Project Report

Quiz Application using Django

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1. Tools Used

1.1 Background

- **Framework**: Django
- **Database**: PostgreSQL (chosen for its relational structure and scalability)
- **Frontend**: HTML, CSS, JavaScript
- **Additional Libraries:** Django Rest Framework (for API development), Bootstrap (for frontend design)

2. Components and Design

2.1 User Authentication and Roles:

- **Examiner (Admin):** Has access to quiz creation, modification, and result viewing.

- **Examinee (Enduser):** Can take quizzes, view their scores, and see statistics.

2.2 Database Schema

- **User Models**
  Examiner Model (Examiner):
    - Inherits from Django's AbstractUser.
    - Has a many-to-many relationship with Course.
    - Has many-to-many relationships with Group and Permission.
    - Uses a custom user manager (CustomUserManager) for creating regular and superusers.

  Examinee Model (Examinee):
    - Inherits from Django's AbstractUser.
    - Has a many-to-many relationship with Course through Enrollment.
    - Has many-to-many relationships with Group and Permission.
    - Uses a custom user manager (CustomUserManager) for creating regular and superusers.

  Enrollment Model (Enrollment):
    - Represents the enrollment of an Examinee in a specific Course.
    - ForeignKey relationships with Examinee, Examiner, and Course.

- **Course Model**
  Course Model (Course):
    - Represents a course that both Examiners and Examinees can be associated with.
    - Contains a name field.
- **Quiz and Question Models**
  Quiz Model (Quiz):
    - Represents a quiz associated with a specific Course.
    - Contains a title field and a ForeignKey relationship with Course.

  Question Model (Question):
    - Represents a question associated with a specific Quiz.
    - Contains question text, options (A, B, C, D), and the correct option.
    - ForeignKey relationship with Quiz.
- **Result Model**
  Result Model (Result):
    - Represents the result of an Examinee in a specific Quiz.
    - Contains the Examinee, Quiz, and the score.

2.3 Quiz Creation (Admin Panel):

- **Form:** Admins can use a form to create quizzes, adding questions with options and correct answers.
- **Validation:** Ensure a minimum of 10 questions for each quiz.
- **Database Storage:** Save quiz attributes and questions with their corresponding data.

2.4 Quiz Taking (Examinee Interface):

- **Random Selection:** Display a randomly selected subset of questions (e.g., 5 out of 10) for the examinee.
- **Timer**: Automatically submit the quiz if the timer runs out, or allow manual submission by the user.
- **Evaluation**: Upon submission, calculate and display the examinee's score based on correct answers.

2.5 Additional Features:

- **Enrolment:** End user(examinee) is only shown the quizzes that are associated with the courses they are enrolled in. It does not show any other quizzes.
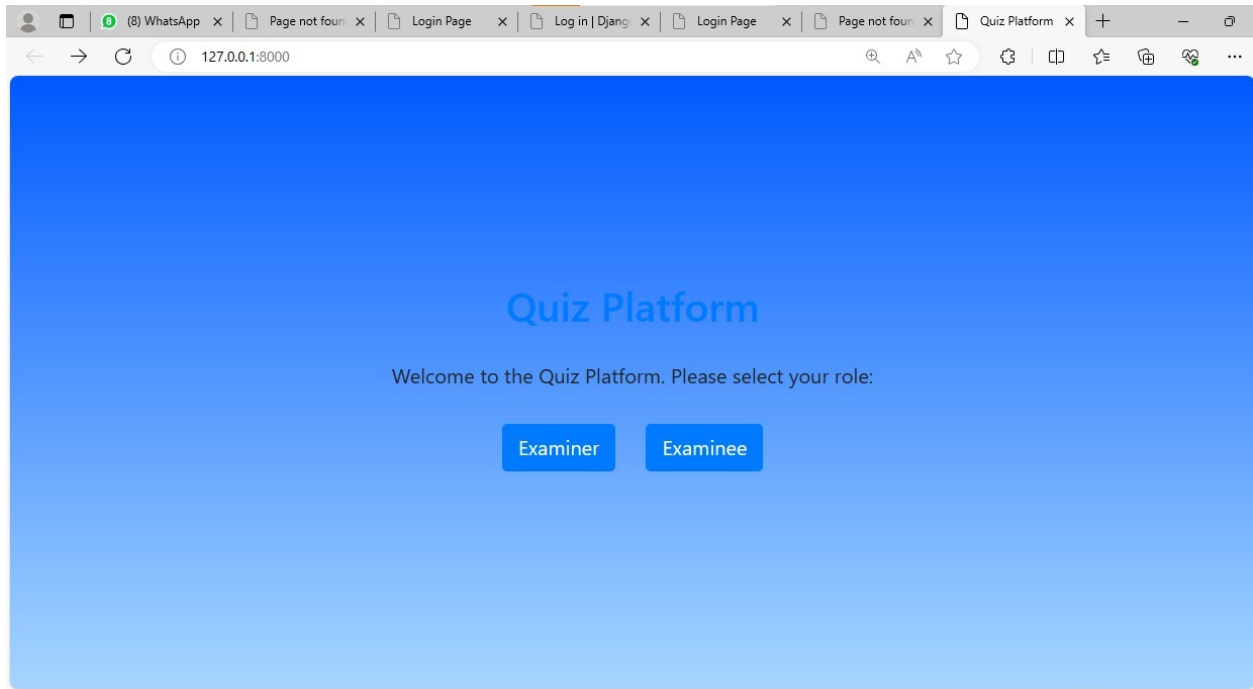
2.6 Visualizations:

- **Dashboard**: Create a dashboard for Examiners to view aggregated quiz data and statistics.

3. Conclusion

The Quiz Application using Django fulfills the requirements for both Examiner and Examinee roles. It enables quiz creation, customization, and efficient evaluation for users. The project integrates various Django functionalities, database management, and user interaction, providing a comprehensive learning and assessment platform.

Screenshots of Implementation:
Examiner:

Examiner Registration

Username:
pjadhav

First Name:
Purna

Last Name:
Jadhav

Email:
pjadhav@gamil.com

Password:
••••••••••••••

Confirm Password:
••••••••••••••

Register

Already have an account? Login here

Welcome, pjadhav!

Courses conducted by you:

Select Course: managementOfInformationSystem ▾   Create Quiz
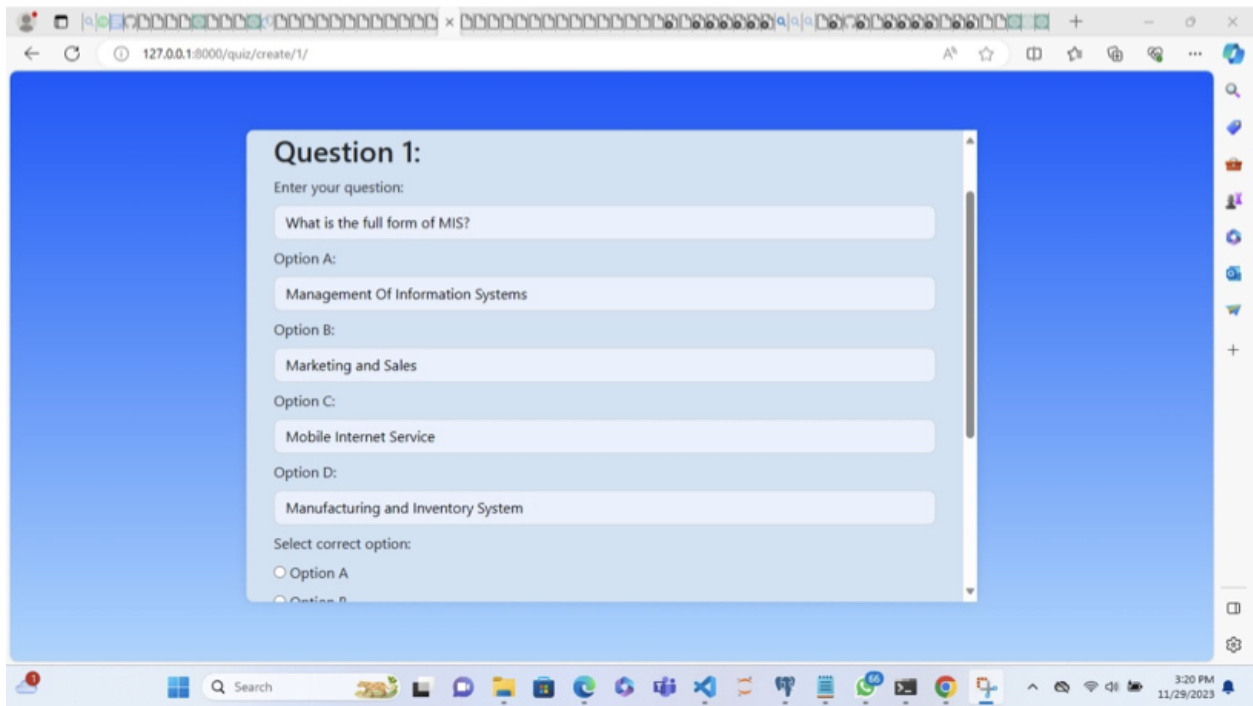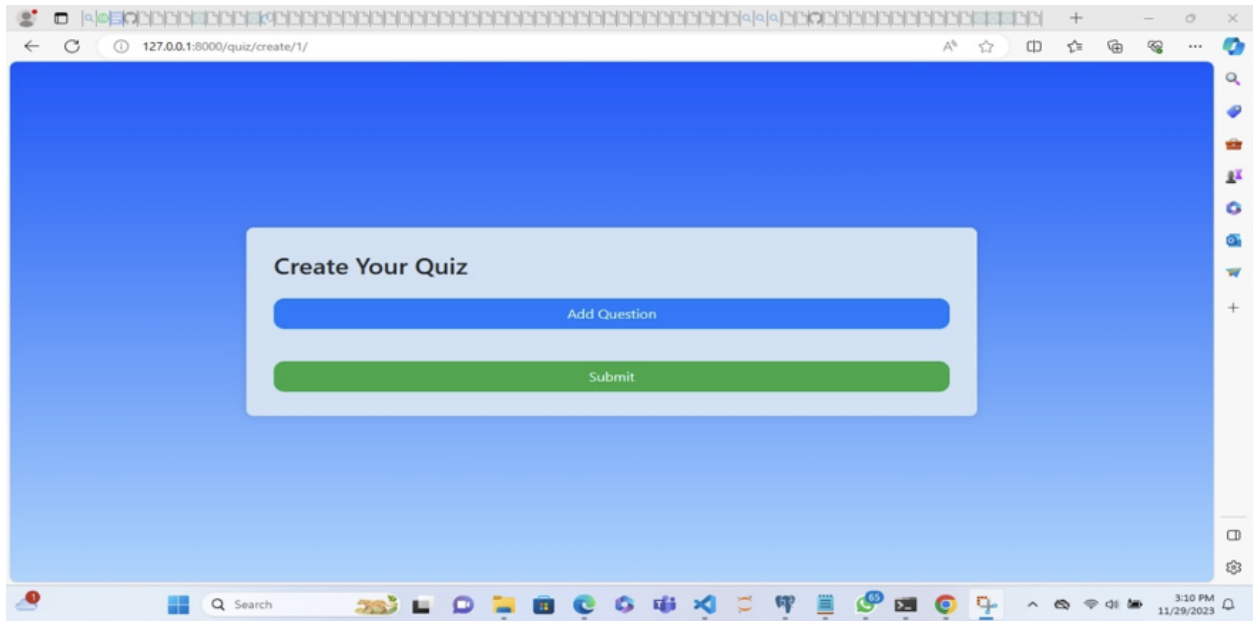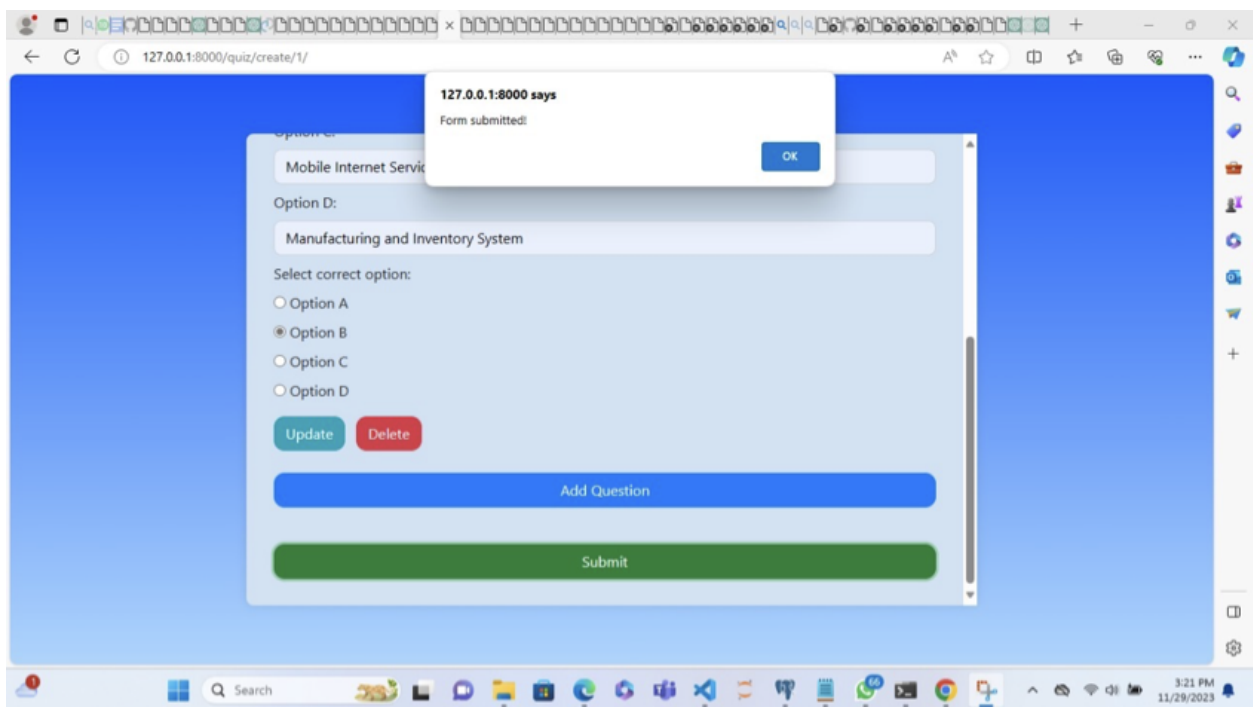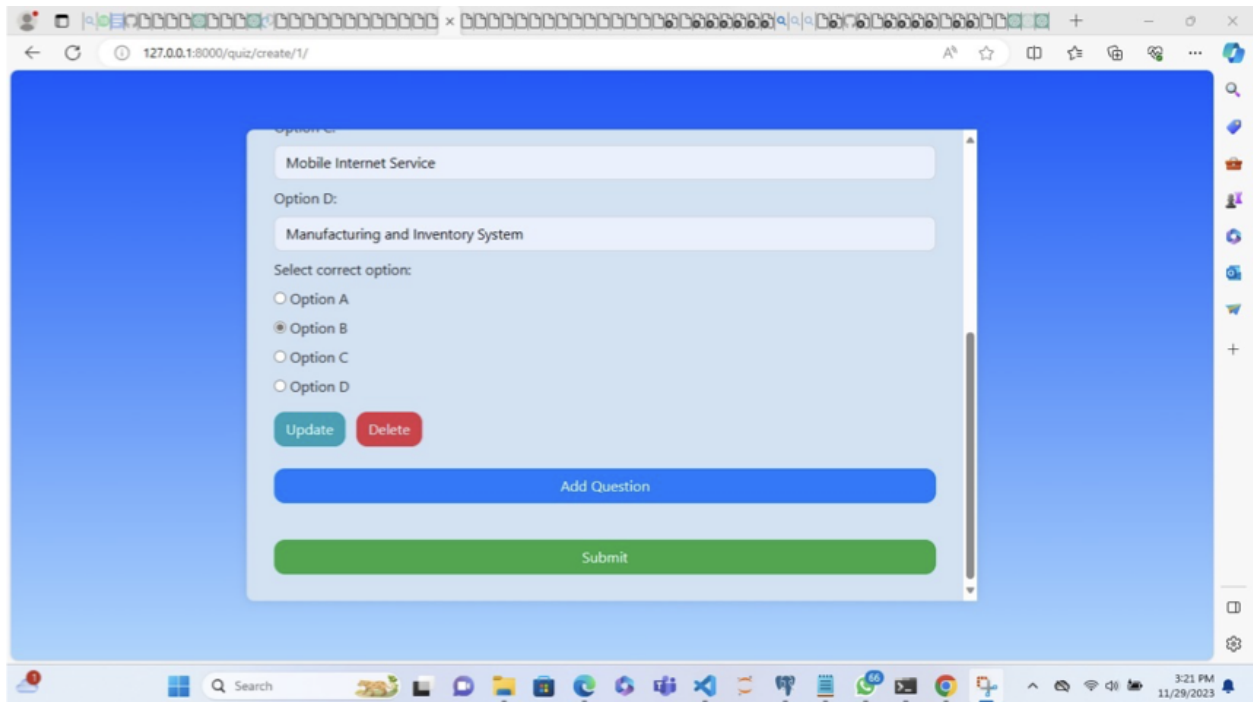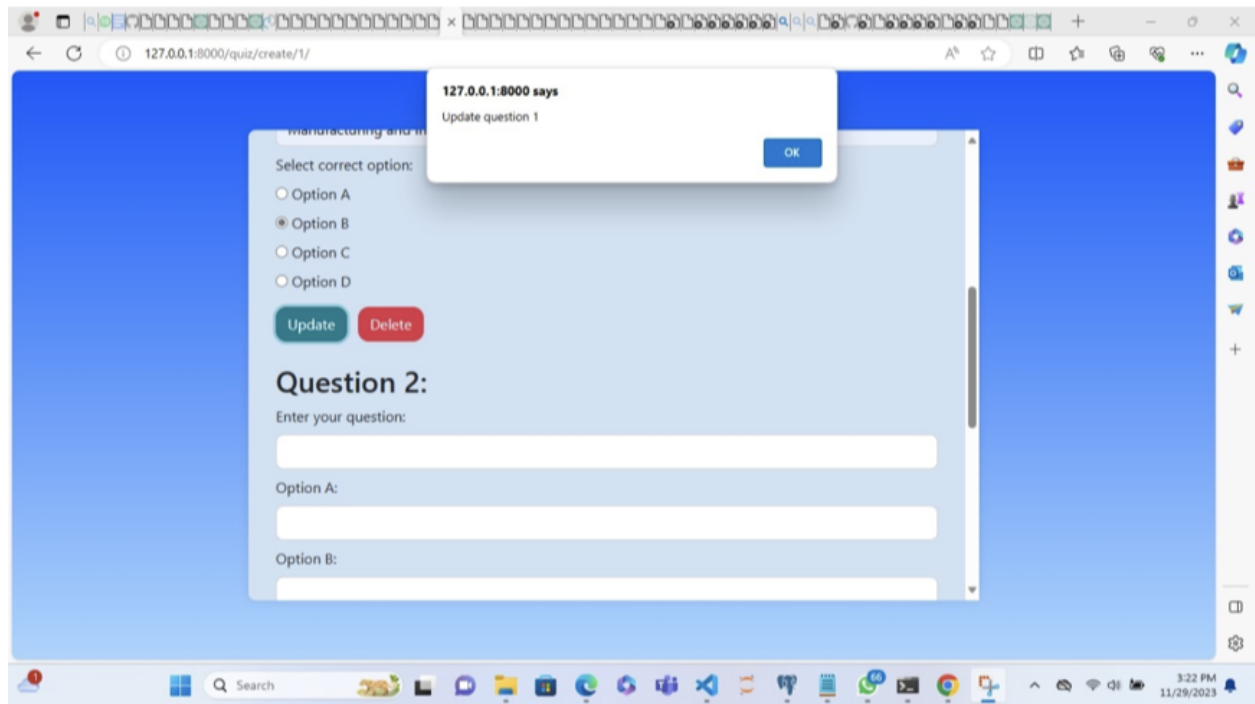
Create Your Quiz

