PrashnaSetu

Think. Compete. Conquer.

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Introduction

PrashnaSetu is a **modern quiz management system** designed for educational institutions, blending traditional assessments with modern digital evaluation. Built using **JavaFX**, it offers secure, scalable, and user-friendly solutions for educators and students.

## Purpose and Primary Features

Purpose:

- Facilitate secure quiz administration

- Enable real-time monitoring for academic integrity

- Streamline quiz creation/management

- Generate robust performance analytics

- Support hierarchical user management (Admin, Instructor, Proctor, Student)

Key Features:

- Multi-role access control (RBAC)

- Advanced quiz engine: supports images, mathematical expressions

- Real-time proctoring/monitoring

- Detailed analytics and export capabilities

- Secured authentication

- Academic integrity tools: time limits, randomization, etc.

Starting the Application

1. Extract the distributed zip

2. Locate PrashnaSetu Executable file:
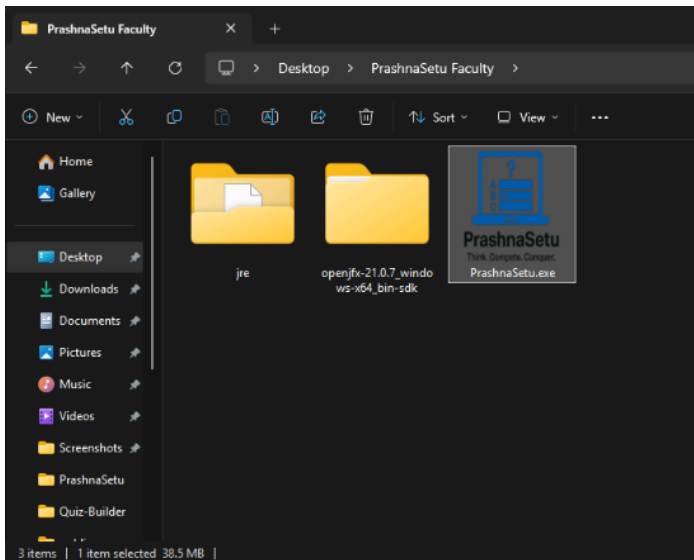
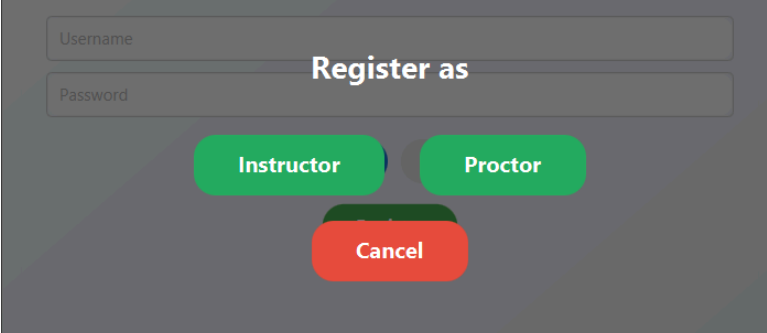3. Run the executable file, upon running it the Role Selection screen will appear:
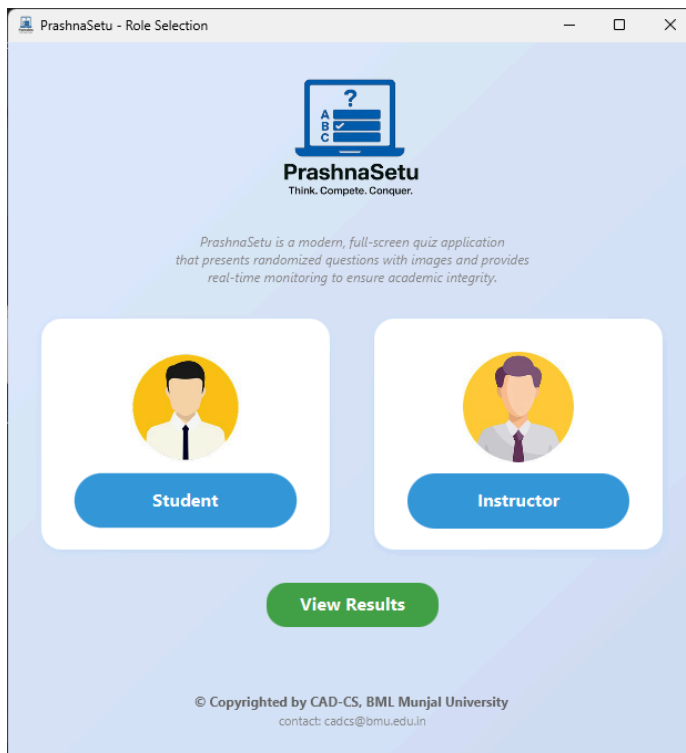
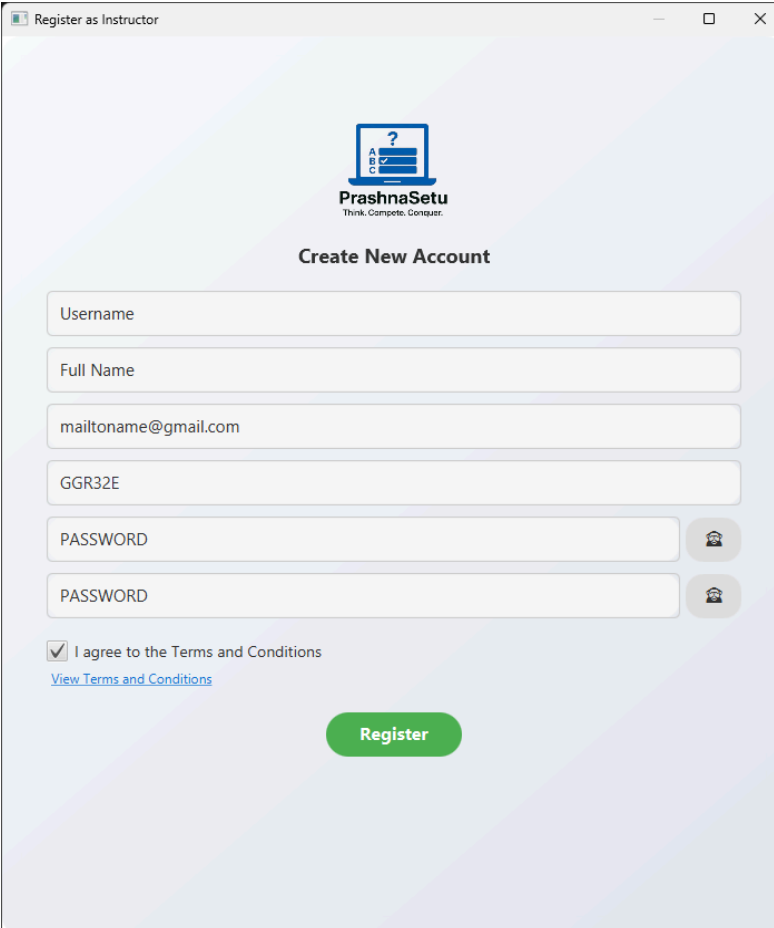4. On the Role Selection Screen, select Instructor. This will redirect you to the Login Screen.

