User Guide for Peer Evaluation

1. Introduction

- **Overview: -** The Peer Evaluation System is a versatile solution designed to simplify the peer assessment process in both academic and professional settings. It empowers teachers, TAs, and students to efficiently upload, distribute, evaluate, and analyze assessments. By automating essential tasks such as forming peer groups, distributing evaluation sheets, and calculating scores, the system ensures accuracy, fairness, and transparency throughout the evaluation process.

- **Features: -** The some of the important features are -
    - ➢ Group formation - It automatically groups the students based on a Unique Id assigned to them.
    - ➢ File Renaming - The files are automatically renamed based on the Unique Id extracted from the top left corner of the Answer sheets.
    - ➢ Sheet Distribution - The answer sheets are distributed for evaluation ensuring that students do not receive their own sheets for the evaluation.
    - ➢ Statistical Analysis - Generate the charts for the average marks and standard deviation of each test/quiz.

- **System Requirements: -**
    - ➢ Hardware - Processor with Dual-core (Intel i5 or above); RAM 8 GB minimum recommended; Storage of at least 500 MB.
    - ➢ Software - OS Windows 10 or 11 or macOS 10.14 or later; Python 3.7 or above with pandas, numpy, streamlit; a latest version of Google Chrome or any browser recommended.

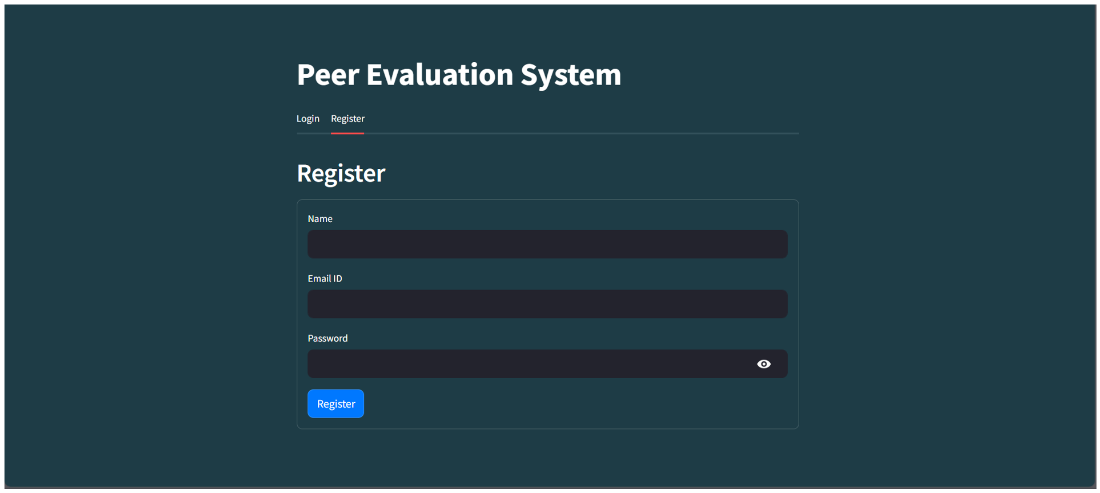
2. Getting Started

- **Accessing the Interface: -** To begin, navigate to the Peer Evaluation System's login page. Enter your registered email address and password to access your account. If you encounter any issues, please contact the administrator.
- **Creating an Account: -** For new users, click on the "Register" button on the login page. Provide the required details, such as your name, email address, and a secure password. If the email is valid you will receive an OTP on your email Id, use that to verify your email address and complete the registration process.

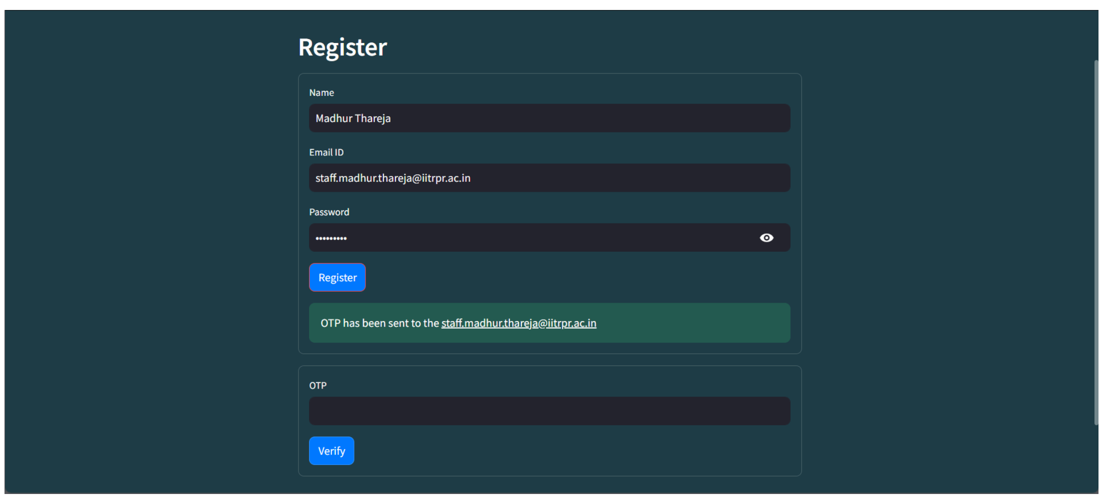
3. User Interface Overview

- **Dashboard Layout: -**

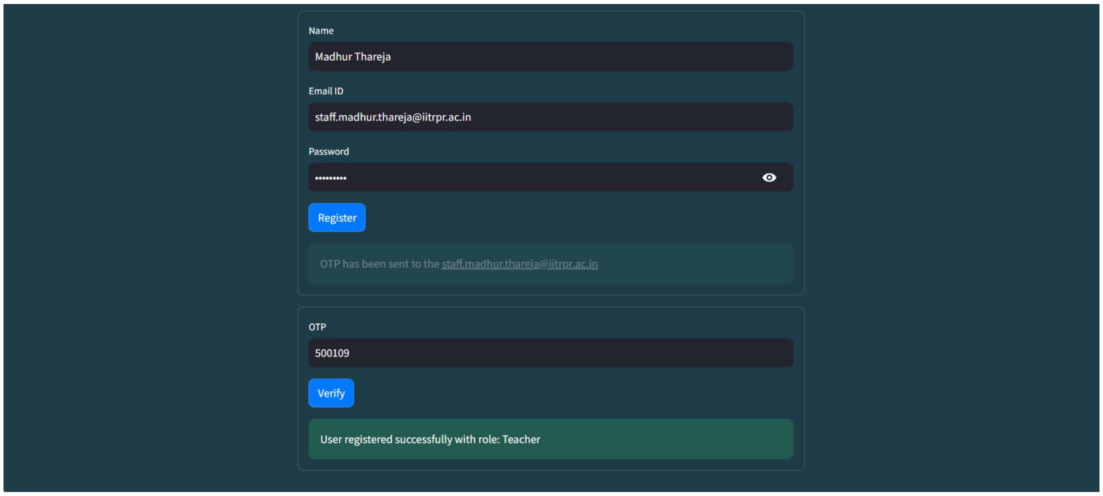
   A. The user interface consists of the Login/Registration window which has the layout like below: -



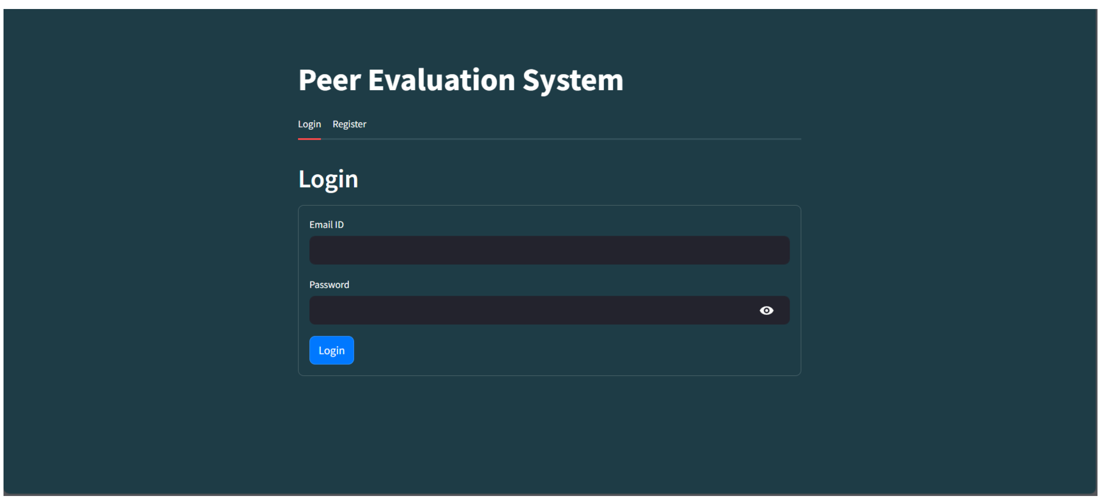
The registration window takes Name, Email ID and Password as input and sends an OTP if the Email Id is valid.



After successfully sending the OTP on Email Id, the user will get the above section to fill the OTP for the final verification and completing the registration process.



