

**Quiz Learning Game Mobile Application  
Final Report**

**CSC264  
Introduction to Web and Mobile Application**

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**GROUP: CDCS1104C**

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# **1. INTRODUCTION**

## **1.1 Introduction to Project**

In today's fast-paced digital world, mobile applications have become an integral part of our daily lives, offering convenience, accessibility, and entertainment at our fingertips. The Quiz Learning Game Mobile Application project aims to create an engaging and educational platform that allows users to test their knowledge across various subjects and compete with friends and other users worldwide. This project combines learning, competition, and social interaction to create a unique and enjoyable user experience.

The primary goal of the Quiz Learning Game Mobile Application is to provide users with an interactive and user-friendly interface where they can participate in quizzes on topics such as Mathematics, Programming, and Basic English. This mobile application is designed to cater to users of all ages and interests, promoting continuous learning and intellectual growth.

Key features of the Quiz Learning Game Mobile Application include user registration for new users. Upon registration, users need to log in first to access the questions from each subject. Users can update their account information for future updates and provide feedback about the app, helping developers improve its quality over time.

The app will be developed using modern mobile development frameworks, specifically MIT App Inventor 2, to ensure compatibility across both iOS and Android platforms. It will leverage cloud-based services for data storage and synchronization, providing a seamless and consistent experience for users regardless of their device. The backend architecture will be designed to handle large volumes of data and concurrent users, ensuring scalability and reliability as the user base grows.

## **1.2 Problem Statement**

In today's world, where information is just a click away, there's a growing need for platforms that not only entertain but also support continuous learning and intellectual growth. Traditional educational methods often can't keep up with modern learners who crave engaging, interactive, and flexible ways to learn. Many current educational tools miss the mark by not blending competition and social interaction, which are key to keeping users engaged and motivated. As a result, there's a significant gap in the market for a solution that combines learning with fun, competition, and social interaction.

Moreover, traditional paper-based quizzes have several significant downsides. They're expensive due to the costs of printing, distributing, and managing physical materials. This method also harms the environment, as using paper contributes to deforestation and increased waste. Manual quizzes can't offer the dynamic and interactive features of digital platforms, like real-time feedback and comprehensive progress tracking. Participants don't get immediate insights into their performance, making it harder to identify their strengths and areas for improvement. This makes the learning experience less engaging and effective compared to what a well-designed digital solution can offer.

The Quiz Learning Game Mobile Application project aims to tackle these challenges by creating an innovative platform that combines educational content with engaging gameplay, competition, and social features. By offering a wide range of quiz topics like a, Programming, and Basic English, the app caters to users of all ages and interests. Its intuitive, user-friendly interface ensures easy navigation and a positive user experience, while features like real-time leaderboards and user feedback keep users motivated and involved. The app is built using modern development frameworks and cloud-based services, ensuring it is scalable, reliable, and compatible across multiple devices. This bridges the gap between traditional learning methods and the needs of today's learners.

### **1.3 Objectives**

- Enhance user engagement and learning by developing an interactive and user-friendly platform that encourages continuous learning and intellectual growth through a variety of quiz topics.
- Ensure scalability and reliability by creating a robust backend architecture capable of handling large volumes of data and a growing number of concurrent users.
- Leverage modern development technologies by utilizing modern mobile development frameworks for data storage and synchronization.