5. If a **Username** and **Password** have been provided by the admin, log in using those credentials. Alternatively, click **Registration** and select **Instructor**.
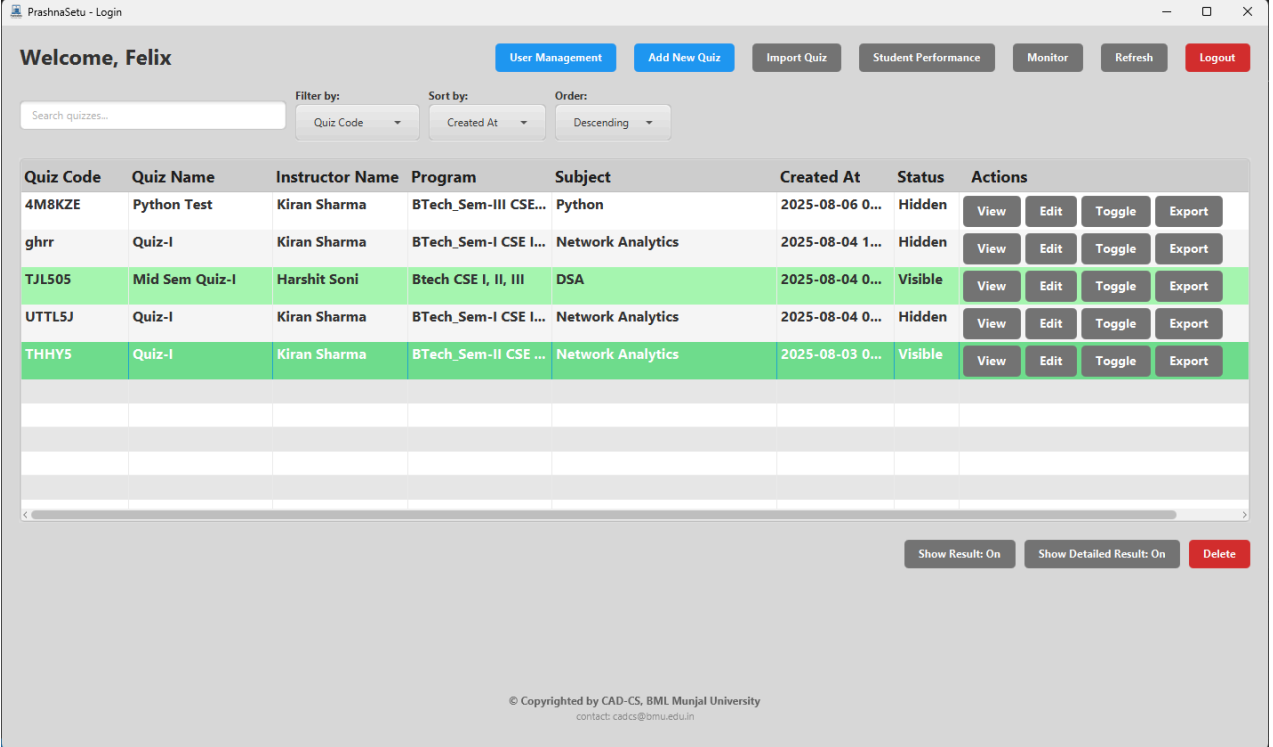

6. The **Registration Screen** will appear. Fill out the form with your desired credentials and the **registration code** provided by the admin to create an account.

7. **Upon successful login, you'll be directed to the Instructor Dashboard.** For detailed information on its features and functionalities, refer to the *Instructor Dashboard* section of this guide.

Instructor Dashboard
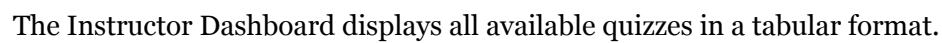

The Instructor Dashboard displays all available quizzes in a tabular format.

Various general and quiz-specific functions can be accessed from the Instructor Dashboard.

- General functions include: Add Proctor, Import Quiz, Refresh, and Logout.

- Quiz-specific functions include: View Quiz, Edit Quiz, Toggle Visibility, Export Quiz, Show Result, Show Detailed Result, Remove, Monitor, and Student Performance.

General Functions

- Refresh
  - Updates the quiz table with the latest data from the database.
- Import Quiz
  - The zips generated from the PrashnaSetu website can be imported using this function.
  - Step 1: Click the Import Quiz button.
  - Step 2: Locate the ZIP file generated from the website.
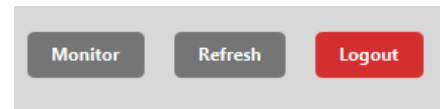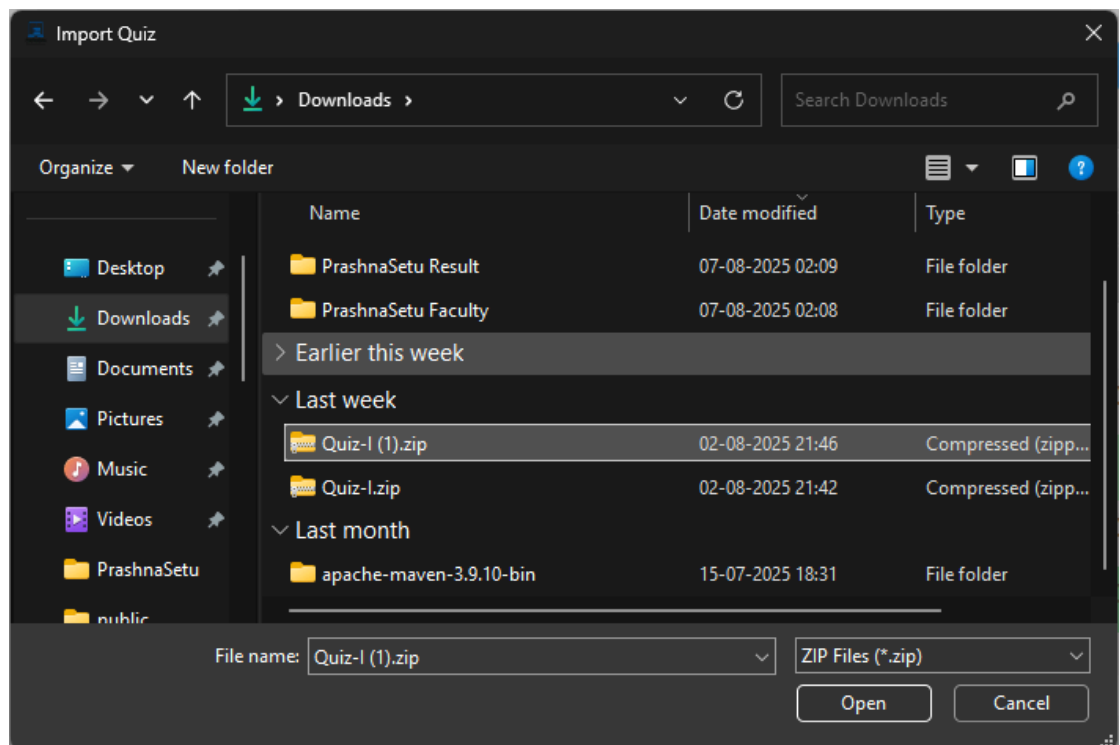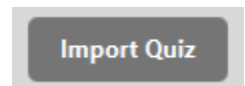
- Step 3: If a quiz with the same Quiz Code already exists, you'll be prompted to enter a new code. Otherwise, the quiz will be imported successfully, and the table will refresh to reflect the changes.
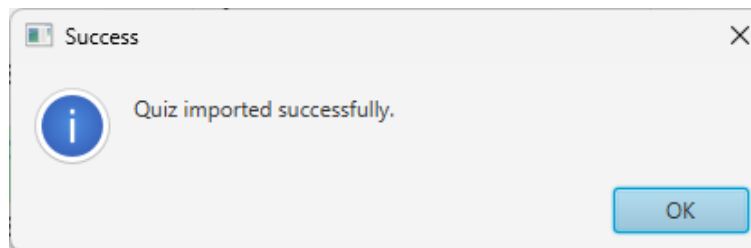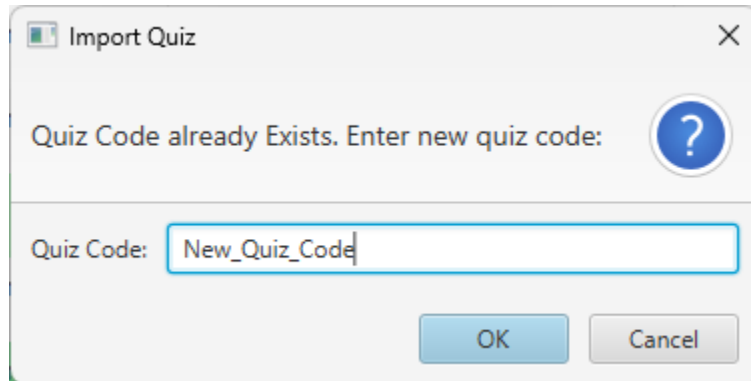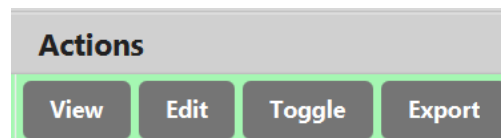