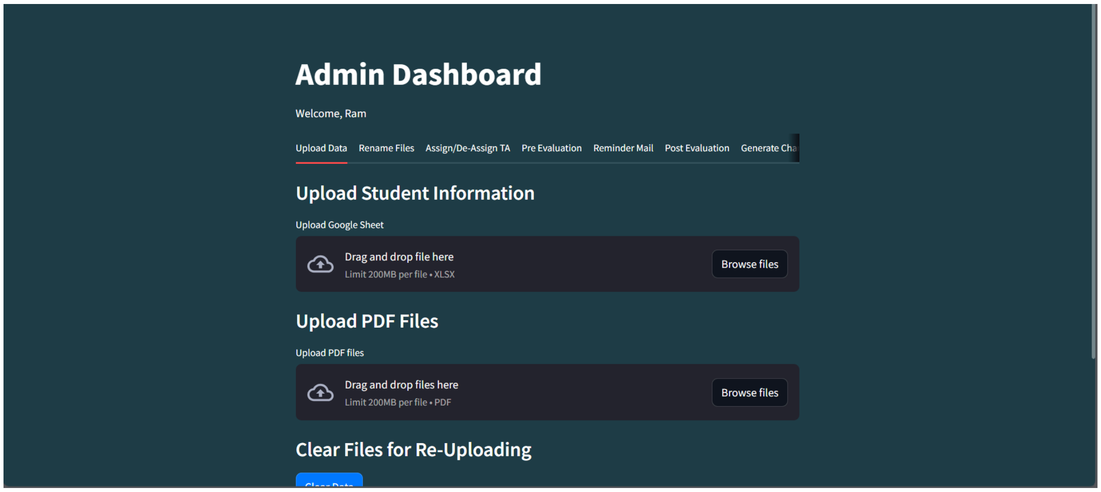
The following message will be displayed on the successful registration of a new user.



After a successful registration a user can login using the Login window and access the various functionality according to their role.

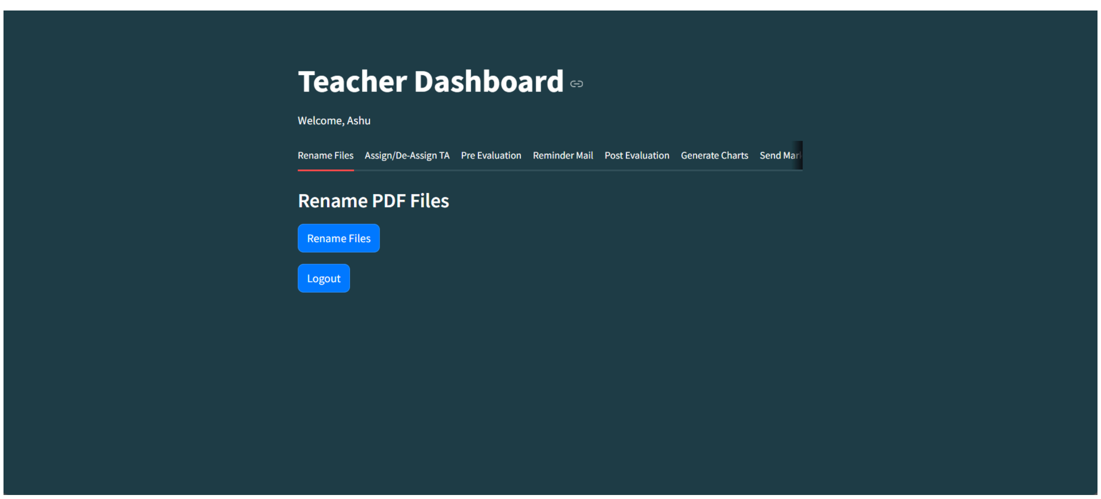
B. The interface has multiple dashboards that are assigned according to the assigned role: -

Admin dashboard -



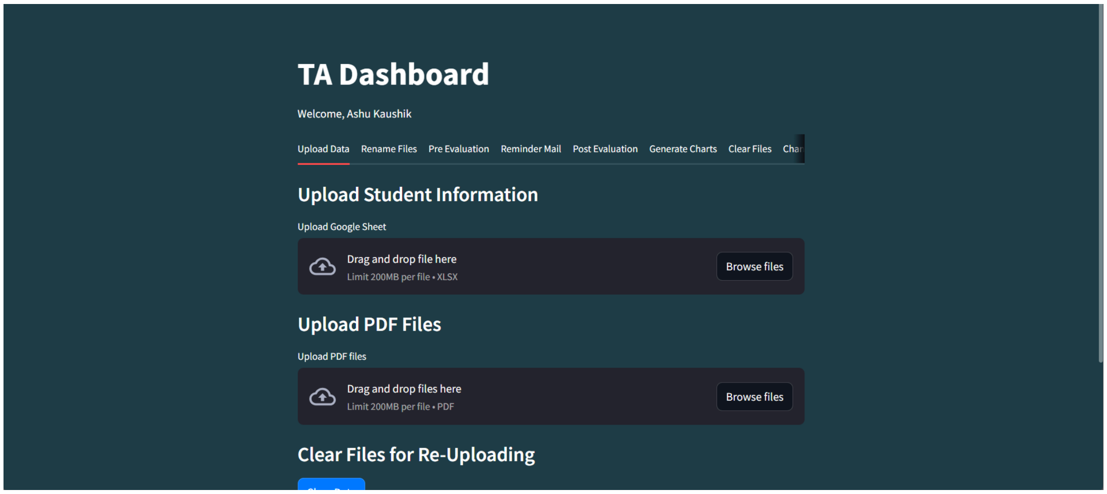
The Admin dashboard has multiple functionalities as they are visible in the above image and it is the dashboard that has all the functionalities of the teacher and TA dashboard.

Teacher dashboard -



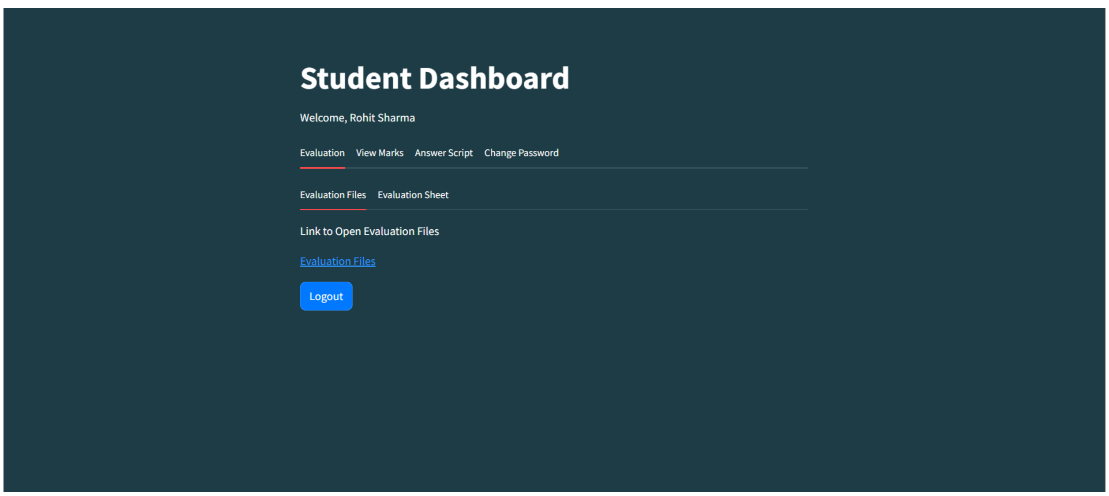
The teacher dashboard has optimal functionality as we have distributed their work to the TA's and they will be performing the work that is not much important for the teacher's to do like Uploading the scanned answer sheets, etc.

TA dashboard -



The TA dashboard has multiple functionality except that they do not have the authority to release the marks for the Quiz/Test.

Student dashboard -



The Student dashboard has the above following options where they can evaluate the files, view their marks and download their answer sheet for the current exam.

- **Navigation: -** Use the horizontal accordion for the navigation between the different functionality available on the dashboards. The navigation is made easy using the accordion so that the user is able to find all the functionalities in the single row on the dashboard.

- **Key Components: -**
  Menus - They are available on the horizontal accordion and the users can use these dropdown options for the functionality like file upload, deleting the data, renaming files, etc.

Buttons - We have buttons as the main interaction point as all calculations and computations are done on the backend that is in the app script and this is done to reduce the time and offline computations.

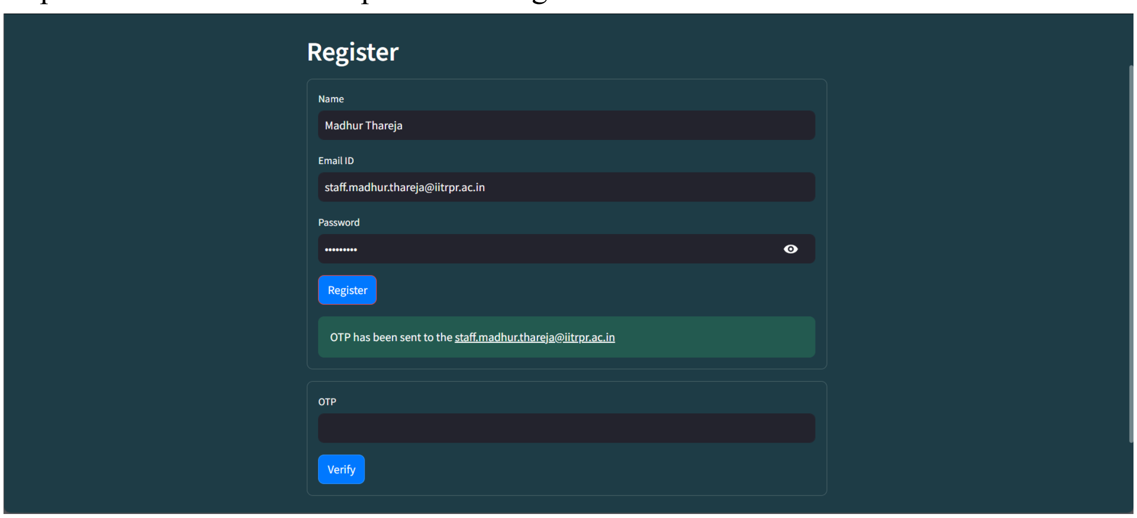
4. Step-by-Step Instructions

- **Registration & Login process: -**
  For the registration window we have three fields that are Name, Email Id and Password. Once the fields are filled and we press the Register button, if the email id is valid the user will get the OTP through the email id and they can enter the one time password in the OTP field to verify their registration.