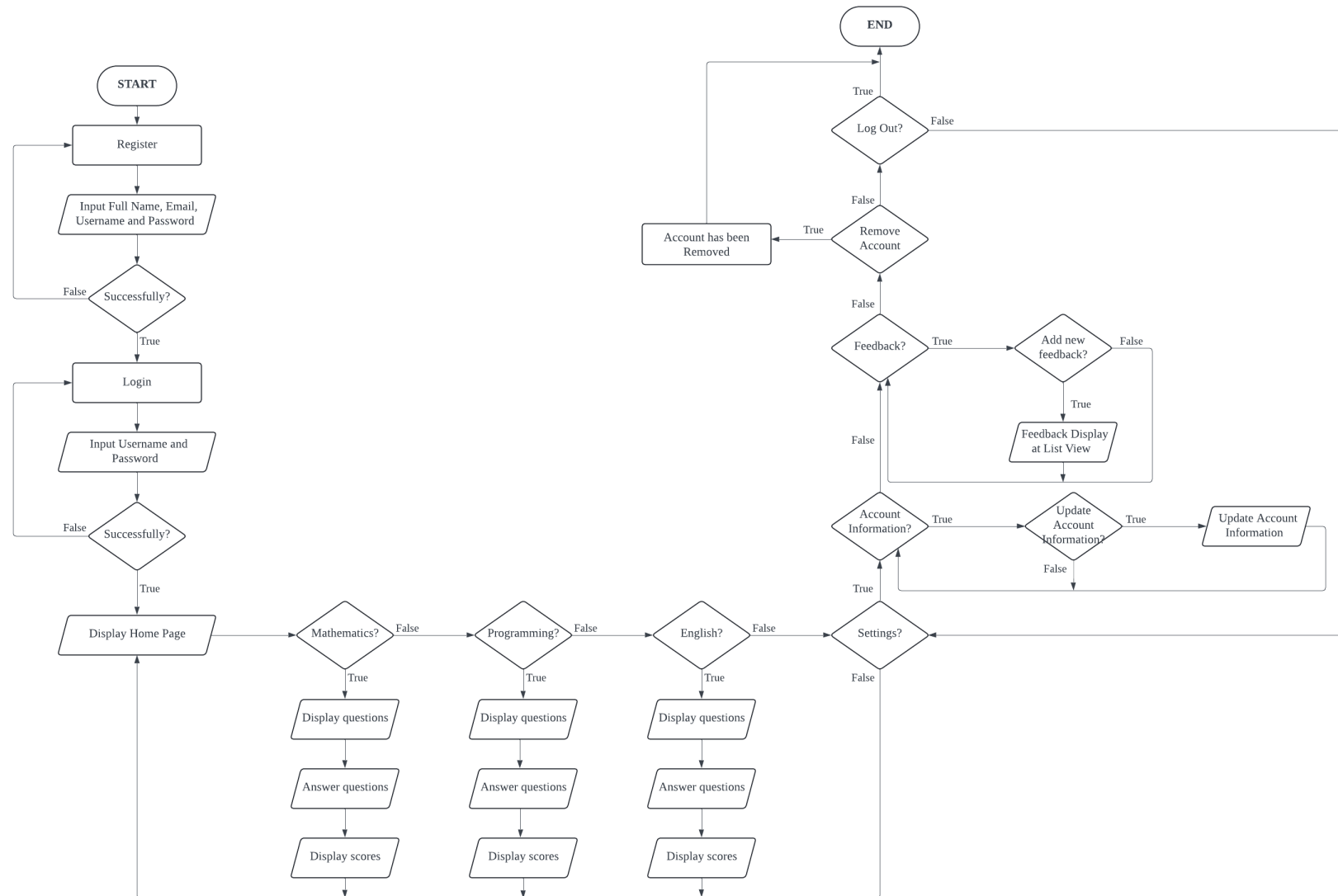
### **1.4 Scope**

For this project, the primary focus is on the users. New users need to register an account first and log in to the system to access the application. Once logged in, users can choose the type of quiz subject they want to attempt, update their account information, add feedback, and delete feedback.

### **1.5 Significant of Mobile Application towards Audience**

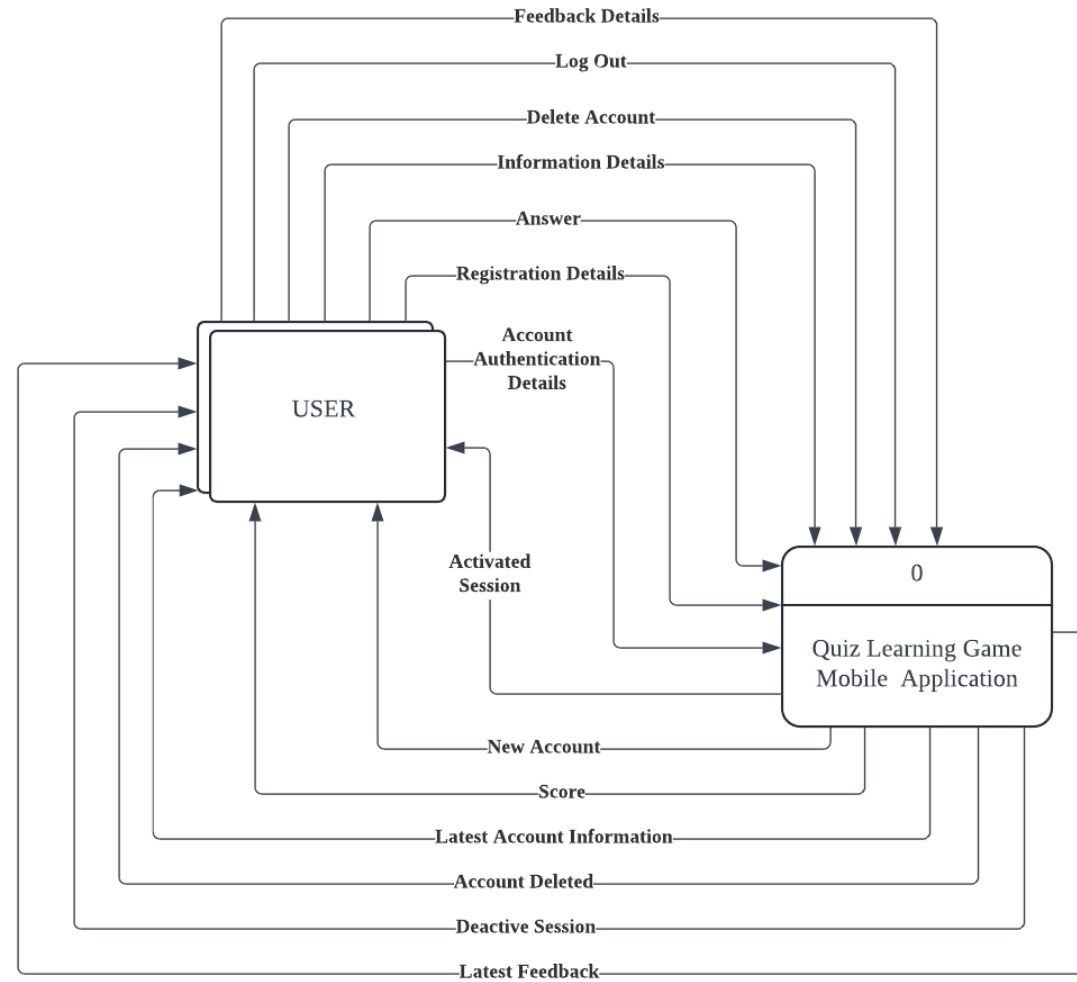
- Mobile applications provide users with easy and immediate access to information and services. Whether it's educational content, entertainment, or utility apps, users can engage with the app anytime and anywhere, making their lives more convenient and efficient.
- Mobile apps often offer personalized experiences based on user preferences, behaviour, and feedback. This customization enhances user satisfaction and engagement by delivering content and features that are tailored to individual needs and interests.
- Educational and informational apps provide users with opportunities for continuous learning and skill development. By offering interactive content, quizzes, and real-time feedback, mobile apps help users to expand their knowledge and improve their competencies in various fields.