- Add Proctor
  - For details on adding proctors, refer to the Add Proctor section of this manual.

- Logout
 - By clicking the Logout button users can securely log out of their current session.

Quiz Specific Functions

- View Quiz
    - By using the **View Quiz** button, users can quickly view quiz details divided into four sections for easy access:
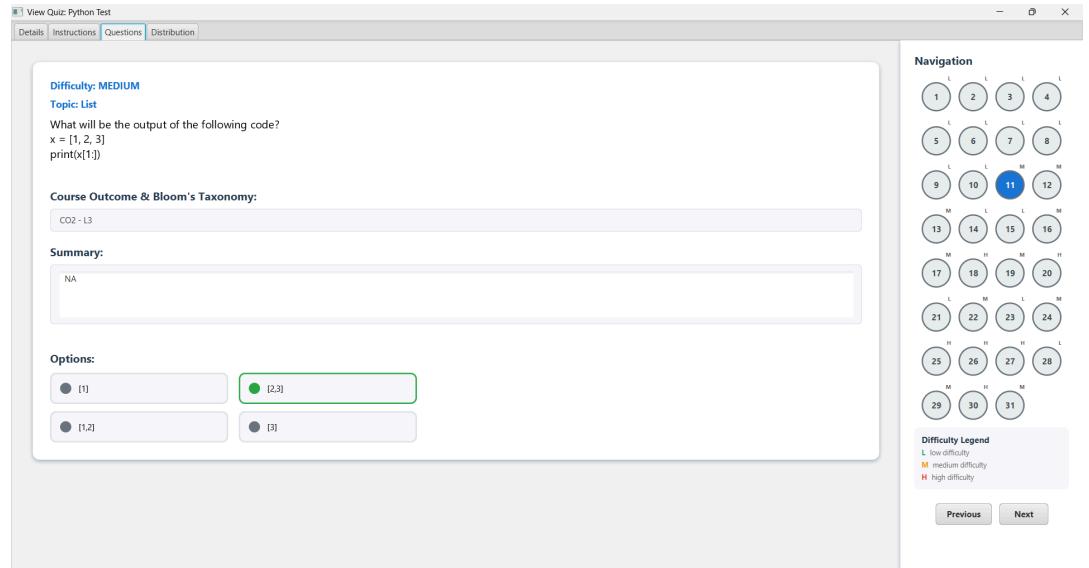

    - **Details:** Displays program information (course, batch, section, and semester the quiz is intended for), subject information, quiz settings (time limit, total number of questions, difficulty-wise distribution per attempt), and instructor information.
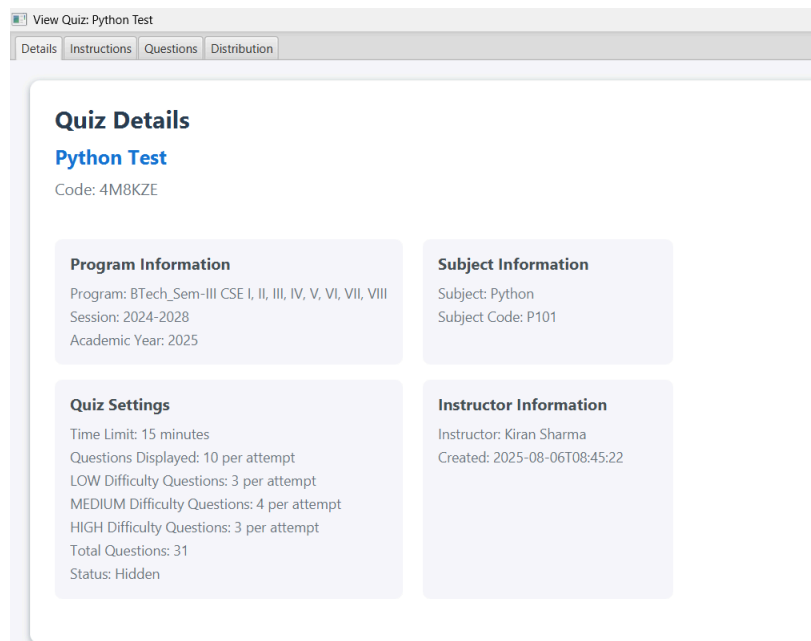
    - **Instructions:** Displays the instructions for the quiz.
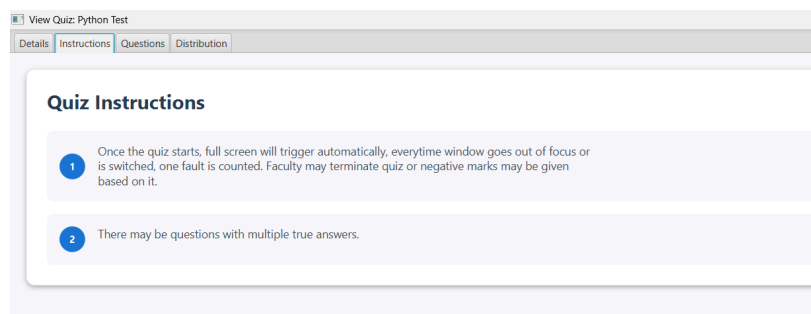
■ **Questions:** Displays all questions that are part of the quiz. *(Note: The total number of questions may be higher than the number shown to students, as a shuffled subpool is served per attempt.)*

■ **Question Distribution:** Displays the number of questions served to the student, categorized by difficulty and topic.