  Note: - The password must be 8 characters long with a capital letter, small letter, a numerical digit and a special character out of the following characters " **@$!%*?&** ".

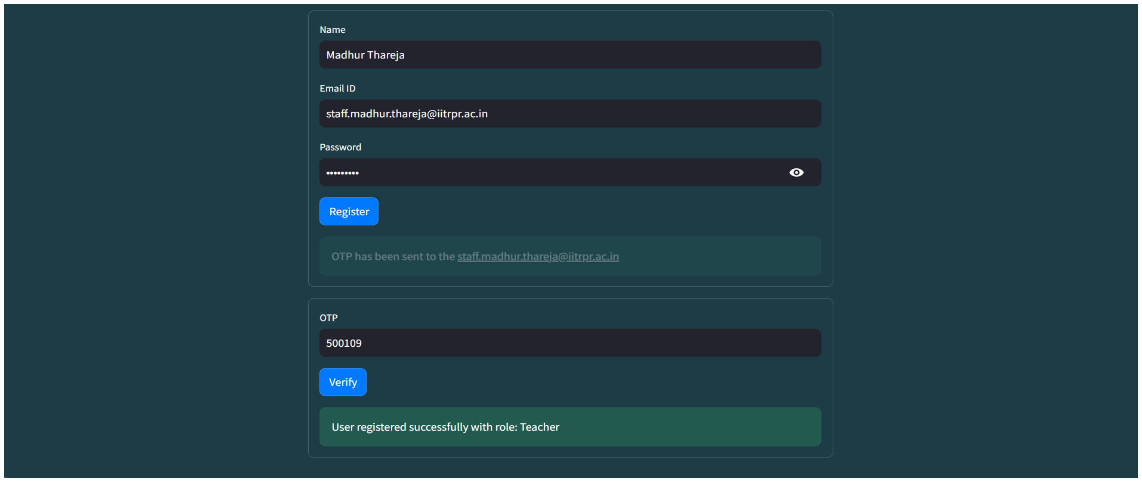
  The below are the steps to do the new user registration: -

  Step 1: - Fill the details and press the "Register" button.



  In the above window the OTP section of the form will be visible only if the OTP is sent successfully and then we can fill the OTP.

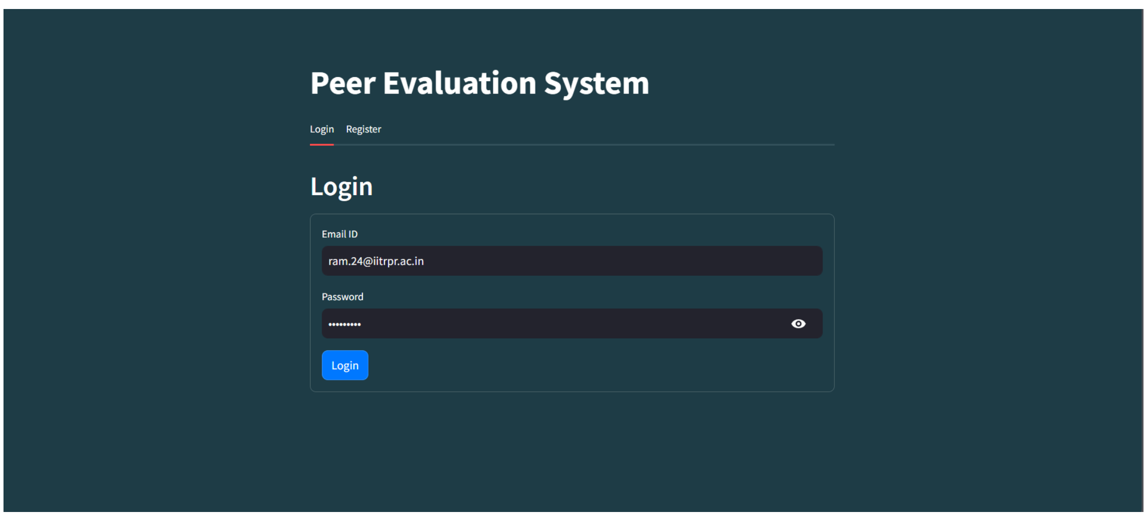
Step 2: - Check the email for the one time password (Spam also) and fill the one time password in the OTP field and press the “Verify” button.



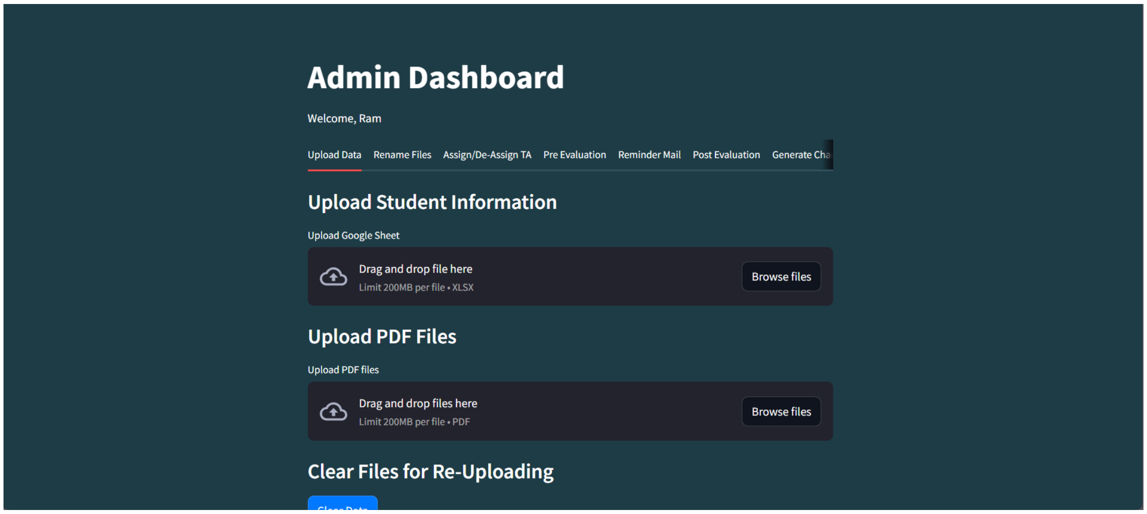
After the above successful registration we can navigate to the Login page and can do the Login and we will get the dashboard as per the role which is assigned based on the email id.

Step 3: - Logging in to the portal.

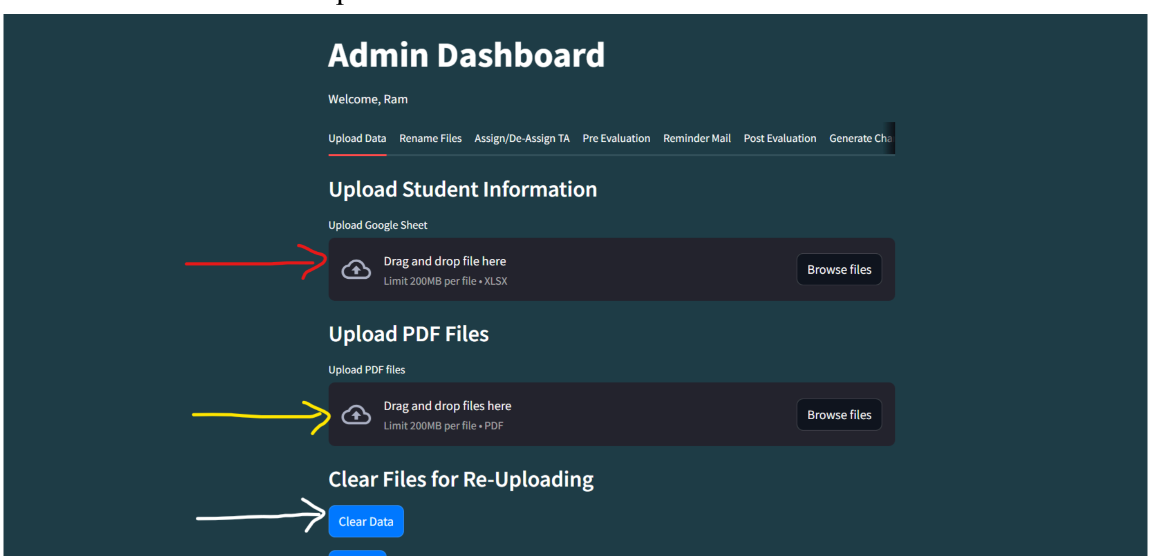
Enter the details on to the portal as shown:



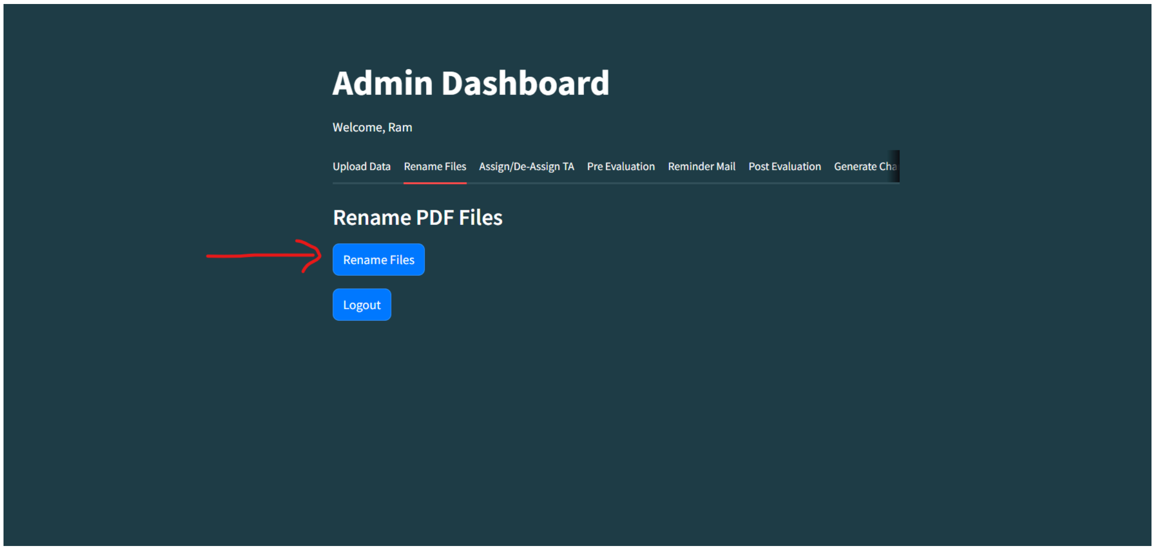
After the successful login we will be able to see the dashboard as per the role, here the Admin dashboard will be visible to us as we have logged in as the Admin.