## 2. FLOWCHART

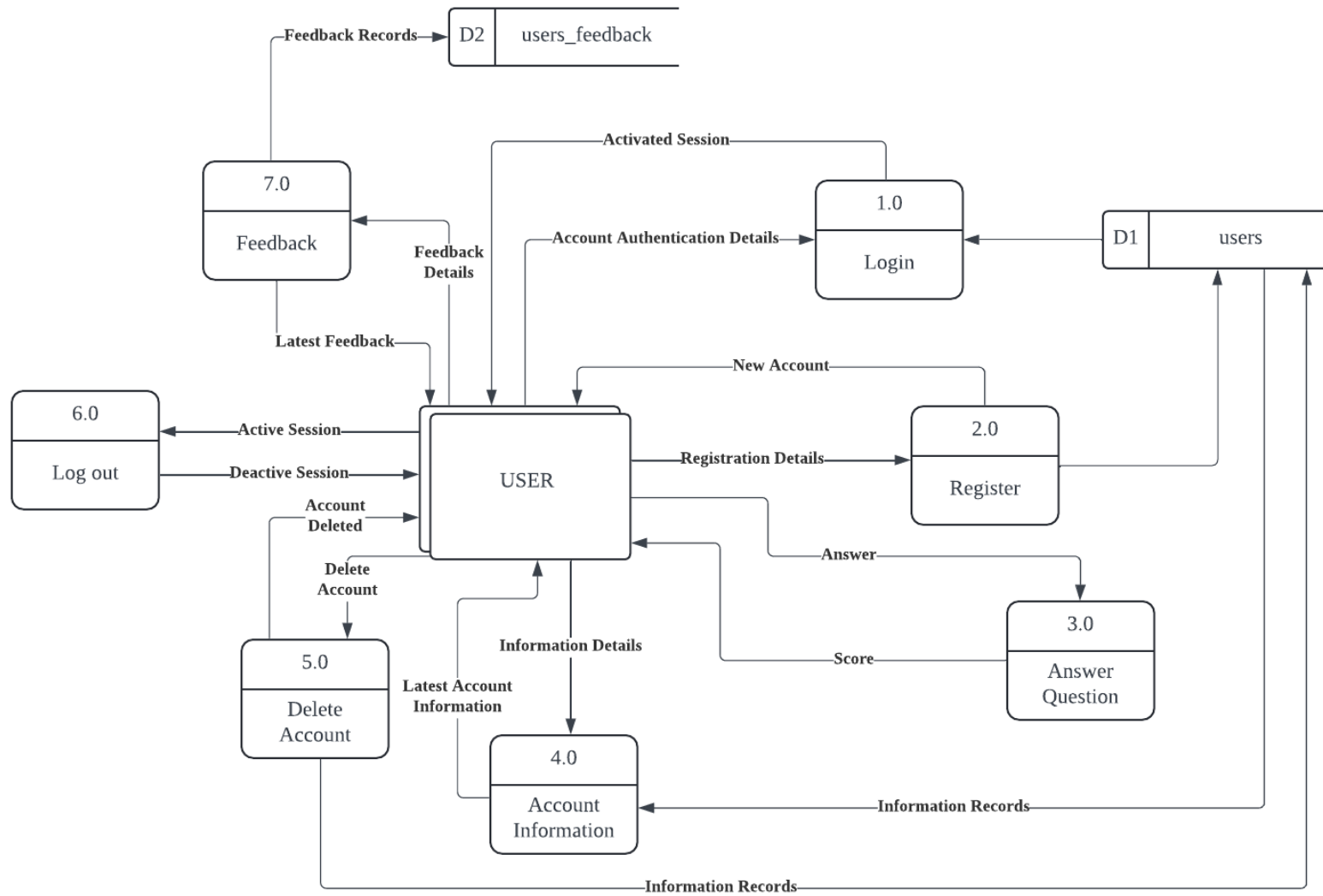


### 3. FUNCTION REQUIREMENTS (DFD)

#### 3.1 Level 0



### 3.2 Level 1

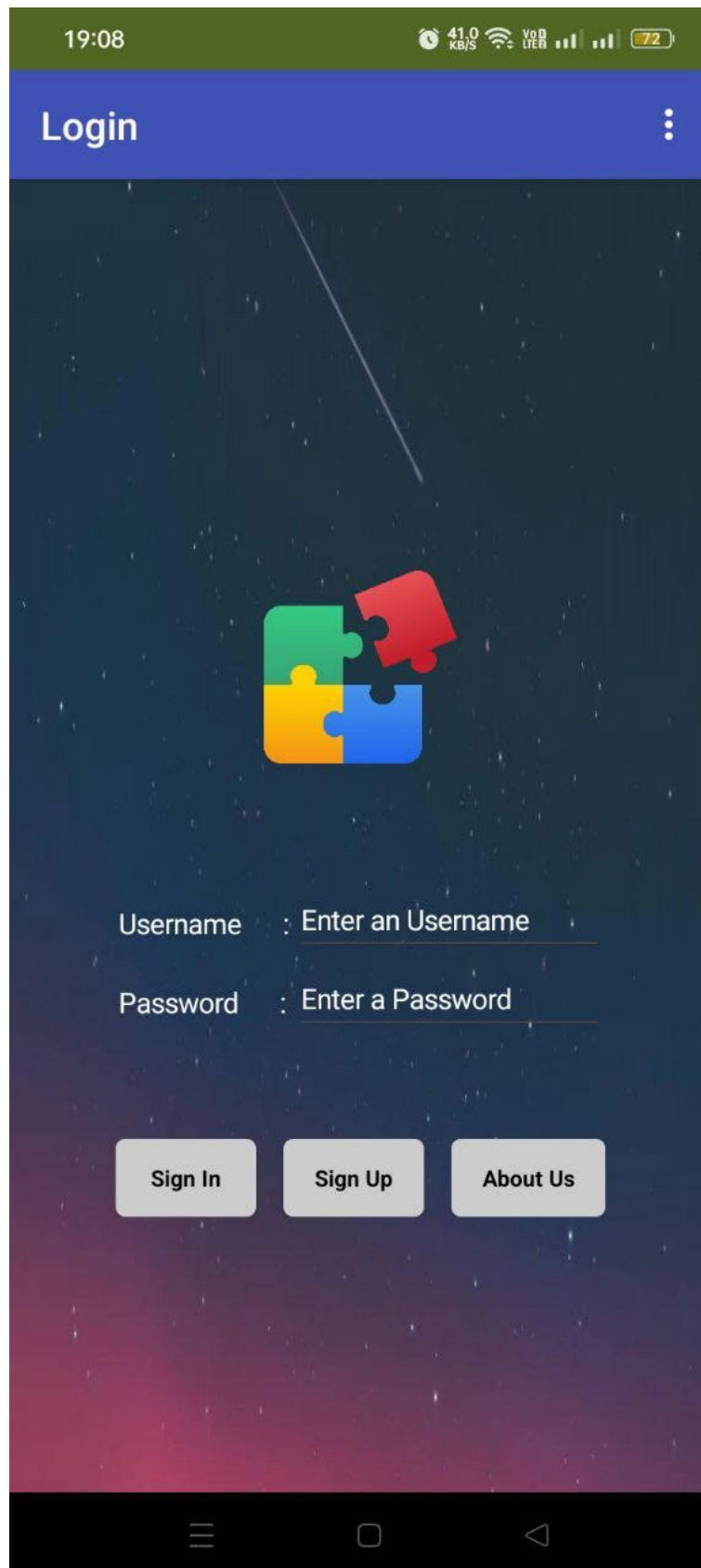




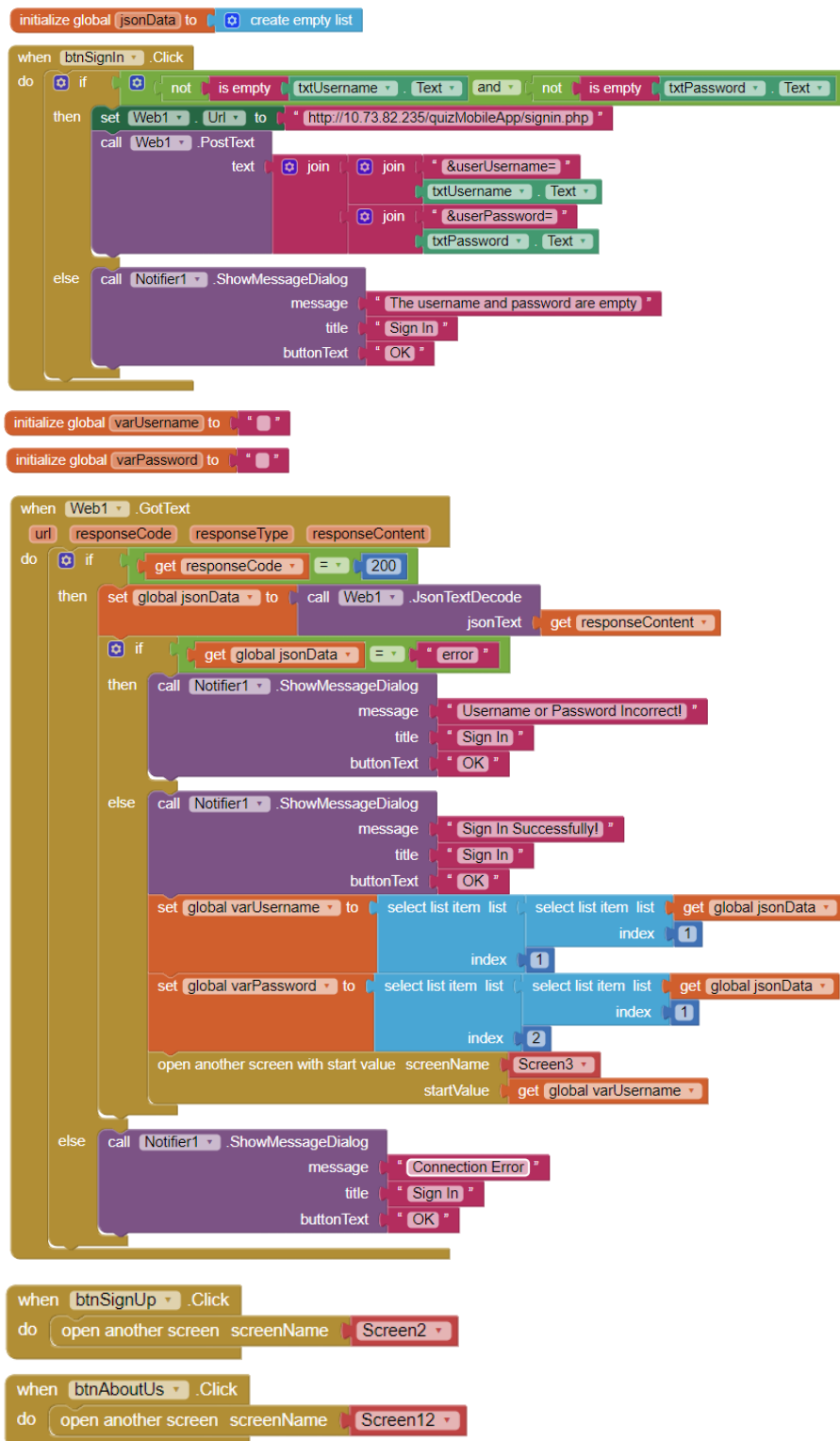
## 4. INTERFACES AND BLOCK OF CODES

### 4.1 Sign In

#### 4.1.1 