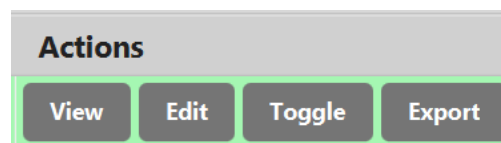| Topic	LOW	MEDIUM	HIGH
Set	0	1	0
List	1	1	1
Basic	1	1	0
Tuple	0	0	0
Function	0	0	2
Packages	1	0	0
Dictionary	0	1	0

- Edit Quiz
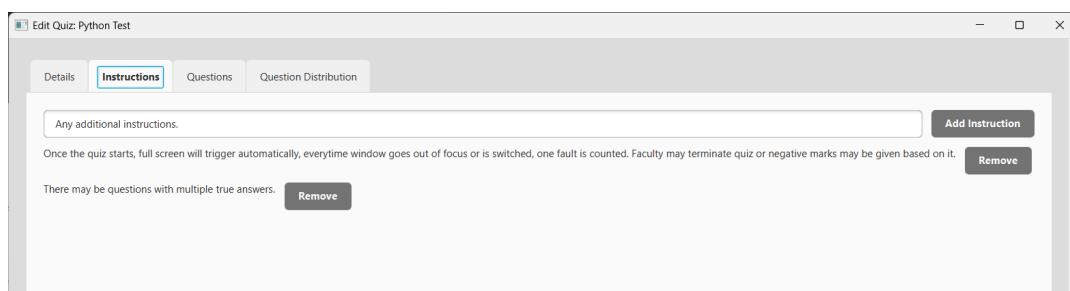 - By using the **Edit Quiz** button, users can modify quiz details, update or add instructions and questions, and adjust question distribution. Like **View Quiz**, this section is organized into four parts for easy access:
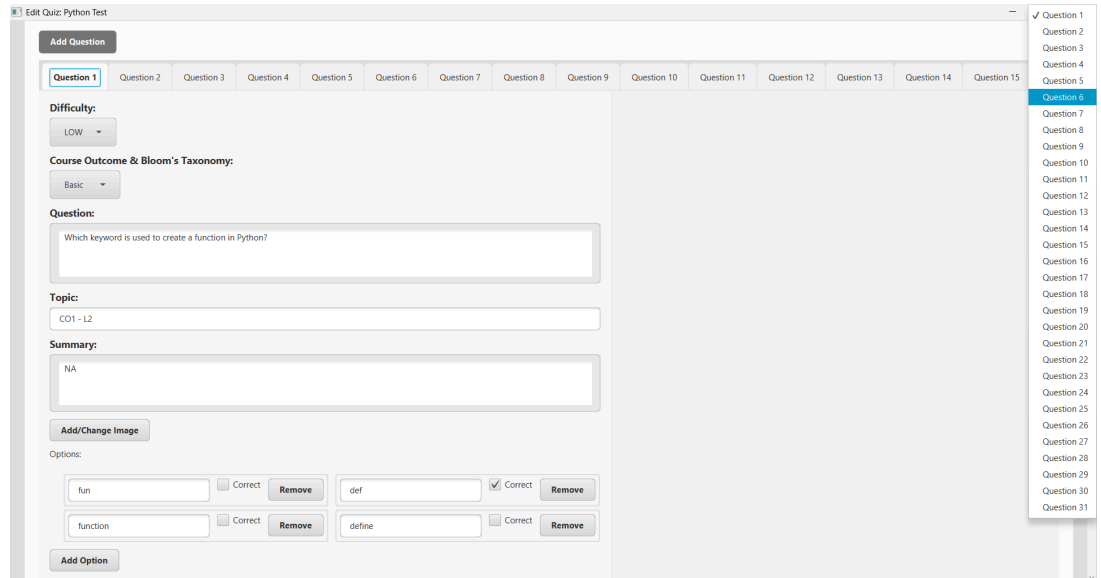

    - **Details:** Allows editing of program information (course, batch, section, and semester the quiz is intended for), subject information, quiz settings (time limit, total number of questions and difficulty-wise distribution per attempt).
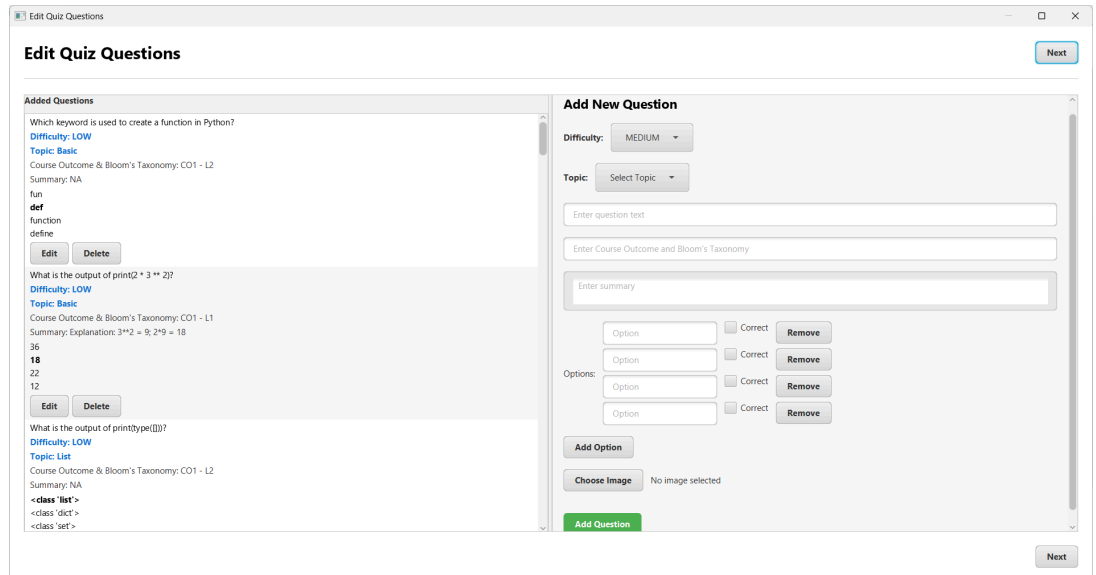