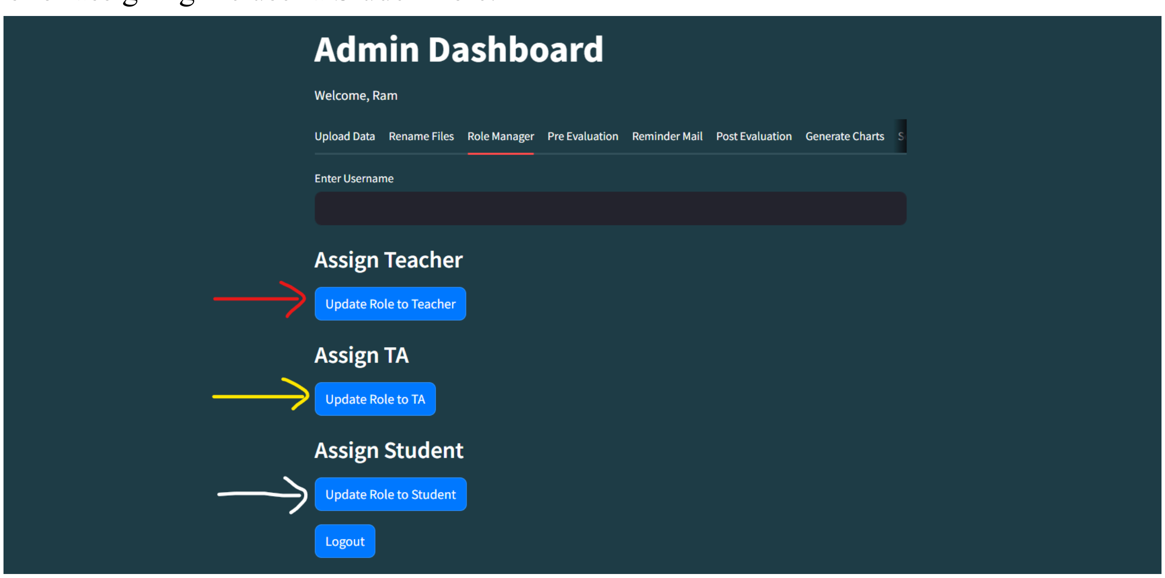
- **File Upload process: -**
  1. Use the "Upload Student Information" uploader depicted with red arrow, for uploading the sheet consisting of the mapped email id with the unique id.
  2. Use the "Upload PDF Files" uploader depicted with yellow arrow, for uploading the scanned answer sheets.
  3. Use the "Clear Data" button depicted with white arrow for deleting all files in case of an error or problem.



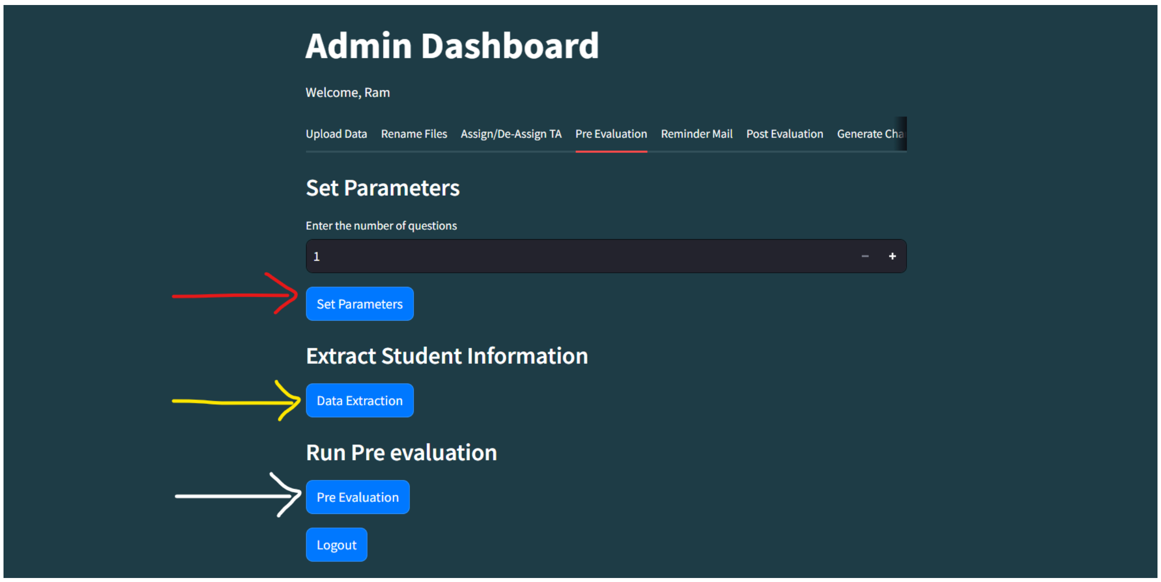
- **Rename Files process: -**
  After uploading the files successfully, now we are ready to rename the uploaded files (can be done using the "Rename Files" button depicted with red arrow) according to the assigned unique id which is present in the top left corner of the pdf files which we are extracting using the OCR technique.



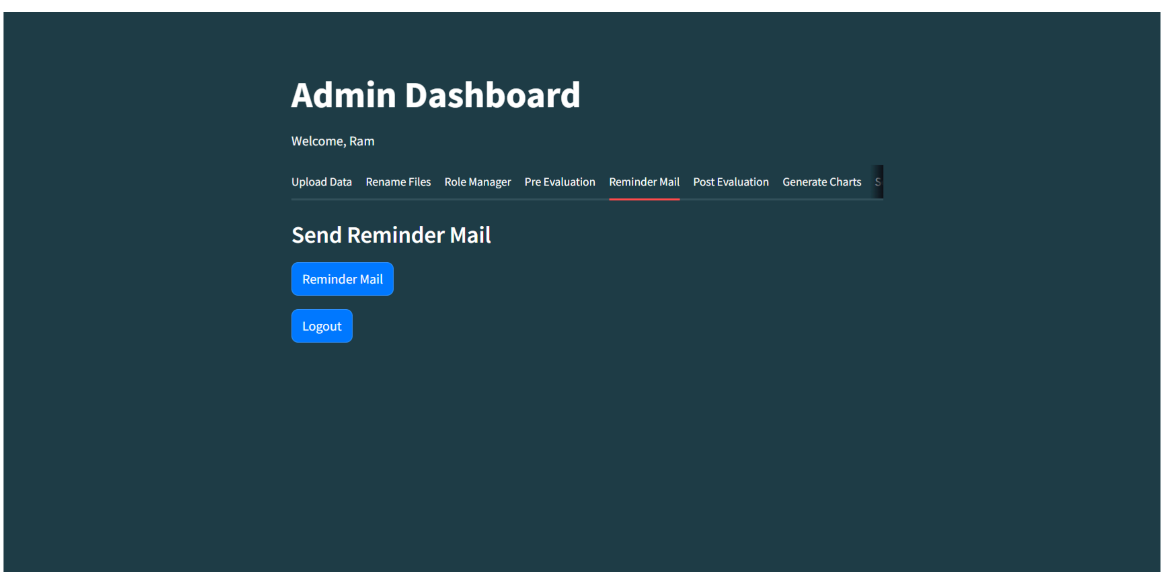
- **Role Manager window: -**
  If Admin or a teacher wants to assign a user a different role than they can use the below window. After entering the username the teacher can use the button as per the requirement and can assign a student to/from the TA duty. Also if we want to make any Teacher a student due to any reason we can do it from the Admin's I'd. The button depicted with the red arrow helps to assign the "Teacher" role and the button depicted with the yellow arrow is to assign the TA role. The button depicted with the white arrow is for assigning the user a Student role.



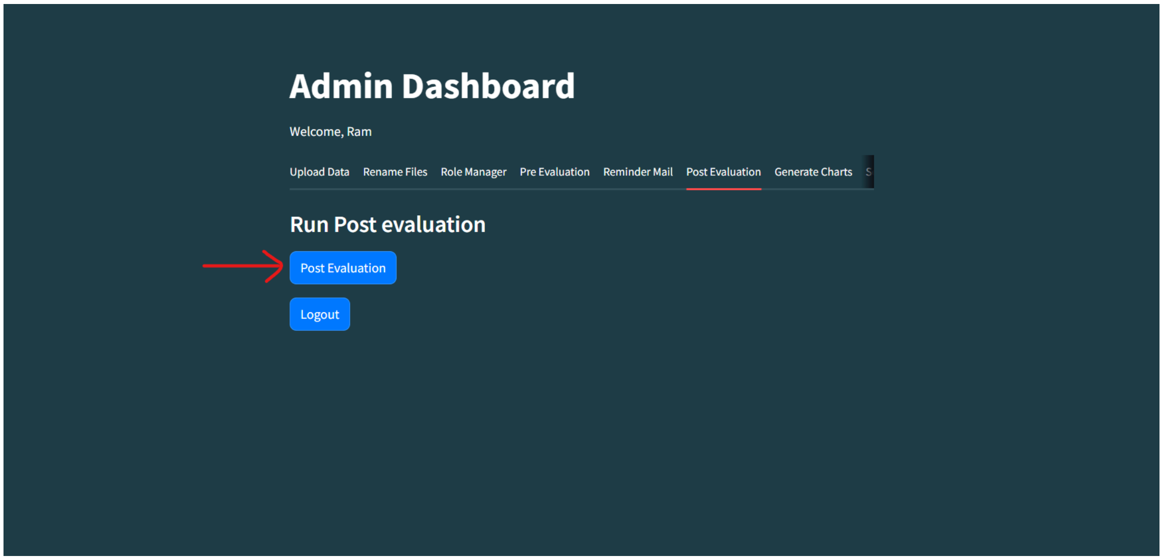
- **Pre Evaluation window: -**
  The Set Parameter section which has the field for the number of questions and a "Set Parameters" button (depicted with red arrow) will help the user to set the number of questions that are there in the current quiz/test.
  The "Data Extraction" button (depicted with yellow arrow) will extract all the information of the students from the uploaded sheet to the main processing sheet and will clear the uploaded sheet from the folder to optimize the space.
  The "Pre Evaluation" button (depicted with white arrow) will assign all the data to the student to evaluate and they will be able to see the sheets that they are going to evaluate.



