Department of Computer Engineering
PILLAI COLLEGE OF ENGINEERING
(AUTONOMOUS)

Python Programming Mini Project (III SEM)
Presented by

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Category : Python

Project Title : **Offline Quiz Application**

Abstract : A Quiz Application that enables users to test their knowledge through interactive quizzes across various categories. It features dynamic question generation, instant scoring, and performance tracking to enhance learning engagement and retention. Ideal for both educational and entertainment purposes.

Proposed Solution

Problem

- Low user engagement in traditional quiz platforms.
- Lack of real-time feedback and performance tracking.

Proposed Solution

- Add interactive and gamified quiz features to enhance engagement.
- Provide instant feedback and detailed performance analytics.

Core Features

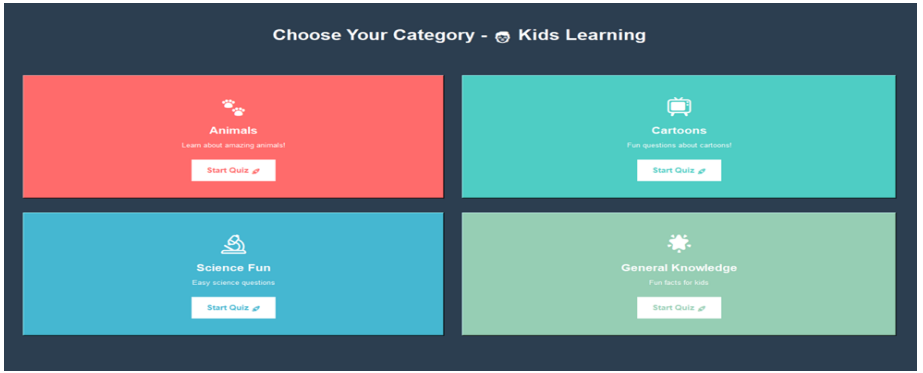
- Dynamic Quizzes: Multiple categories and difficulty levels with randomized questions.
- Real-Time Scoring: Instant feedback and score display after each quiz.
- Progress Tracking: User performance history and leaderboard rankings.

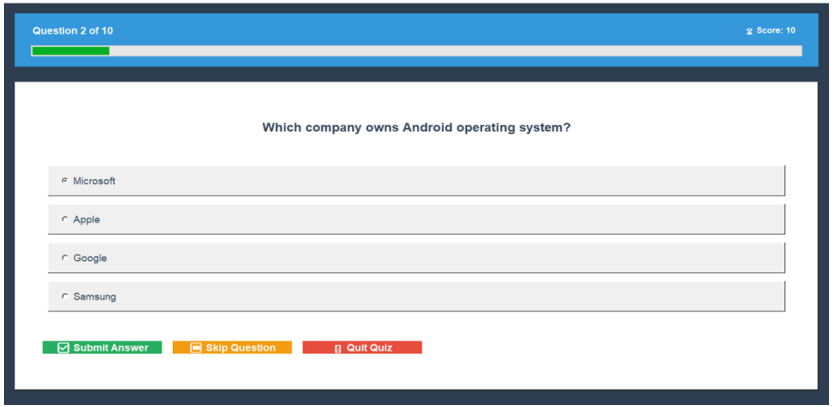
Impactfeedback, multi-modal interactions

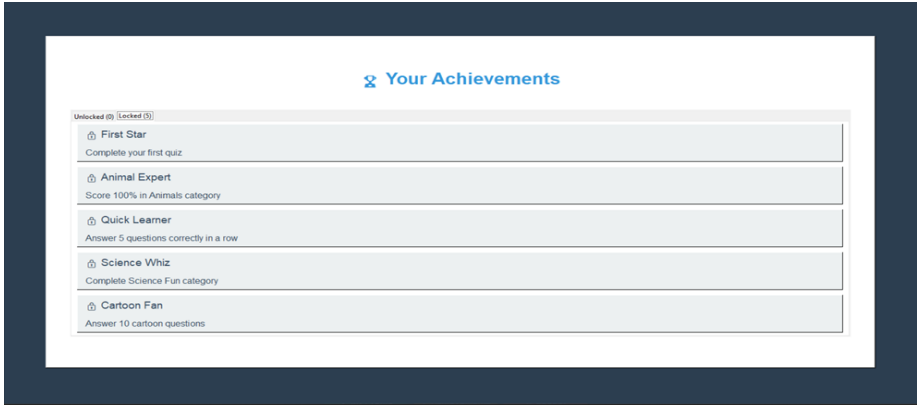
- Impact Feedback**:** Provides instant, personalized feedback to enhance learning and motivate users to improve.
- Multi-Modal Interactions**:** Supports text, images, audio, and video-based questions for a more engaging and immersive quiz experience.