Interface

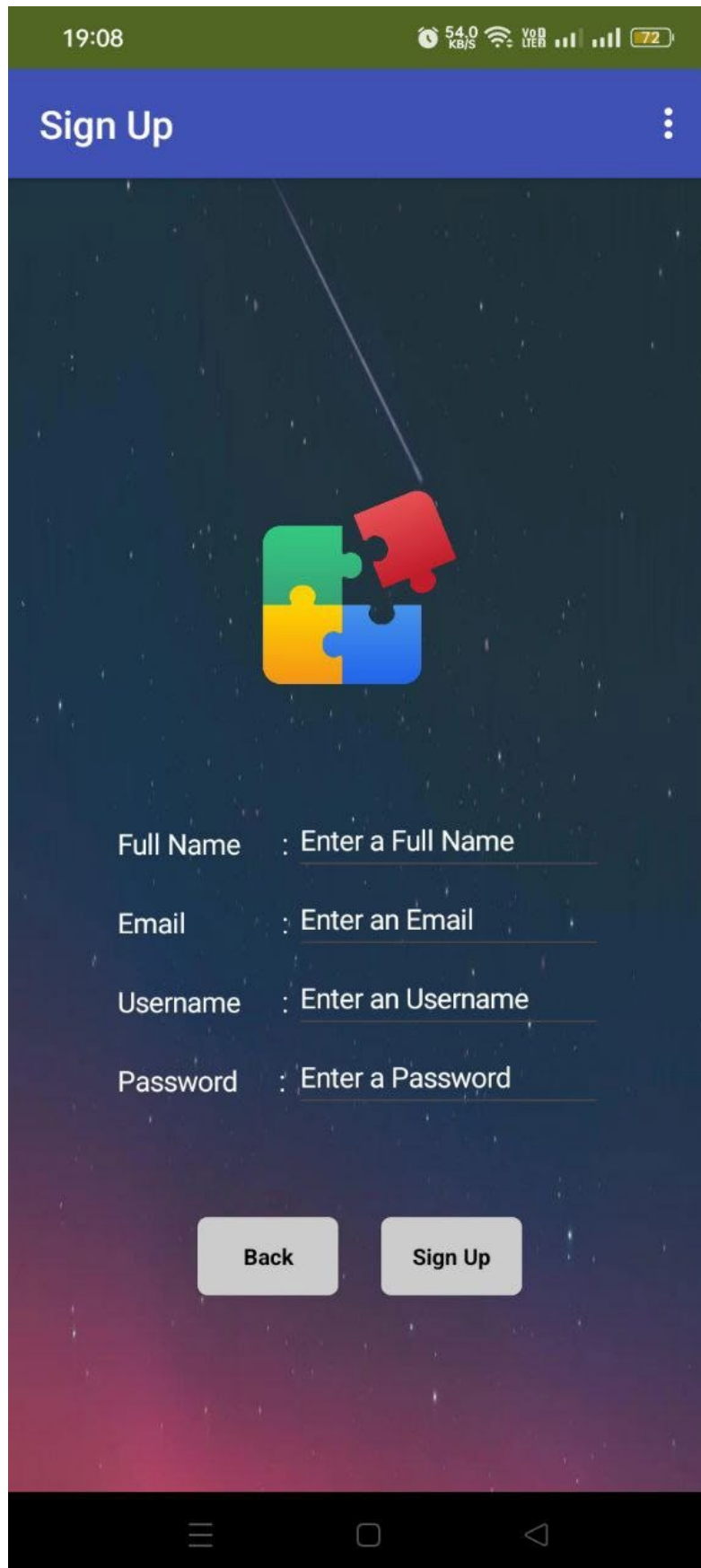


### 4.1.2 Block of Codes



## 4.2 Sign Up

### 4.2.1 Interface

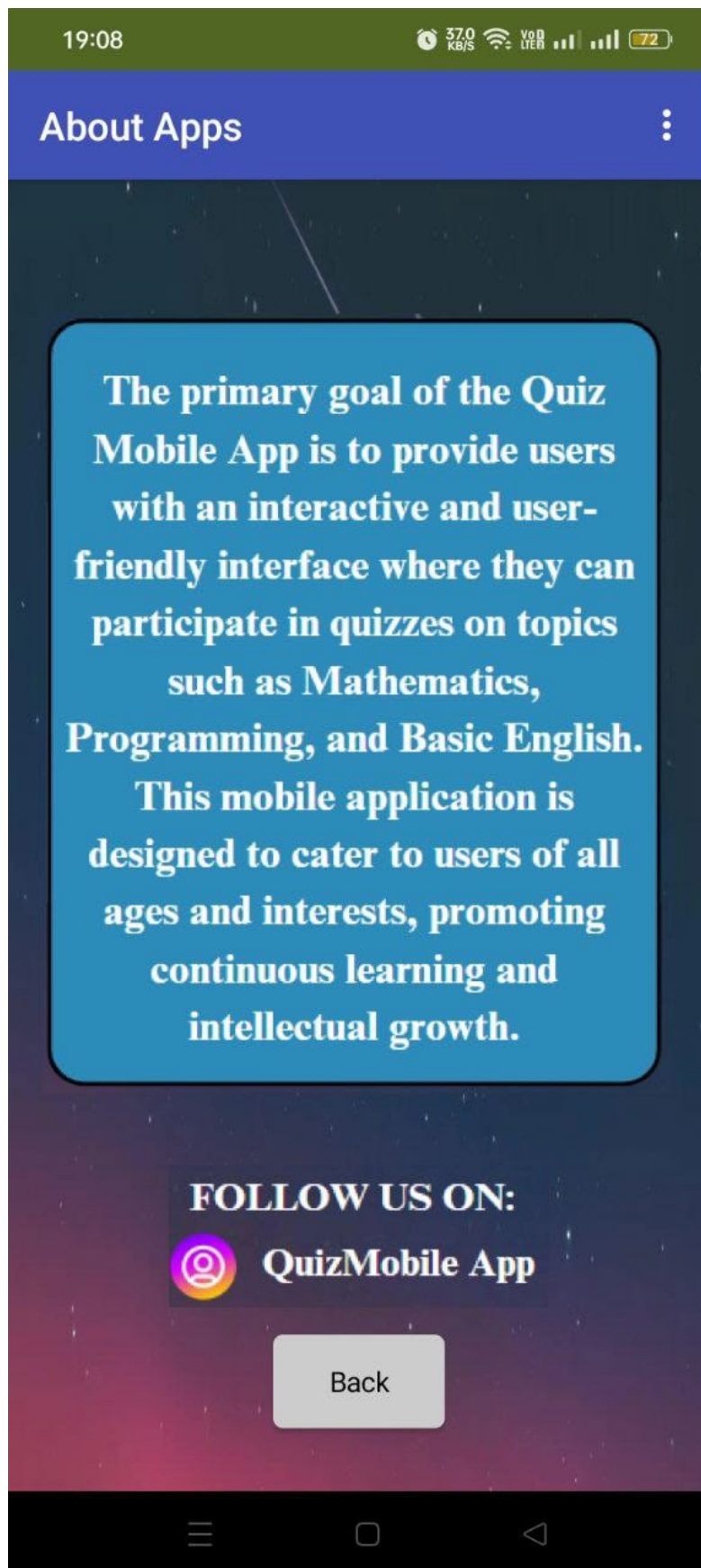
A screenshot of a mobile application's 'Sign Up' screen. The screen has a dark blue header with the title 'Sign Up' and a three-dot menu icon. The background is a dark, starry space with a colorful puzzle graphic in the center. The puzzle consists of four pieces: green, red, yellow, and blue. Below the puzzle, there are four input fields with labels and placeholder text: 'Full Name : Enter a Full Name', 'Email : Enter an Email', 'Username : Enter an Username', and 'Password : Enter a Password'. At the bottom, there are two buttons: 'Back' and 'Sign Up'. The status bar at the top shows the time '19:08', network speed '54.0 KB/S', VoD LTER, signal strength, and battery level '72'.