    - **Instructions:** Enables updating or adding instructions for the quiz.
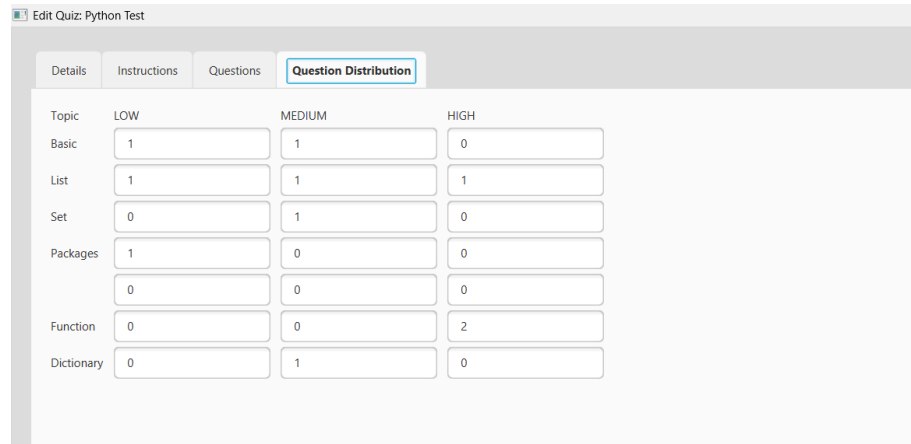
■ **Questions:** Lets users edit existing questions or add new ones.
The **Questions** section contains two windows: one for editing existing questions, and another that can be accessed by clicking the **Add Question** button to add more questions.
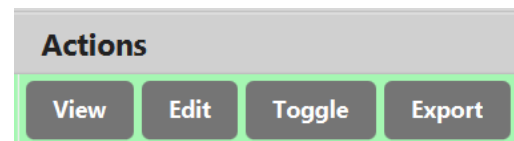Editing Questions:

Adding Questions:

■ **Question Distribution:** Allows modification of the number of questions served to students, categorized by difficulty and topic.

Edit Quiz: Python Test

| Details | Instructions | Questions | **Question Distribution** |

Topic	LOW	MEDIUM	HIGH
Basic	1	1	0
List	1	1	1
Set	0	1	0
Packages	1	0	0
	0	0	0
Function	0	0	2
Dictionary	0	1	0

- Toggle Visibility
  - Allows toggling the quiz status between **Visible** and **Hidden**.
  - **Status: Visible** The quiz is accessible to students and can be attempted, to be done during scheduled quiz timings.

  - **Status: Hidden** The quiz is not visible/available to students. This is to be used for record-keeping, future scheduling, or administrative review.
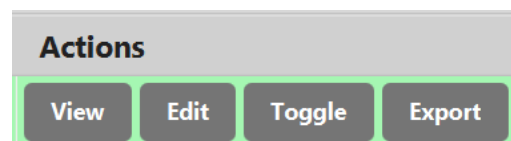
- Export Quiz
  - Allows the quiz to be exported as a ZIP file for record-keeping, backup, and future reference.

- Remove
  - Selecting **Remove Quiz** from the Instructor Dashboard removes the quiz from the instructor's view. However, **all associated data**—including questions, instructions, student performance records, results, and monitoring logs—**remain intact in the database** and are accessible to the Admin.
  - *Note: This action cannot be undone.*

- Show Result On/Off & Show Detailed Result On/Off
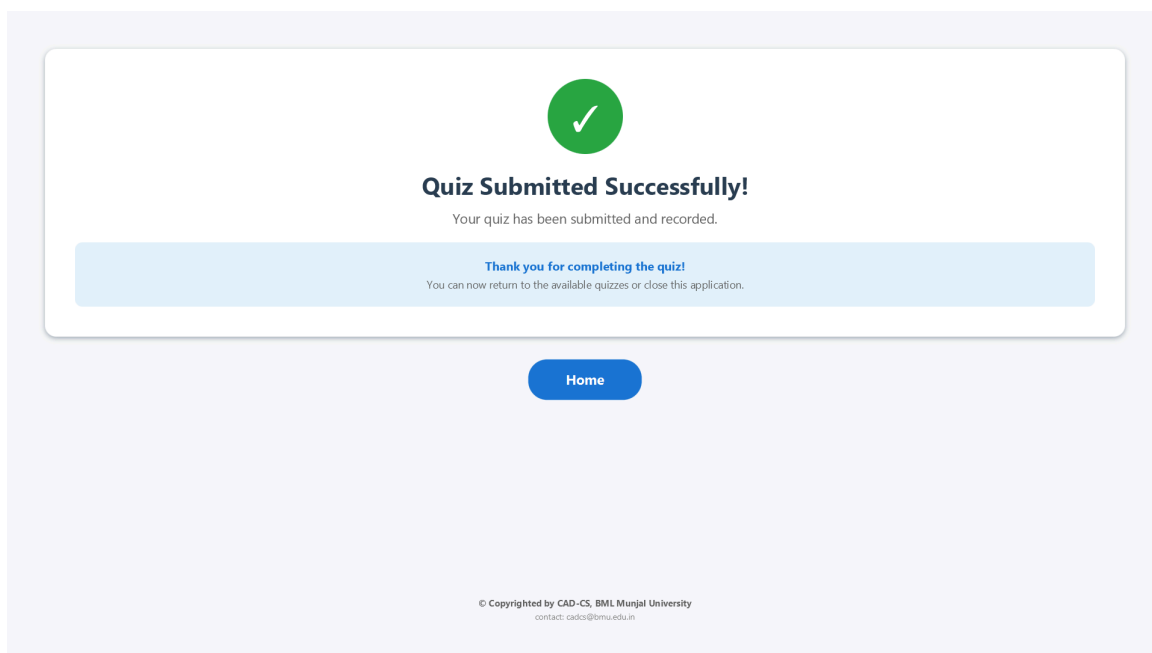 - These two buttons work in coordination and determine what is displayed to the student upon quiz submission.
  - **Show Result: Off**
    The student will not be shown the marks obtained and will simply see a submission confirmation screen. Can be used when marks are to be released at a later time.
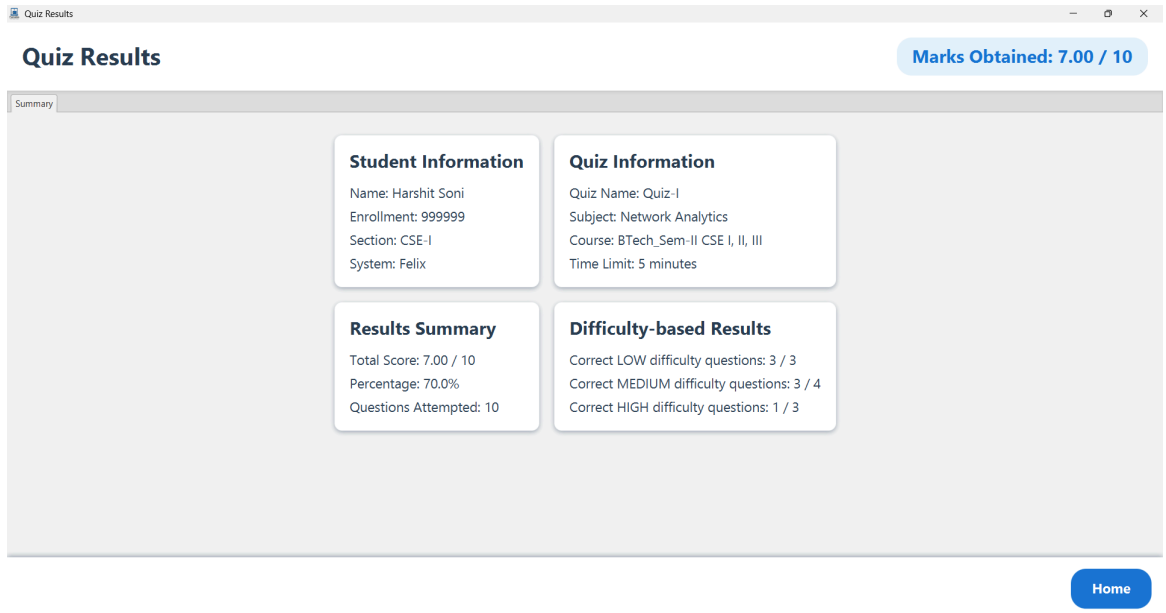
○ **Show Result: On & Show Detailed Result: Off**

