

DATABASE DESIGN

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Database Used: MySQL

Project: QBankPro Web Application

1. Overview

The "qbankproweb" database is designed to manage an online interview question bank system, supporting job-related interview preparation. It consists of custom tables for handling jobs, questions, categories, mock interviews, and saved questions. Additionally, Django's built-in tables manage authentication, permissions, and session data.

2. Tables Created (Created in qbankapp)

2.1 qbankapp_job

- **Purpose:** Stores job roles available in the system.
- **Columns:**
 - id (Primary Key, Auto-increment)
 - name (VARCHAR) – Job title (e.g., Data Analyst, Software Engineer etc)

2.2 qbankapp_category

- **Purpose:** Stores question categories such as Aptitude, Technical, etc.
- **Columns:**
 - id (Primary Key, Auto-increment)
 - name (VARCHAR) – Category name

2.3 qbankapp_question

- **Purpose:** Stores questions mapped to jobs and categories.

- **Columns:**

- id (Primary Key, Auto-increment)
- job_id (Foreign Key → qbankapp_job)
- category_id (Foreign Key → qbankapp_category)
- text (TEXT) – Question content
- options (JSON, Nullable) – Stores multiple-choice options
- correct_answer (VARCHAR, Nullable) – Stores the correct answer
- difficulty (ENUM: Easy, Medium, Hard) – Difficulty level
- generated_by_ai (BOOLEAN) – Indicates AI-generated questions

2.4 qbankapp_mockinterviewquestion

- **Purpose:** Stores questions used in mock interviews.

- **Columns:**

- id (Primary Key, Auto-increment)
- question_id (Foreign Key → qbankapp_question)
- job_id (Foreign Key → qbankapp_job)

2.5 qbankapp_interviewquestion

- **Purpose:** Stores questions related to interview sessions.

- **Columns:**

- id (Primary Key, Auto-increment)
- question_id (Foreign Key → qbankapp_question)
- job_id (Foreign Key → qbankapp_job)

2.6 qbankapp_savedquestion

- **Purpose:** Stores questions that users save for later review.

- **Columns:**

- id (Primary Key, Auto-increment)
- user_id (Foreign Key → auth_user)
- question_id (Foreign Key → qbankapp_question)

- saved_at (DATETIME) – Timestamp of when the question was saved

3. Relationships Summary

- One qbankapp_job → Many qbankapp_question
- One qbankapp_category → Many qbankapp_question
- One qbankapp_question → Many qbankapp_mockinterviewquestion & qbankapp_interviewquestion
- One auth_user → Many qbankapp_savedquestion

Table Name	Related Table	Relationship Type
qbankapp_job	qbankapp_question	One-to-Many
qbankapp_category	qbankapp_question	One-to-Many
qbankapp_question	qbankapp_mockinterviewquestion	One-to-Many
qbankapp_question	qbankapp_interviewquestion	One-to-Many
qbankapp_question	qbankapp_savedquestion	One-to-Many
auth_user	qbankapp_savedquestion	One-to-Many

4. Django Default Tables

4.1 Authentication and Permissions Tables

- **auth_user** – Stores user account details.
- **auth_group** – Stores user groups for permission management.
- **auth_group_permissions** – Links groups to permissions.
- **auth_permission** – Stores permission types (add, delete, update, etc.).
- **auth_user_groups** – Links users to groups for role-based access.
- **auth_user_user_permissions** – Assigns specific permissions to users.

4.2 System and Session Management

- **django_admin_log** – Stores logs of admin panel actions.
- **django_content_type** – Maps permissions to models.
- **django_migrations** – Tracks applied database migrations.
- **django_session** – Stores user session data.

5. Screenshots