## 4.2.2 Block of Codes

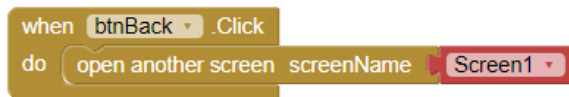


## 4.3 About Apps

### 4.3.1 Interface

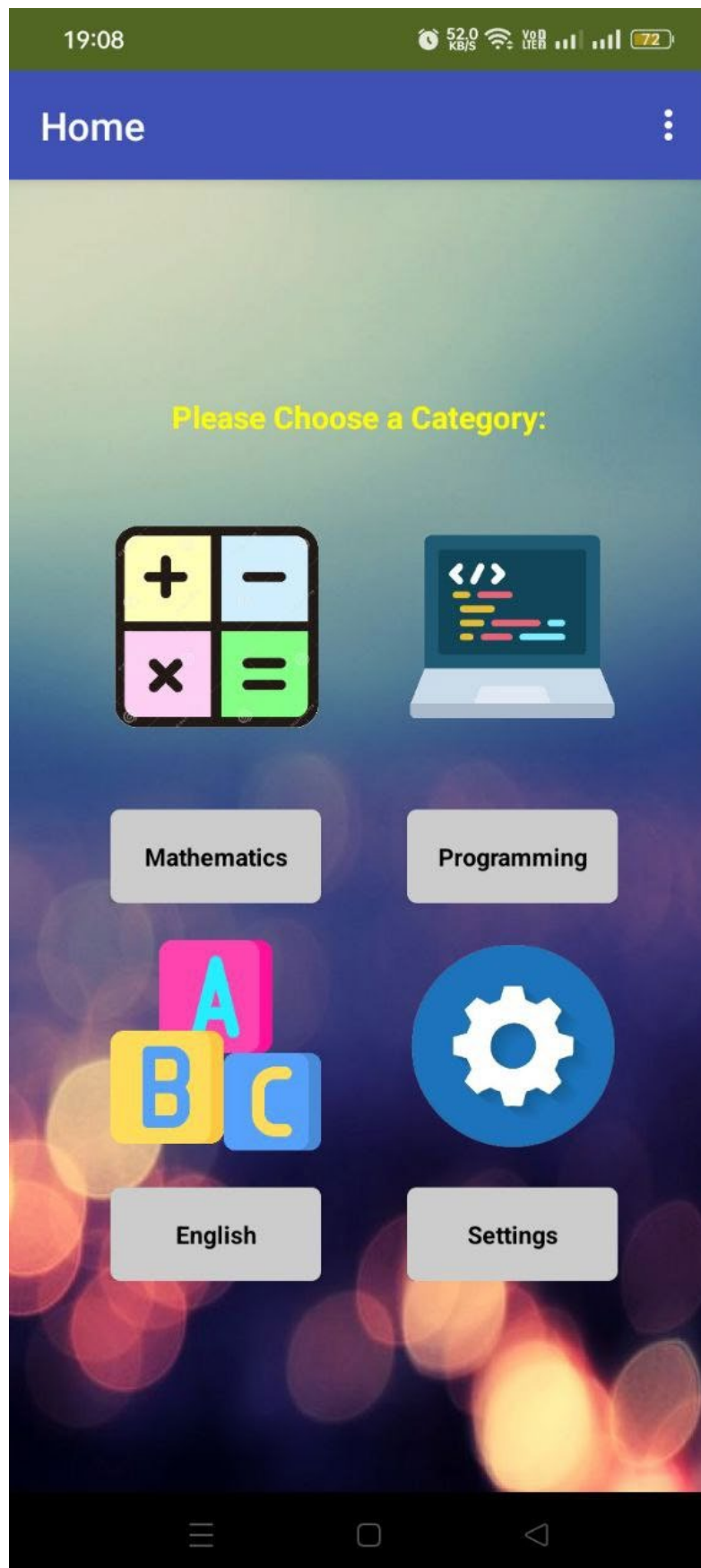


### 4.3.2 Block of Codes

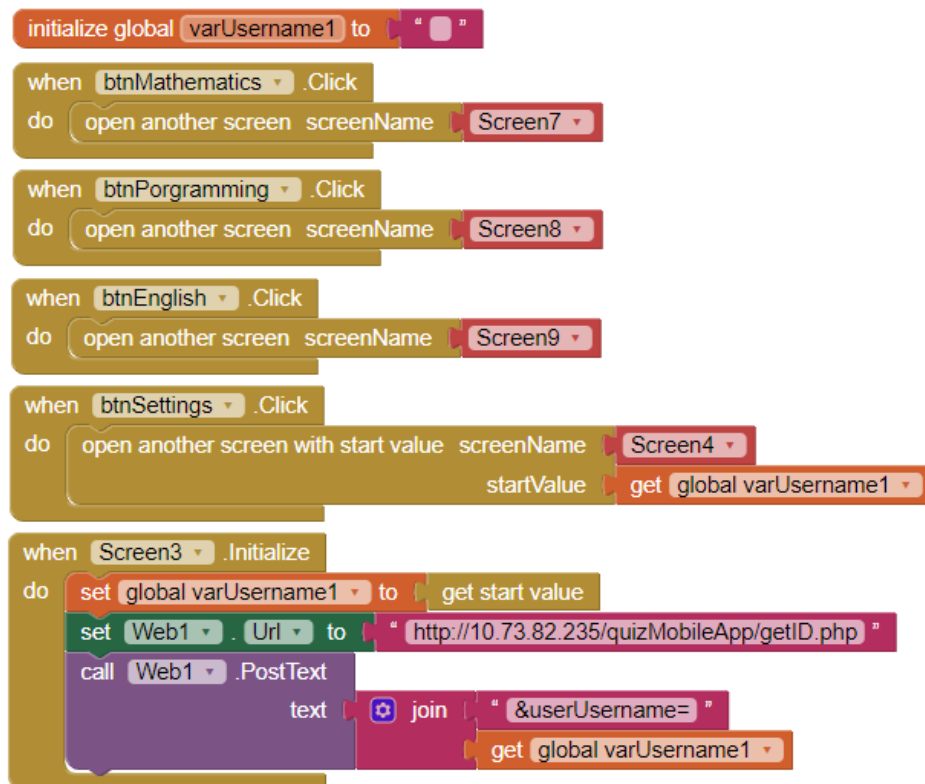


## 4.4 Home

### 4.4.1 Interface



#### 4.4.2 Block of Codes





## 4.5 Mathematics Quiz

### 4.5.1 Interface

19:08 57.0 KB/S VoLTE Wi-Fi 72%

## Mathematics Quiz

Answer all questions correctly.

