Code to design Math Quiz Game

```python
from flask import Flask, render_template, request, redirect, url_for, session
from flask_sqlalchemy import SQLAlchemy
import random
import hashlib

app = Flask(__name__)
app.config["SQLALCHEMY_DATABASE_URI"] = "sqlite:///math_quiz_game.db"
db = SQLAlchemy(app)
app.secret_key = "math_quiz_game_secret_key"

class User(db.Model):
    id = db.Column(db.Integer, primary_key=True)
    username = db.Column(db.String(64), unique=True, nullable=False)
    email = db.Column(db.String(120), unique=True, nullable=False)
    password = db.Column(db.String(128), nullable=False)

class Quiz(db.Model):
    id = db.Column(db.Integer, primary_key=True)
    type = db.Column(db.String(64), nullable=False)
    difficulty = db.Column(db.String(64), nullable=False)
    question = db.Column(db.String(256), nullable=False)
    answer = db.Column(db.String(128), nullable=False)

class Score(db.Model):
    id = db.Column(db.Integer, primary_key=True)
    user_id = db.Column(db.Integer, db.ForeignKey("user.id"))
```

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    quiz_id = db.Column(db.Integer, db.ForeignKey("quiz.id"))

    score = db.Column(db.Integer, nullable=False)

    timestamp = db.Column(db.DateTime, nullable=False)


@app.route("/")
def index():

    return render_template("index.html")


@app.route("/register", methods=["GET", "POST"])
def register():

    if request.method == "POST":

        username = request.form["username"]

        email = request.form["email"]

        password = request.form["password"]

        hashed_password = hashlib.sha256(password.encode()).hexdigest()

        user = User(username=username, email=email, password=hashed_password)

        db.session.add(user)

        db.session.commit()

        return redirect(url_for("login"))

    return render_template("register.html")


@app.route("/login", methods=["GET", "POST"])
def login():

    if request.method == "POST":

        username = request.form["username"]

        password = request.form["password"]

        hashed_password = hashlib.sha256(password.encode()).hexdigest()

        user = User.query.filter_by(username=username, password=hashed_password).first()

        if user:
```

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        session["user_id"] = user.id
        return redirect(url_for("quiz_list"))
    return render_template("login.html")


@app.route("/quiz_list")
def quiz_list():
    if "user_id" not in session:
        return redirect(url_for("login"))
    quizzes = Quiz.query.all()
    return render_template("quiz_list.html", quizzes=quizzes)


@app.route("/quiz/<int:quiz_id>")
def quiz(quiz_id):
    if "user_id" not in session:
        return redirect(url_for("login"))
    quiz = Quiz.query.get(quiz_id)
    return render_template("quiz.html", quiz=quiz)


@app.route("/submit_answer", methods=["POST"])
def submit_answer():
    if "user_id" not in session:
        return redirect(url_for("login"))
    quiz_id = int(request.form["quiz_id"])
    answer = request.form["answer"]
    quiz = Quiz.query.get(quiz_id)
    if answer == quiz.answer:
        score = 10  # adjust scoring system as needed
    else:
        score = 0
```

```python
        score = Score(user_id=session["user_id"], quiz_id=quiz_id, score=score)
        db.session.add(score)
        db.session.commit()
        return redirect(url_for("quiz_list"))


@app.route("/leaderboard")
def leaderboard():
    scores = Score.query.all()
    leaderboard = []
    for score in scores:
        user = User.query.get(score.user_id)
        leaderboard.append({"username": user.username, "score": score.score})
    leaderboard.sort(key=lambda x: x["score"], reverse=True)
    return render_template("leaderboard.html", leaderboard=leaderboard)


@app.route("/profile")
def profile():
    if "user_id" not in session:
        return redirect(url_for("login"))
    user = User.query.get(session["user_id"])
    scores = Score.query.filter_by(user_id=session["user_id"]).all()
    return render_template("profile.html", user=user, scores=scores)


if __name__ == "__main__":
    app.run(debug=True)
```

templates/index.html

```html
<!DOCTYPE html>
<html>
```

```
<head>
    <title>Math Quiz Game</title>
</head>
<body>
    <h1>Math Quiz Game</h1>
    <p>Welcome to the Math Quiz Game!</p>
    <p><a href="{{ url_for('register') }}">Register</a> or <a href="{{ url_for('login') }}">Login</a> to start playing!</p>
</body>
</html>
```

You can find my document here

index.html

- Register
- Login
- Leaderboard

Register

Username: [ ]

Email: [ ]

Password: [ ]

[Register]

Login

Username: [ ]

Password: [ ]

[Login]

Select a Quiz

- Addition Quiz
- Subtraction Quiz
- Multiplication Quiz
- Division Quiz
- Algebra Quiz
- Geometry Quiz

Quiz Interface

12 | Submit

Score: 0

Remaining Time: 10 minutes

Leaderboard

User Profile

Update Profile