The student will be shown the total marks obtained, percentage, and difficulty-wise marks breakdown.
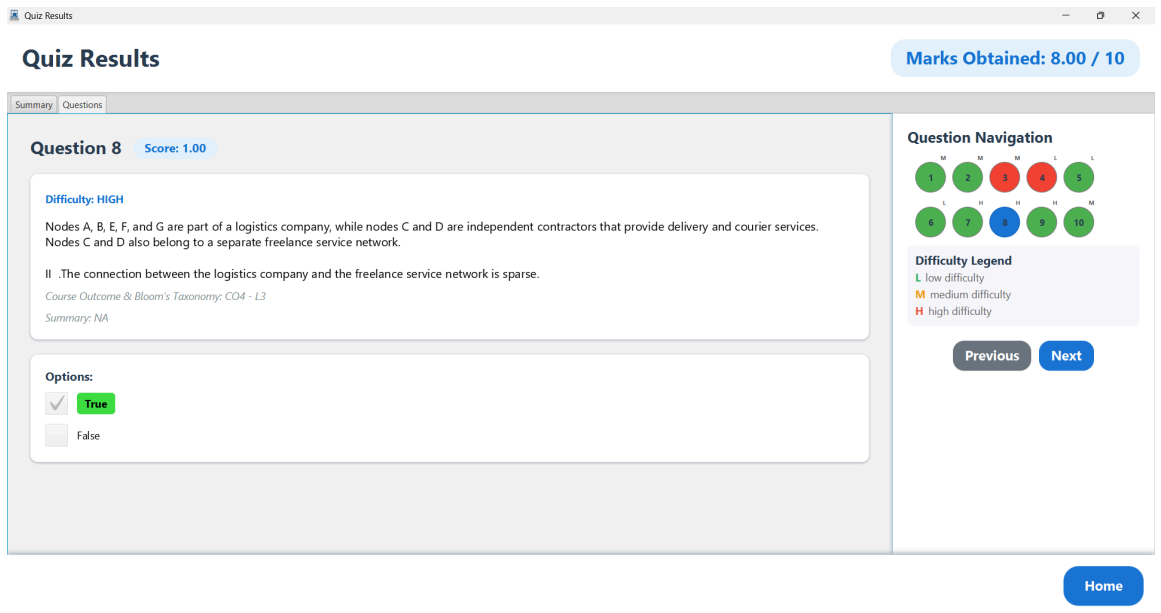
○ **Show Result: On & Show Detailed Result: On**

The student will be shown the total marks obtained, percentage, difficulty-wise marks breakdown, along with the questions they were served, the options they selected, the correct answers, and other details.
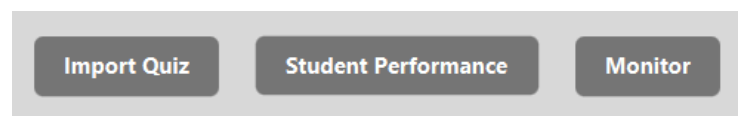
- Monitor
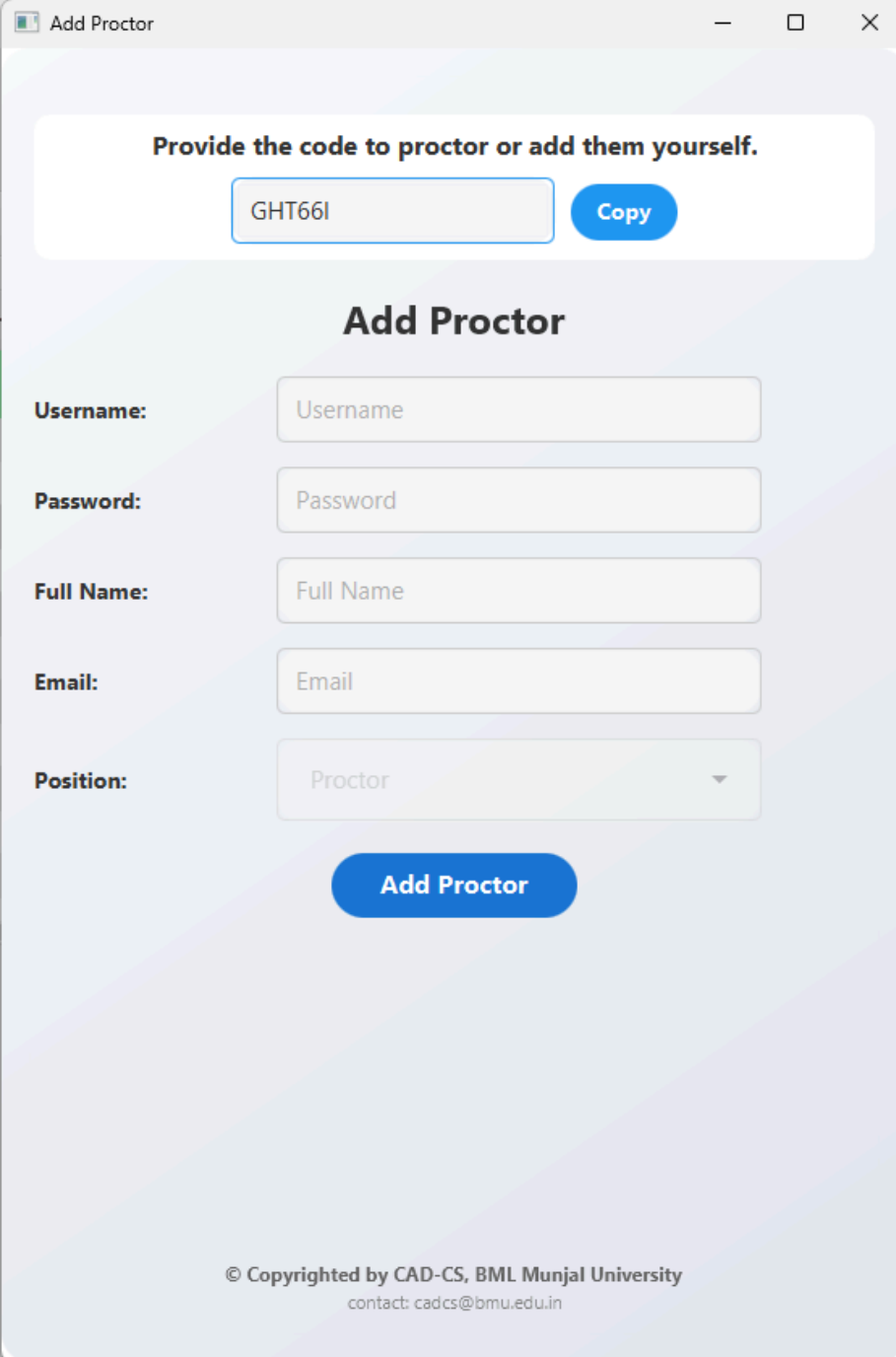 - For details on monitoring quizzes, refer to the Monitor section of this manual.

