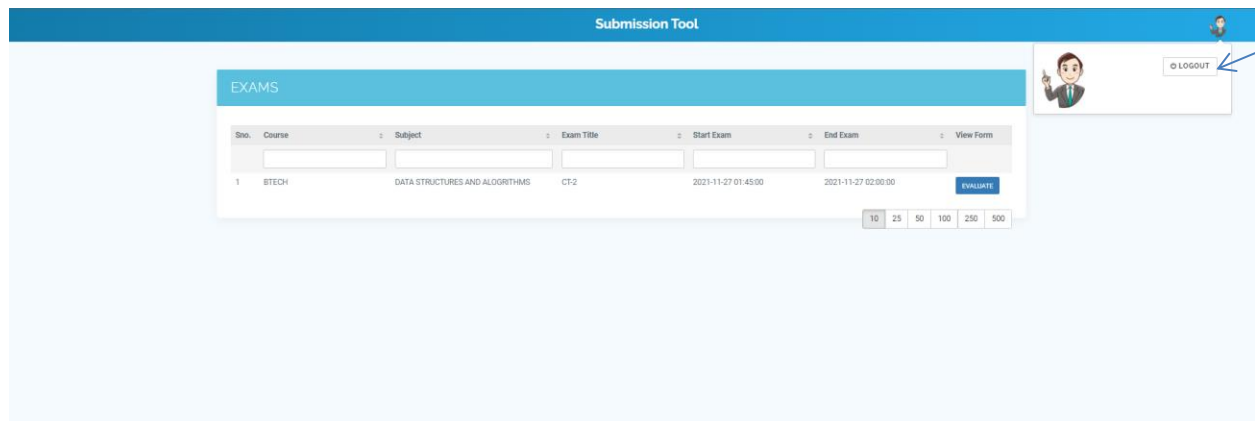
UPCOMMING EXAM

S.No.	Course	Subject	Exam Title	Start Date	End Date	Countdown
1.	A	A	SASASA	2021-11-27 15:00:00	2021-11-27 19:00:00	0d 12h 50m 45s

PREVIOUS EXAM

S.No.	Course	Subject	Exam Title	Start Date	End Date
1.	BTECH	DATA STRUCTURES AND ALGORITHMS	CT-2	2021-11-27 01:45:00	2021-11-27 02:00:00

Now, after evaluation **faculty can logout** easily:



In this way faculty can create and evaluate the test easily without using pen-paper.

Features faculty have:

1. Can delete, update existing question paper which is not active yet.
2. Can create a new question paper many times
3. Can evaluate any numbers of answer sheets submitted by student
4. Can check who is absent or present in the exam
5. Faculty can logout successfully.

Features Student have:

1. Can view different subjects test available in their account
2. Can change password if forgotten
3. Can view what all exams they have given and what all are scheduled in future.
4. With a given time limit they can bound themselves to submit the exam.
5. Student can logout successfully.

Data security:

- Only admin have the authority to change the data.
- There is no chance of leak of question papers as in traditional examination system.
- Only admin can create, update, add, delete the questions of the examination.
- The answering process begins with the student and all the database is hidden from the student.
- Only one attempt is allowed to each student and also auto save option is there.

Technologies used:

Front End: AngularJs

Back End: Django Framework

Database: MySQL

Future Add on's:

- Faculty can create different sets of question papers.
- Faculty can evaluate the answers digitally only by marking answer right or wrong online itself.
- Students can see their scored marks just after their test gets finished.
- Student can mark a particular question flag also which can be solved later within duration of test.

INSTALLATION PROCESS

- **Live Project Link:** https://samyak3009.github.io/frontend-live/#/home_page
- **Live Backend Address Link:** <https://microsoftback.herokuapp.com/>
- **Clone Repository:** <https://github.com/samyak3009/ExamPortal>

Frontend installation:

1. Move to frontend directory (cd frontend).
2. Install gulp, make sure you have gulp installed globally (npm install -g gulp)
3. Run gulp serve
4. Node version must be 10.

Making requests to the backend API:

For convenience, we have a live API server running at <https://microsoftback.herokuapp.com/> for the application to make requests against. The source code for the backend server (available for Django) can be found in the backend directory.

If you want to change the API URL to a local server, simply edit `src/app/components/services/BaseUrl.js` and change `api` to the local server's Django Api.

Note: **bower_components** and **node_modules** are the dependencies file not the we pushed it on the repo for the easier installation for you.

Backend installation :

1. Move to backend directory (cd backend).
2. Run the environment (.\env\Scripts\activate) command to run env for window.
3. In this environment all the dependencies are fulfilled which are mentioned in the requirement.txt file.
4. Python should be installed in the system globally python version – 3.9.0
5. The Database used here is the remote MySQL data base so their no need to install the database.
6. If wants to create a local database then install the MySQL database or install Xampp for windows then connect it to backend app by simply editing the `backend/setting.py` file and after run `python manage.py makemigrations` & `python manage.py migrate`, note that if you are not using local database them no need to run these commands.
7. Run `python manage.py runserver 8000`.
8. The server will get started and gives you the address (e.g: <http://127.0.0.1:8000>). You can simply update it on frontend `src/app/components/services/BaseUrl.js` file if you want to connect it to local server.
9. Again, go the frontend directory and again Run gulp serve.
10. You will get redirected to the homepage for the app Automatically.