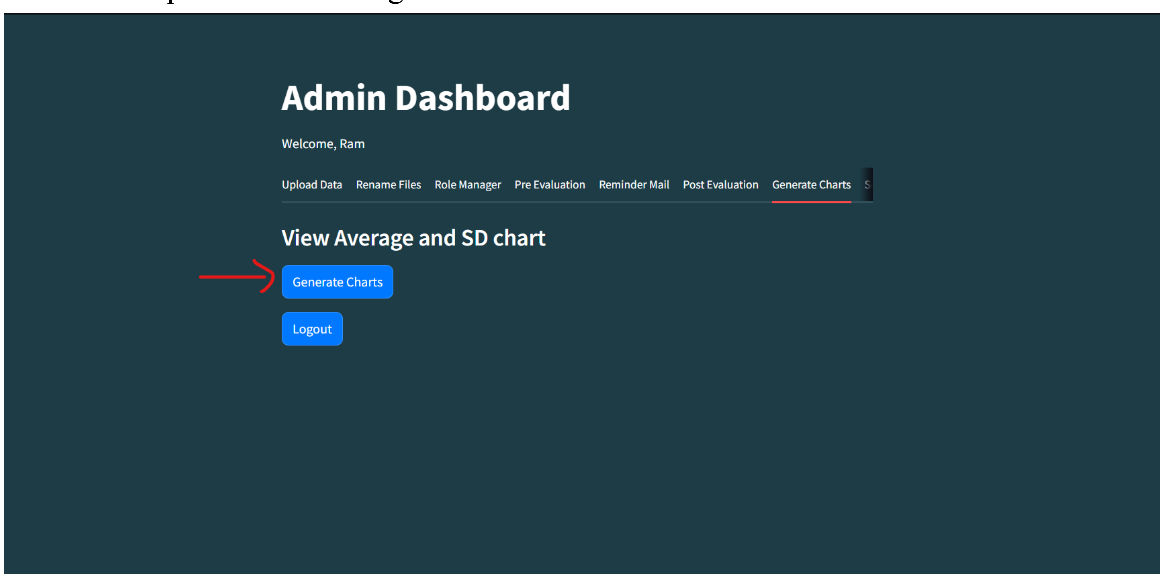
- **Reminder Mail window: -**
  The "Reminder Mail" button will help the Teacher and TA to send a reminder to all those students who haven't done the evaluation till now.

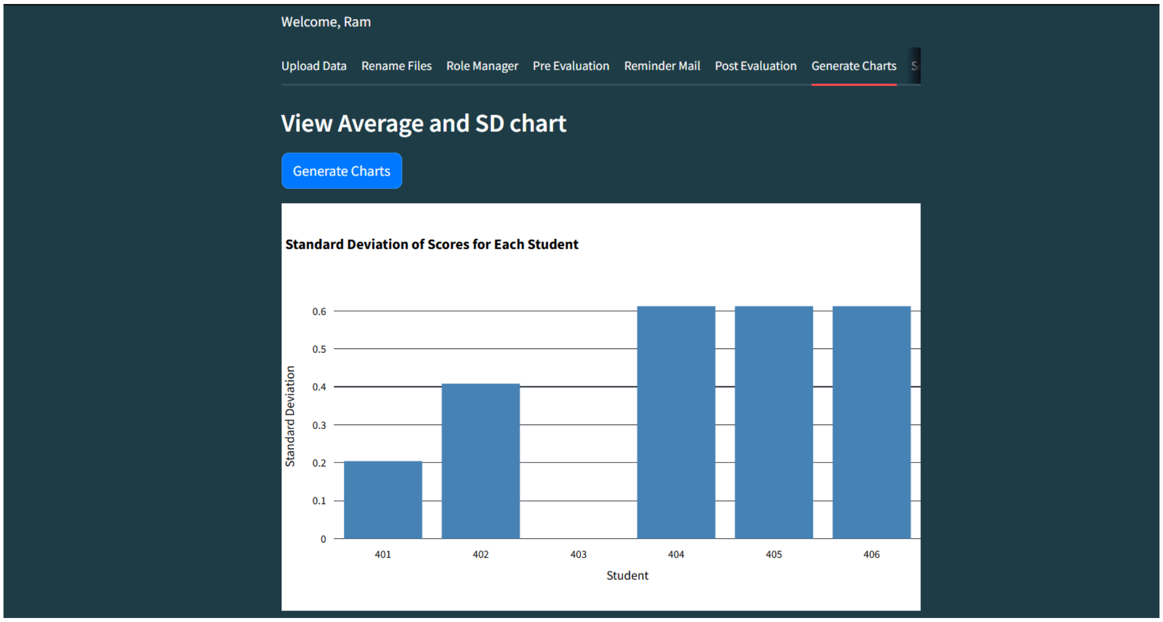


- **Post Evaluation window: -**
  The "Post Evaluation" button depicted with a red arrow helps Teachers and TA's to consolidate the marks of the student at one place and this helps further in releasing of the marks.

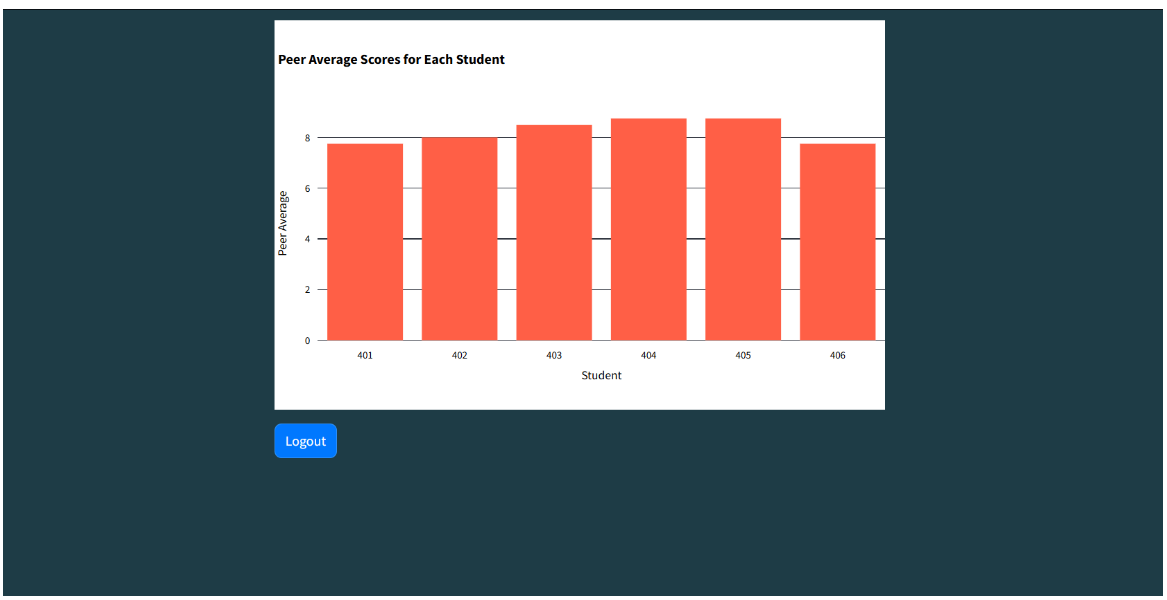


- **Generate Charts window: -**
  The "Generate Charts" button depicted with a red arrow helps Teachers and TA's to visualise the plots of the average marks and standard deviation of the students.



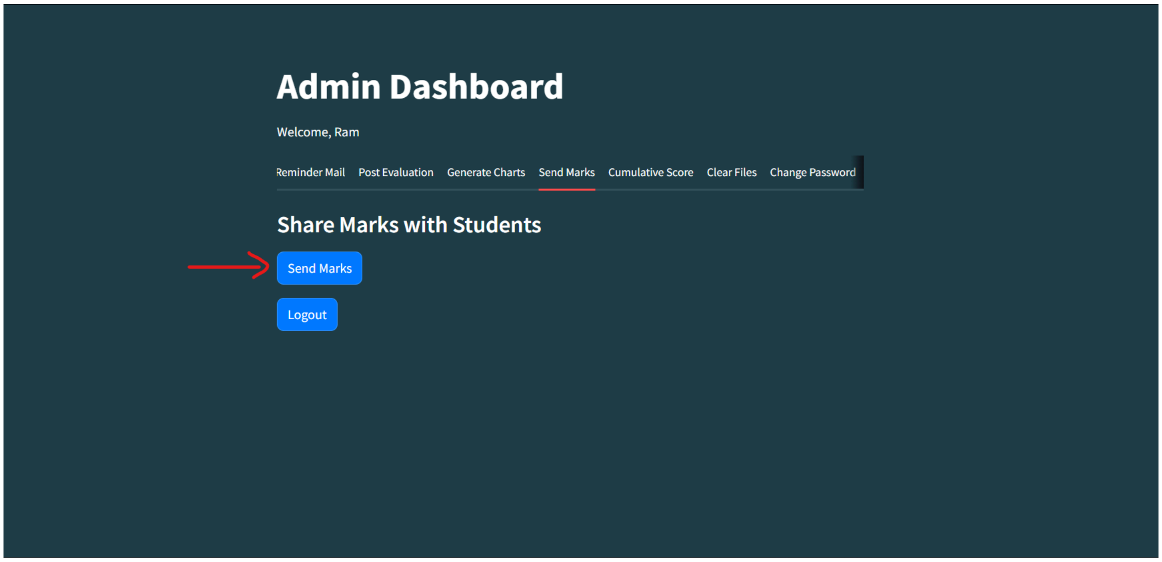


The above plot shows the standard deviation of each student. We can use the above plot for visualizing the standard deviation of average marks among all students.

