



# Human Computer Interaction

Year 02 Semester 01

## Assignment 02

### Mobile Application (LearnQuick)

#### Group Details:

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# Introduction

LearnQuick is a smartphone application that makes it easier to create and respond to multiple-choice questions (MCQs) on a variety of subjects. A three-person team worked together to develop the software, which provides users with an interactive platform to improve their knowledge. LearnQuick allows users to safely register and log in before entering a topic of their choosing. The application creates five multiple-choice questions (MCQs) on the chosen subject by using the Open Trivia API. These questions can be answered by users, and the results are saved for viewing on the Results page. For safe user administration and effective data storage, the application makes use of Firebase services, such as Firebase Authentication, Realtime Database, and associated APIs, guaranteeing a smooth and intuitive user experience.



# Background

The increasing focus on digital learning has made interactive technologies indispensable for improving the educational process. Finding interesting and difficult topic-specific practice questions is a problem for many students and learners. Because traditional approaches frequently lack the adaptability to meet the unique learning demands of each student, personalized education is becoming more and more important. Understanding these difficulties, contemporary technologies such as cloud-based solutions and APIs offer chances to develop creative educational tools. By providing an easy-to-use, topic-focused, and effective method for users to practice and monitor their learning progress, LearnQuick seeks to overcome these issues.

## Overview

LearnQuick is a smartphone application that creates multiple-choice questions (MCQs) based on certain topics and offers users an interactive learning environment. Using Firebase Authentication, the app allows users to safely register and log in. After logging in, users can utilize the Open Trivia API to create five related multiple-choice questions based on a topic of interest. Users can respond to these questions within the app, and the results are kept in a special Results page that is controlled by a Firebase Realtime Database. LearnQuick supports individualized learning and guarantees a flawless user experience through the seamless integration of cloud technologies and APIs.

# Individual Contribution

## 1. V.Lambodaran (SA23522060)

- ResultActivity.java
- activity\_results.xml
  - ✓ Implemented the functionality for displaying the results after the user submits their answers. This includes the user interface (UI) elements for showing scores and correct/incorrect responses.
- SignUpActivity.java
- Activity\_signup.xml
  - ✓ Developed the user registration functionality, where users can enter their email, username, and password. Integrated the Firebase Authentication API to securely create new user accounts.

## **2. U.Anojan (SA23523128)**

- HomeActivity.java
  - ResultAdapter.java
  - activity\_home.xml
- ✓ Developed the main functionality of the application where users can input a topic and generate five multiple-choice questions (MCQs) based on the selected topic using the Open Trivia API.
- activity\_profile.xml
- ✓ Designed the profile page layout where users can view their information and learning progress, such as completed topics and results.

## **3. R.Abishan (SA23522138)**

- LoginActivity.java
  - activity\_login.xml
  - activity\_result\_adapter.xml
- ✓ Created the login functionality, allowing users to securely log into the app using their credentials via Firebase Authentication.
- ProfileActivity.java
- ✓ Implemented the backend logic for the profile page, fetching and displaying the user's profile information and stored results.

# Instructions for Using LearnQuick Application

## ✓ **Launch the Application**

- Open the LearnQuick app on the Android device or emulator.

## ✓ **User Registration**

- Upon first launch, you will be prompted to sign up (if you do not have an existing account).
- Upon successful registration, you will be automatically redirected to the LoginActivity screen.

## ✓ **User Login**

- If you already have an account, click the Login option on the welcome screen to access the LoginActivity.
- After successful login, you will be redirected to the HomeActivity screen.

## ✓ **Generating Questions**

- In the HomeActivity, you will see a text field where you can enter a topic.
- The app will retrieve 5 multiple-choice questions related to the entered topic from the Open Trivia API.

✓ **Answering Questions**

- Once the questions are displayed, choose the answer for each question.
- After answering all five questions, click the Submit button to submit your answers.

✓ **Viewing Results**

- After submitting the answers, the app will calculate your score based on the correct answers and display the result on the ResultActivity screen.

✓ **Data Storage**

- Your results will be stored in the Firebase Realtime Database. The app tracks your scores and updates your profile with the latest results.

✓ **Accessing Profile**

- You can view your profile and past results through the ProfileActivity.