- Student Performance
  - For details on Student Performance and Results refer to the Student Performance section of this manual.

Add Proctor

The **Add Proctor** screen can be accessed by clicking the **Add Proctor** button on the Instructor Dashboard. Once clicked, the following screen will appear:

- The Instructor can register new Proctors as using one of the following two methods
  - **Registration Codes**
    - Provide Proctors with **Proctor registration codes** to allow them to self-register as an Instructor or Proctor.

  - **Add Proctor**
    - By filling the form screen and clicking the **Add Proctor** button Instructor can manually register new proctors.
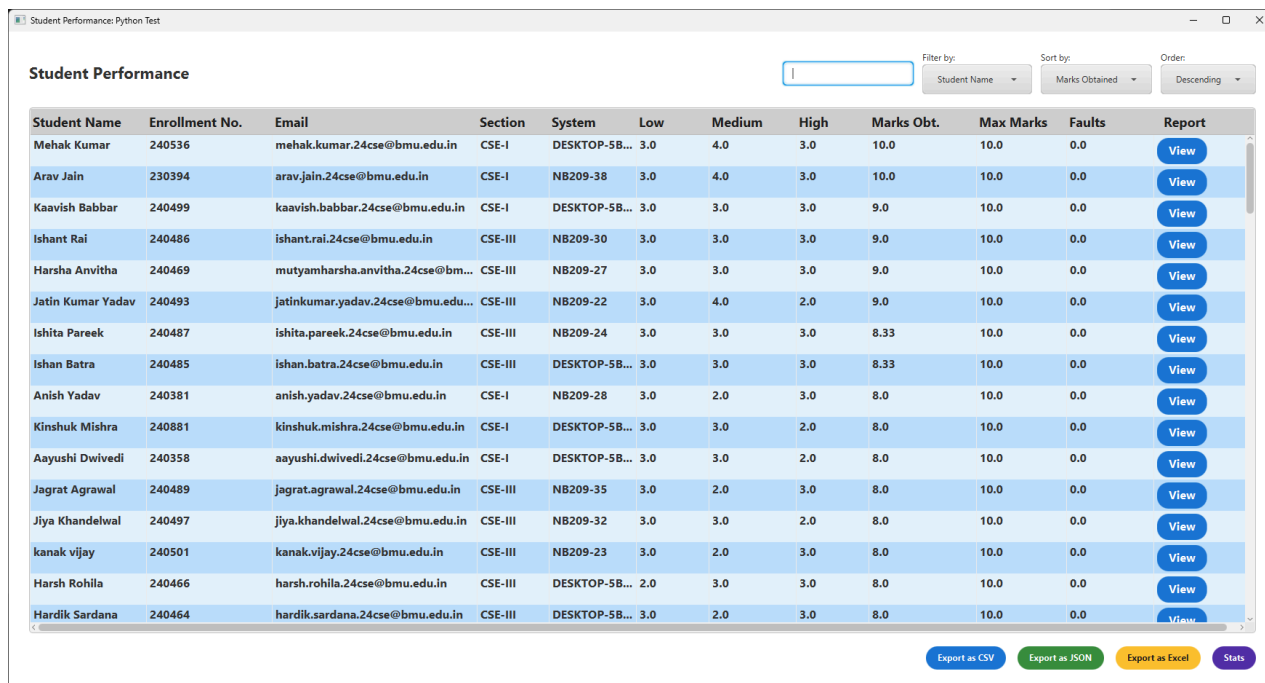
Student Performance

The **Student Performance** screen can be accessed by clicking the **Student Performance** button on the Instructor Dashboard. Once clicked, the following screen will appear:

The table displays the following details for each student: **Name**, **Enrollment Number**, **Email Address**, **Section**, **System Name**, number of correct answers by **Low/Medium/High Difficulty**, **Marks Obtained**, **Maximum Marks**, and **Fullscreen Faults**.
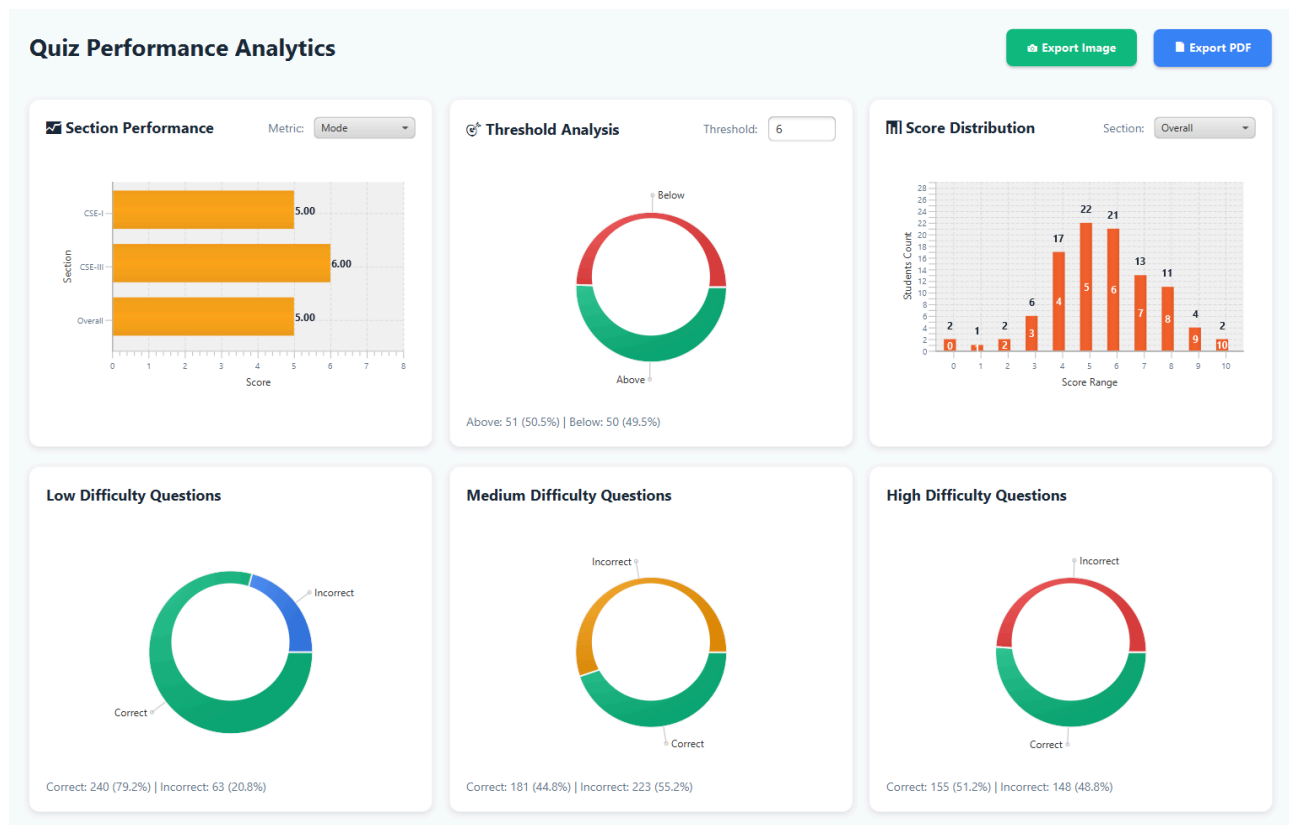