Interface

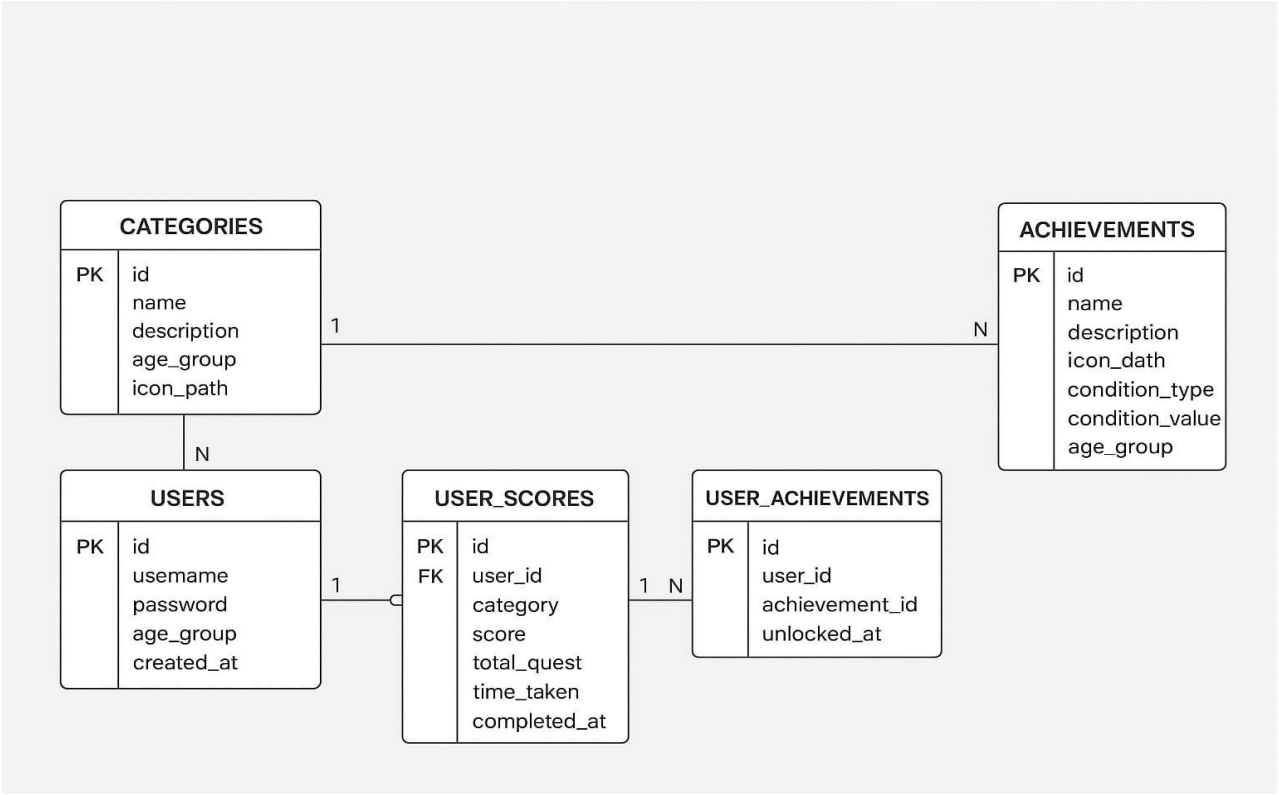

Choose Your Adventure
Select the perfect learning experience for you
KIDS MODE
Ages 8-12
• Fun & Educational
• Colorful Interface
• Easy Questions
Start Learning
ADULT MODE
Age 13+
• Challenging Questions
• Professional Topics
• Current Affairs
Start Quiz
My Profile
Achievements
Logout


Choose Your Category - Kids Learning
Animals
Learn about amazing animals!
Start Quiz
Cartoons
Fun questions about cartoons!
Start Quiz
Science Fun
Easy science questions
Start Quiz
General Knowledge
Fun facts for kids
Start Quiz


Question 2 of 10
Score: 10
Which company owns Android operating system?
Microsoft
Apple
Google
Samsung
Submit Answer
Skip Question
Quit Quiz


Your Achievements
Unlocked (0)
Locked (5)
First Star
Complete your first quiz
Animal Expert
Score 100% in Animals category
Quick Learner
Answer 5 questions correctly in a row
Science Whiz
Complete Science Fun category
Cartoon Fan
Answer 10 cartoon questions

ER Diagram


CATEGORIES
PK
id
name
description
age_group
icon_path
ACHIEVEMENTS
PK
id
name
description
icon_dath
condition_type
condition_value
age_group
1
N
N
USERS
PK
id
usemame
password
age_group
created_at
USER_SCORES
PK
id
FK
user_id
category
score
total_quest
time_taken
completed_at
USER_ACHIEVEMENTS
PK
id
user_id
achievement_id
unlocked_at
1
1
N

Innovation and Unique Functionality

- Interactive and gamified quiz interface.
- Real-time scoring and feedback system.
- AI-based question generation and difficulty adjustment.
- Personalized quiz recommendations.
- Offline quiz mode support.
- Social sharing and friend challenges.
- Detailed performance analytics and insights.
- Multi-modal questions (text, image, audio, video).
- Timer-based challenges for competitive play.
- Leaderboards and achievement badges.
- Adaptive learning paths based on user progress.
- Secure user authentication and data storage.

Technical Details

Technical Highlights

- Operating System: Windows 10 / 11
- Programming Language: Python 3.x
- Framework: Tkinter or Flask (depending on UI type)
- Libraries: Tkinter / Flask, Pandas, Random, JSON, SQLite
- Database: SQLite or CSV file
- IDE: Visual Studio Code or PyCharm
- Processor: Intel i3 or above
- RAM: Minimum 4 GB
- Storage: 250 GB or more
- Display: 1366×768 resolution