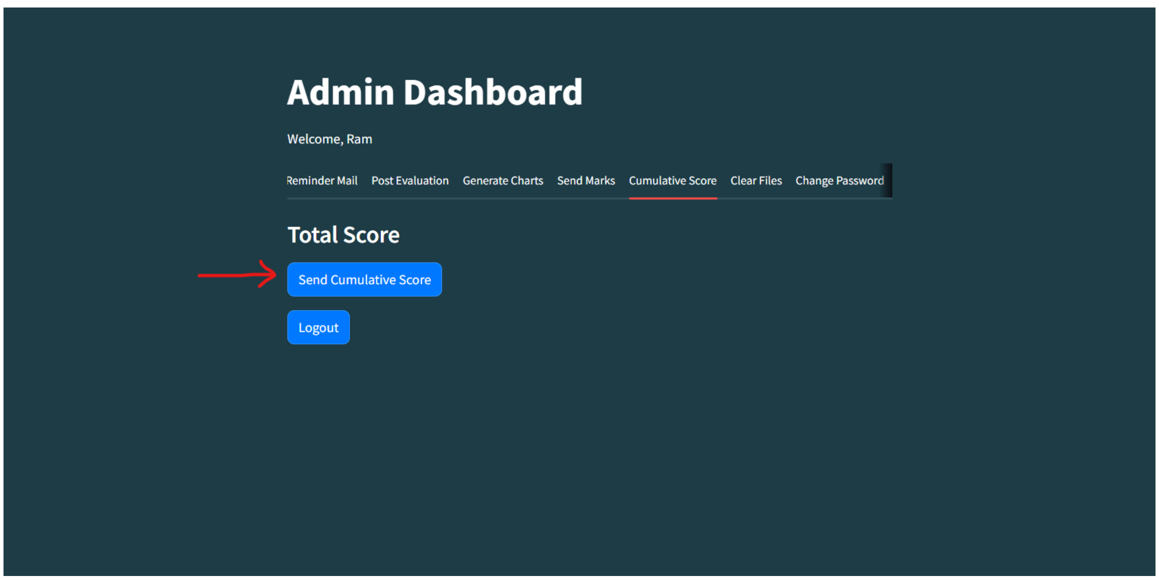


The above plot shows the average marks of each student. We can use the above plot for visualizing the average marks of each student and we can see how the students are performing in the class.

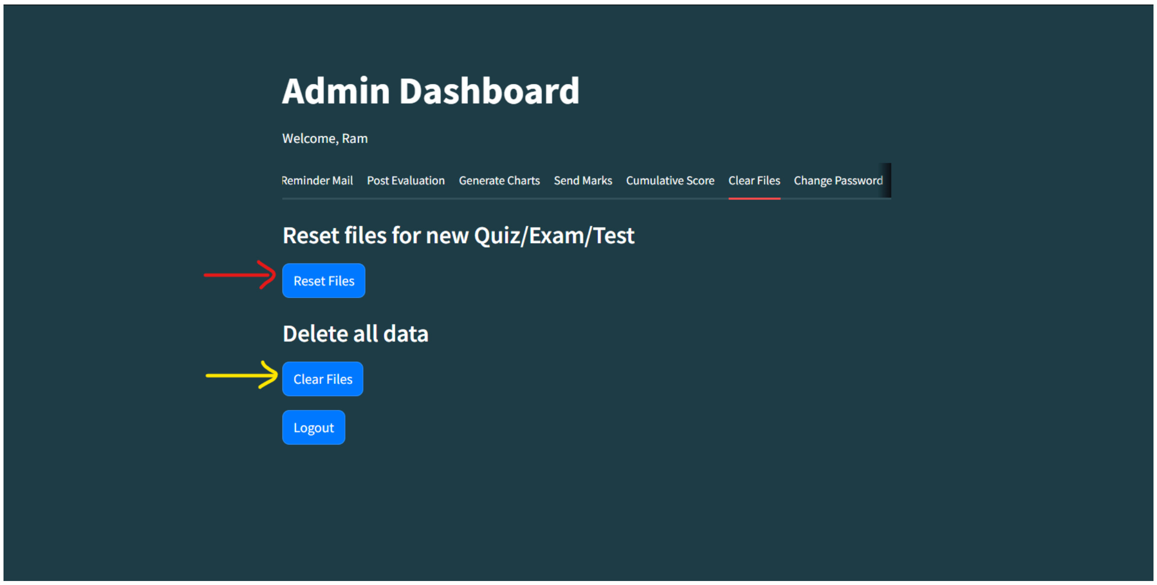
- **Send Marks window: -**
  The "Send Marks" button depicted with a red arrow helps Teachers and TA's to release the Quiz/Test marks to the students.



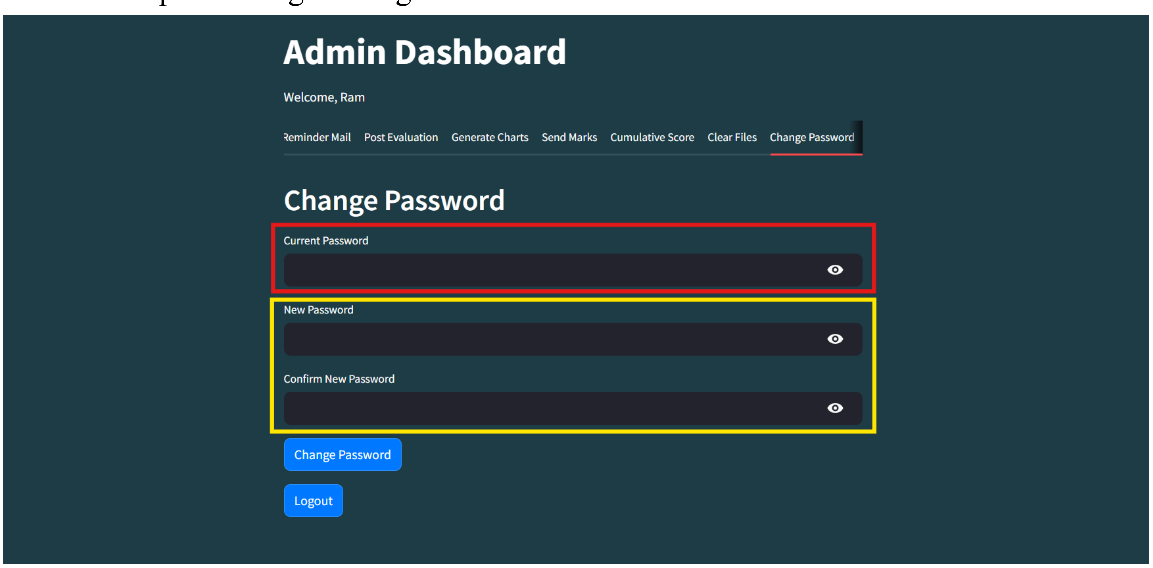
- **Cumulative Score window: -**
  The "Send Cumulative Score" button depicted with a red arrow will help the Teachers and TA's to send the total marks of the students scored in the subject. (We assume that the scaling is done explicitly).



- **Clear Files window: -**
  The “Reset Files” button depicted with a red arrow will help the Teachers and TA’s to clear the files/backend data. This is provided as a precautionary measure and the script is already handling the clearing of the files.
  The “Clear Files” button depicted with a yellow arrow will help the Teachers and TA’s to clear all data including the sheets which is serving as the backend for our system. It is serving as the reboot to our evaluation system.



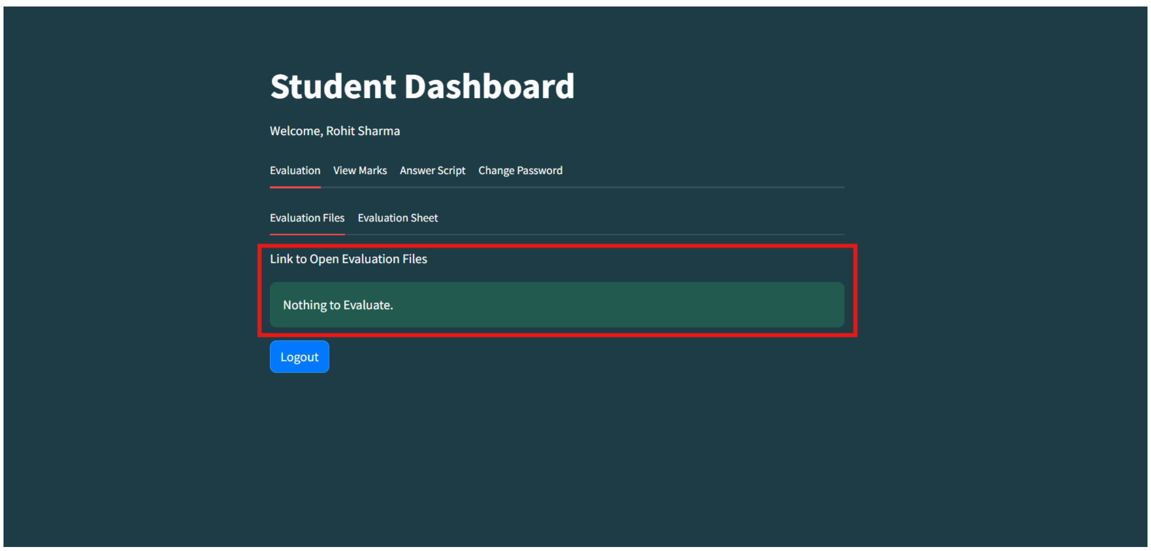
- **Change Password window: -**
  The “Change Password” functionality has three input fields, the first field depicted with red box takes the current password of the user and the other two fields depicted with yellow box are taking the new password and confirmation for the new password, if both matches the password get changed in the server.