This table can be exported in **CSV**, **JSON**, or **Excel** format.

By clicking the **Stats** button located at the bottom-left of the screen, you can access **analytics based on student performance data**. These insights help visualize trends, identify strengths and weaknesses, and support data-driven decision-making.

Quiz Performance Analytics

Section Performance — Metric: Mode

Threshold Analysis — Threshold: 6
Above: 51 (50.5%) | Below: 50 (49.5%)

Score Distribution — Section: Overall

Low Difficulty Questions
Correct: 240 (79.2%) | Incorrect: 63 (20.8%)

Medium Difficulty Questions
Correct: 181 (44.8%) | Incorrect: 223 (55.2%)

High Difficulty Questions
Correct: 155 (51.2%) | Incorrect: 148 (48.8%)

The analytics can be exported as an **image** or **PDF** using the **Export Image** or **Export PDF** buttons.

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Detailed individual student results can be viewed by clicking the **View** button in the **Report** column.

The report can be saved as a **PDF** by clicking the **Export PDF** button.
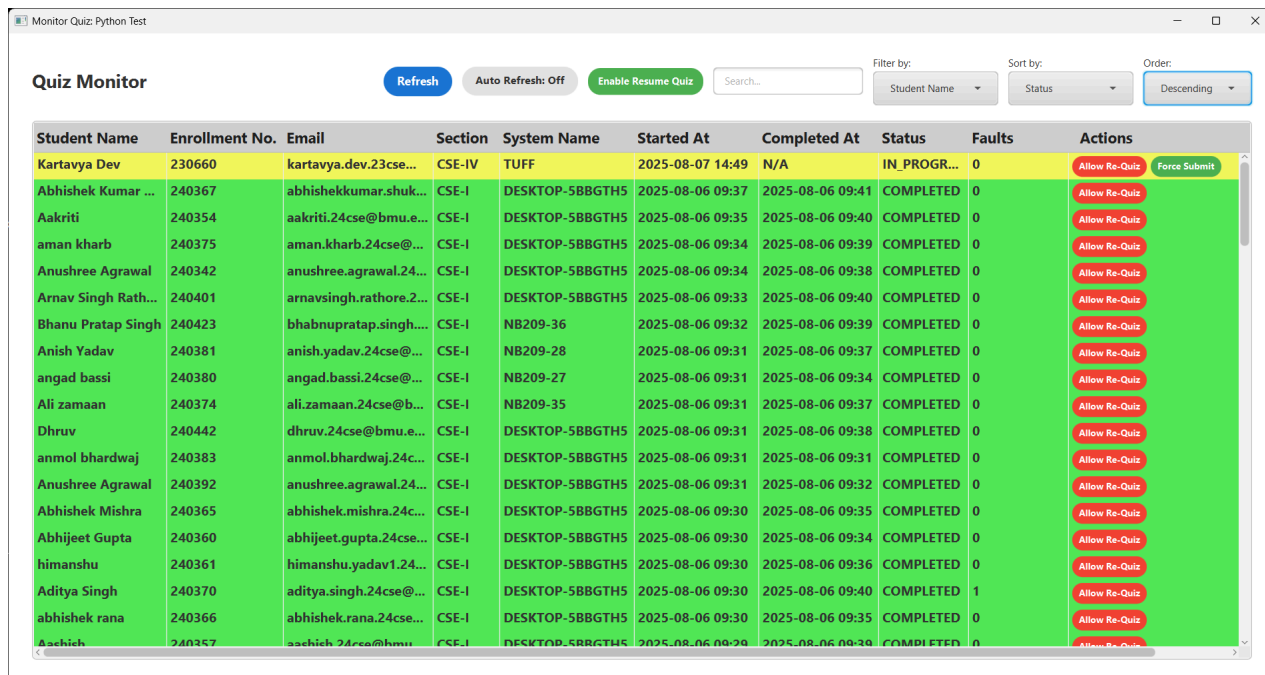
Monitor

The **Monitor** screen can be accessed by clicking the **Monitor** button on the Instructor Dashboard. The **Monitor** screen allows to **actively supervise students during live quizzes**, ensuring academic integrity and quick response to any issues. Once clicked, the following screen will appear:

- The table displays the following details for each student: **Name**, **Enrollment Number**, **Email Address**, **Section**, **System Name**, **Started At**, **Completed At**, **Status** and **Fullscreen Faults**.
- The table automatically refreshes every 5 seconds. This can be turned off by toggling **Auto Refresh** to **Off**. The table can also be manually refreshed using the **Refresh** button.
- If a student is caught cheating or using unfair means, their quiz can be forcefully terminated by clicking the **Force Submit** button in the **Actions** column. The marks will be calculated based on the options selected up to that point.
- In case of unforeseen circumstances such as a system crash or server failure, the **Resume Quiz** button can be toggled to **Enable**, allowing students to resume the quiz from the last saved point. *(Student responses and remaining time are synced every 5 seconds or whenever an option is selected.)*
- If a student is to be allowed a fresh reattempt, this can be done by clicking the **Allow Re-Quiz** button in the **Actions** column.

Contact & Support

If you encounter any issues while using PrashnaSetu or need assistance with setup, monitoring, or troubleshooting, please reach out through the following channels:

- **Primary Contact:** Center for Advanced Data and Computational Science BMU

- **Email:** cadcs@bmu.edu.in

- **Department:** CAD-CS, BML Munjal University

- **Secondary Contact:** Harshit Soni

- **Email:** harshit.soni.23cse@bmu.edu.in

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