Add Question

Submit

Question 1:

Enter your question:

What is the full form of MIS?

Option A:

Management Of Information Systems

Option B:

Marketing and Sales

Option C:

Mobile Internet Service

Option D:

Manufacturing and Inventory System

Select correct option:

○ Option A

○ Option B

Mobile Internet Service

Option D:

Manufacturing and Inventory System

Select correct option:

○ Option A
◉ Option B
○ Option C
○ Option D

Update   Delete

Add Question

Submit

127.0.0.1:8000 says

Form submitted!

OK

Mobile Internet Servic

Option D:

Manufacturing and Inventory System

Select correct option:

○ Option A
◉ Option B
○ Option C
○ Option D

Update   Delete

Add Question

Submit

Examinee:

Examinee Registration

Username:

anihad

First Name:

Aniha

Last Name:

Deshmukh

Email:

anihad@gmail.com

Password:

Confirm Password:

Register

Already have an account? Login here

Enroll in Course

Successfully enrolled for the course!

Course id:

MIS ▾

Enroll

Your Enrolled Courses

- MIS

Take Quiz

Time Left: 06:48

What is Full form of KNN?

- ◉ K-Nearest Neigbors
- ○ KNN1
- ○ KNN2
- ○ KNN3

Submit Quiz

Quiz Result

Dear **anihad**,

Your score for the quiz "Quiz1" is: **1**.

Thank you for taking the quiz!

Back to Dashboard