The above whole step by step guide is similar for the Admin, Teacher and TA dashboard. For depiction the Admin dashboard is used because it has all the functionalities from all the three dashboards. The other two dashboards have limited functionality according to the roles. For example the Upload file option is not provided to the teacher because the TA's will do that for them and the functionality like Role Manager is not given to the TA's because we want that only Teacher or Admin can do changes to the roles of the user's. The Admin has the access to make somebody as the Teacher (if we want to make somebody as a teacher who is not entitled to be the teacher for the course), because this is a very crucial role we are not giving it's control to the Teacher's even.

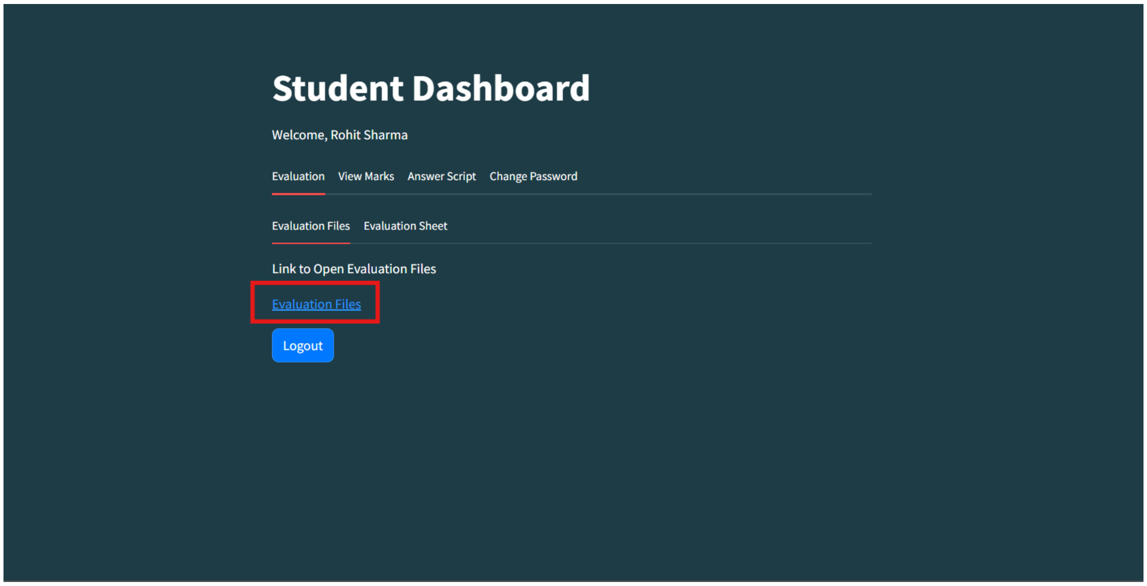
- **Student dashboard (Evaluation) window: -**

  The student dashboard will give the below message if there is nothing to evaluate for a student. The message for the "Evaluation Files" window is depicted with the red box for clarity. Also, the message for the "Evaluation Sheet" window would be the same.

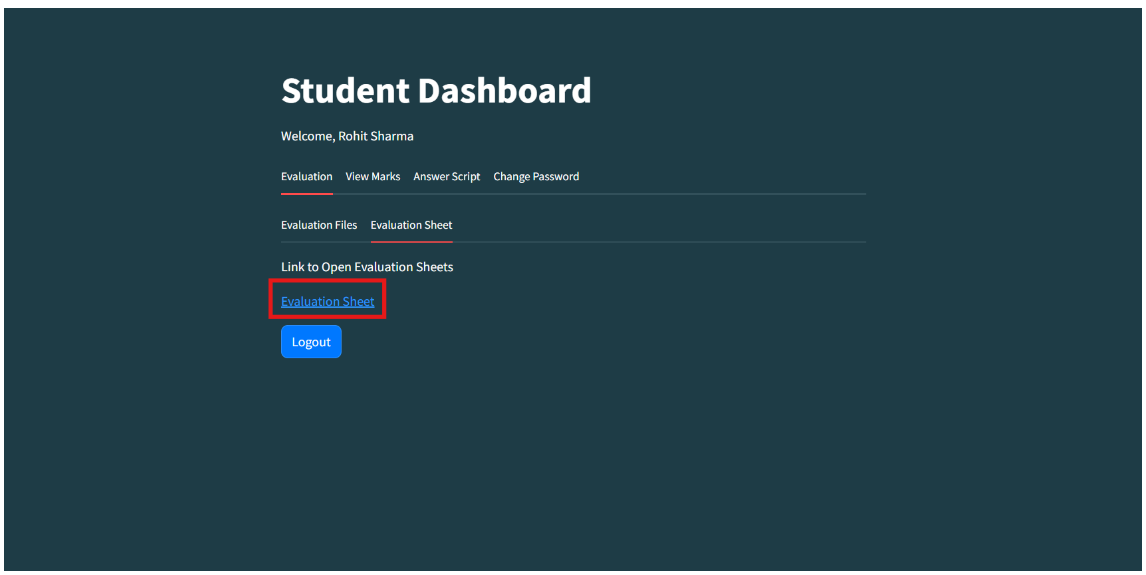


If there is something to evaluate for the student then they will get the link under the "Evaluation Files" section and when they click the link, a google drive folder will appear in a new tab of the browser and they will be able to see all the files they need to evaluate. Also, for the "Evaluation Sheet" a link will appear and they will be able to open a sheet where they can update the marks of the assigned students or peer's.

The sample screenshot for the above all functionalities are attached below: -

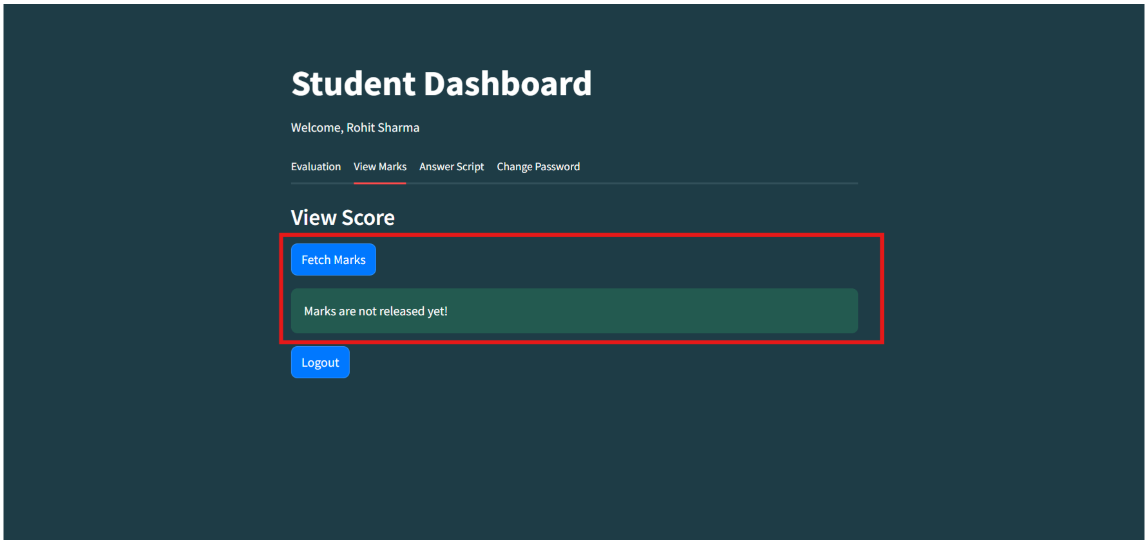


In the above screenshot we can clearly see that the “Evaluation Files” link is available and the student can use the link to open the files that he needs to evaluate.

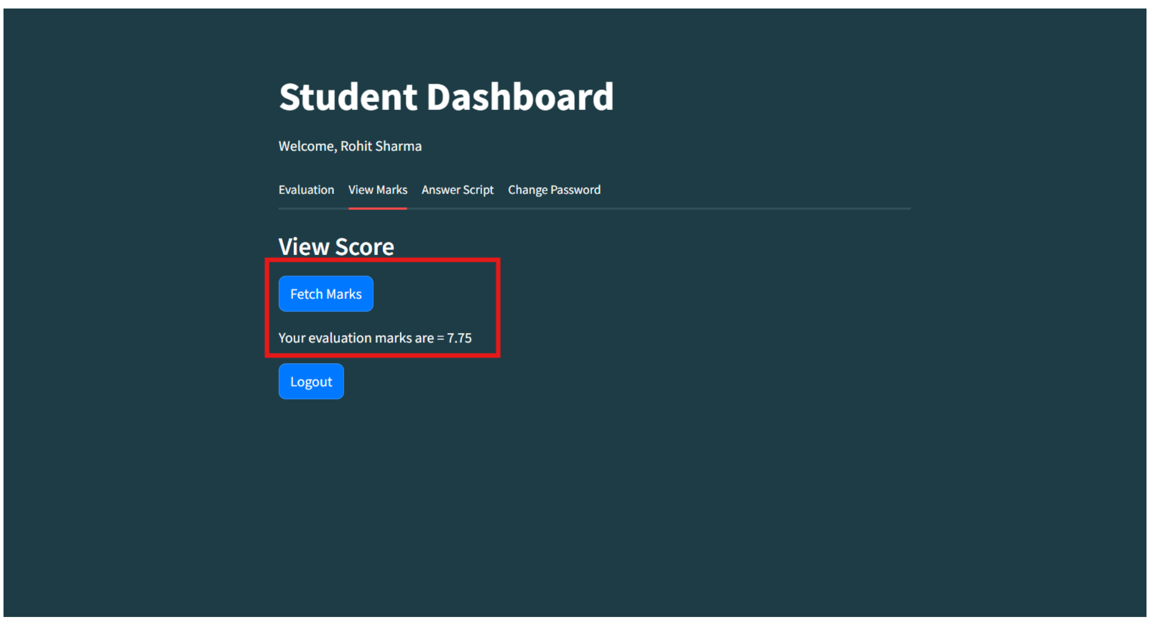


In the above screenshot we can see that the “Evaluation Sheet” link is available and the student can use the link to open the sheet in which he has to update the marks of their peers.

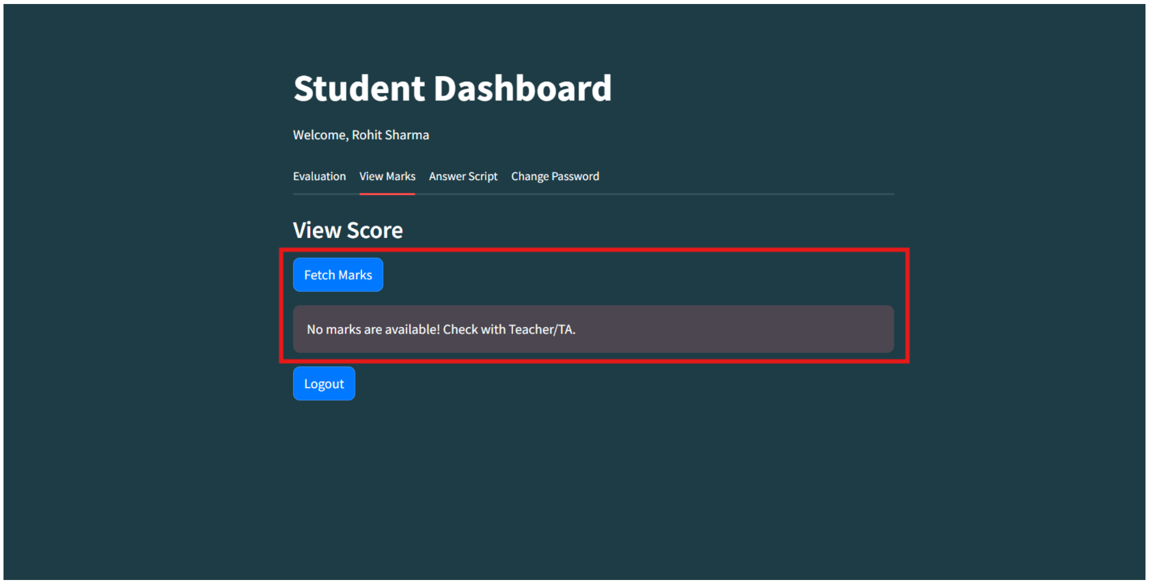
- **Student dashboard (View Marks) window: -**



The “Fetch Marks” button on the View Marks window will help the student to view their marks for the current Quiz/Test. If the marks are not released yet then they will get the above message on their portal.

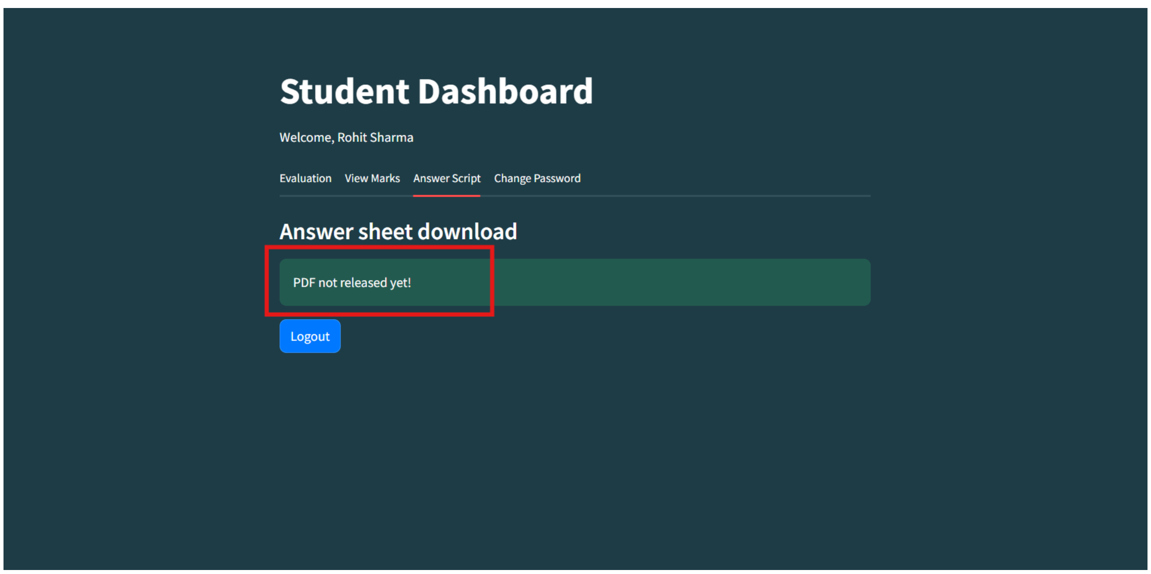


If the marks are released and available for the students, then they can see their marks with a display message as shown above.

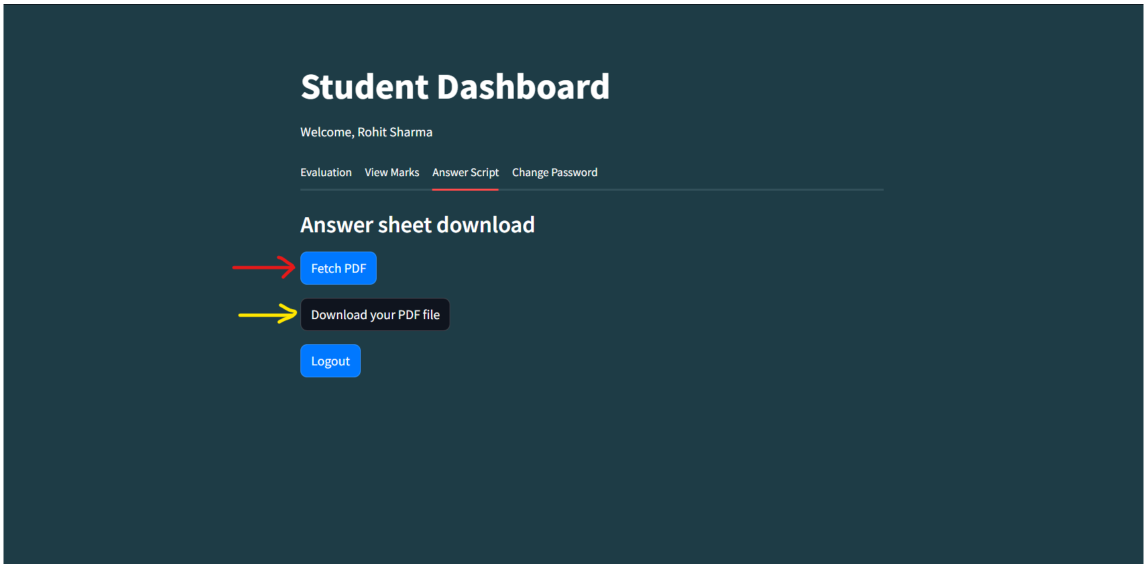


If the marks are released but the marks are not available for the students, then they will see the above message which asks them to get in touch with the teacher or TA of the subject.

- **Student dashboard (Answer Script) window: -**



If the Answer sheet is not released that means the evaluation is still pending then the students will see the above message which says "PDF not released yet!".



If the Answer sheet is available, that is the evaluation is done, then they can use the "Fetch PDF" button depicted with red arrow to get the "Download your PDF File" option depicted with yellow arrow. Using the above "Download your PDF File" option the student can download their Answer scripts and can view them.
The "Change Password" functionality is the same for all the users and the students can read the instructions for password change from the above "Change Password window" section of the instructions.

5. Troubleshooting and FAQs: -

Common Issues

- **Problem: Unable to Log in/Register.**
  - **Solution**:
    - Check if the email and password entered are correct.
    - Ensure that the "Caps Lock" key is not on.
    - Ensure that the password is using a special character from these characters only "**@$!%*?&**".
- **Problem: Evaluation sheets are not visible.**
  - **Solution**:
    - Refresh the dashboard to update the content.
    - Confirm with the administrator or TA if the sheets are released.
- **Problem: Scores are not available.**
  - **Solution**:
    - Ensure that all required fields in the evaluation sheet are filled out.
    - Contact the teacher or TA to confirm whether the marks are released or not.

FAQs

1. **How do I upload evaluation sheets (PDF files)?**
   - Go to the **Upload Data** section, click on the student information and pdf files upload option to upload the files and select the file from your device. Ensure it is in the correct format (PDF or Excel).
2. **Can TA or Teacher edit uploaded data?**
   - They can edit or change the data at the time of the upload and if they want to reupload the data at a later time they can contact the administrator for that.
3. **How are peer groups formed?**
   - Peer groups are automatically generated based on criteria which use the unique id for the group allocation.
4. **What formats are supported for uploading evaluation sheets?**
   - The system supports the PDF format for uploading the evaluation sheets and excel sheets for uploading the student information.