1. Given  $2a = 4$ . Find value of  $a$ .

Answer Question 1

2. Given  $3b - 3 = 12$ . Find value of  $b$ .

Answer Question 2

3. Given  $40c + 20 = 60$ . Find the value of  $c$ .

Answer Question 3

4. Given  $100d \times 2 = 1000$ . Find value of  $d$ .

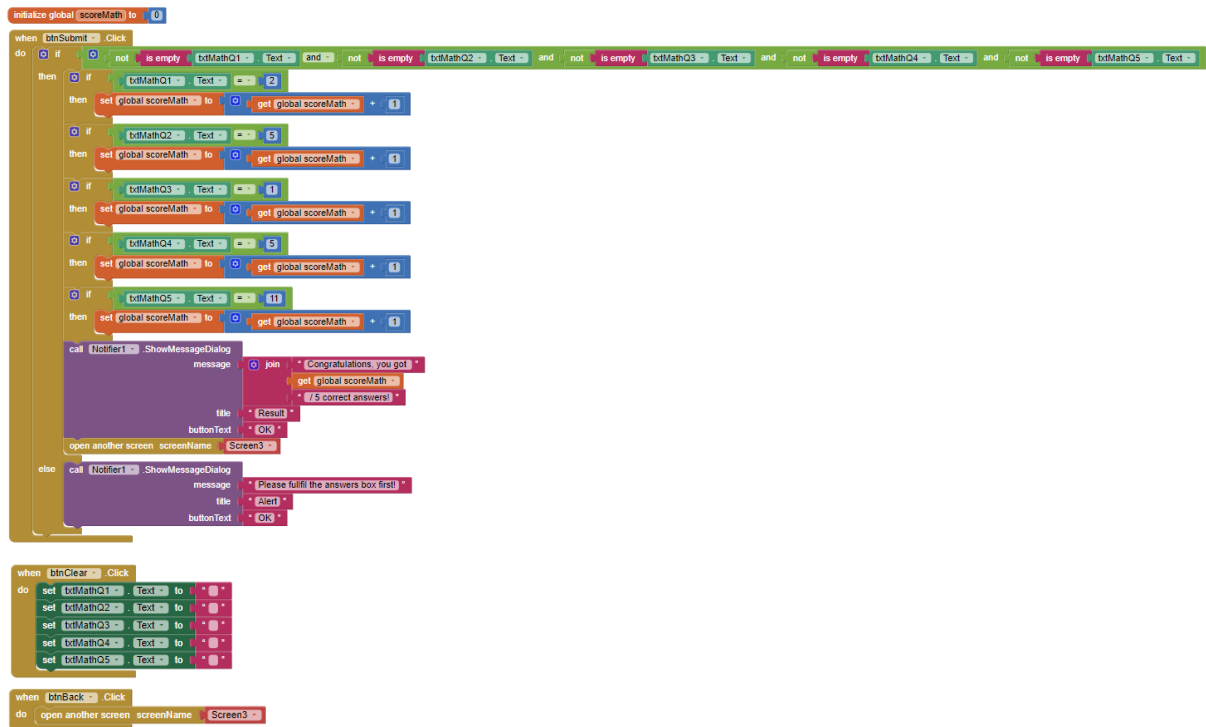
Answer Question 4

5. Given  $a = 1$  and  $b = 3$  for  $10a + 4b / 2 = x$ . Find value of  $x$ .

Answer Question 5

Back Submit Clear

## 4.5.2 Block of Codes



## 4.6 Programming Quiz

### 4.6.1 Interface

19:09

69.0 Kbps

Programming Quiz

⋮

Answer all questions correctly.

1.

What is the output for the following C++ program segment below given that qty is 10?

```
while (qty < 100)
{
    qty += 10;
}
cout<< qty * 2;
```

Answer Question 1

2.

Determine the last value of variable total from the given program segment.

```
int total = 0;
if (total != 0)
    total = total + 2;
    total = total + 5;
```

Answer Question 2

3.

Given the declaration of variables a and b. Compute the output for total.

```
int a = 7;
int b = 9;
int total = 0;
total = a / b * b;
```

Answer Question 3

4.

Trace the following C++ program segment. Determine the final value of sum.

```
void func(int, int&);

int main()
{
    int x = 20, sum = 100;
    func(x, sum);
    cout << sum;
}

void func(int num, int& total)
{
    total = total + num;
}
```

Answer Question 4

5.

What is the output for the following C++ program segment?

```
float hours = 45.0, rate = 10.0, wages;

if (hours > 40.0)
    wages = 40.0 * rate + 1.5 * rate * (hours - 40.0);
else
    wages = hours * rate;

cout << "The wages is RM " << wages << endl;
```

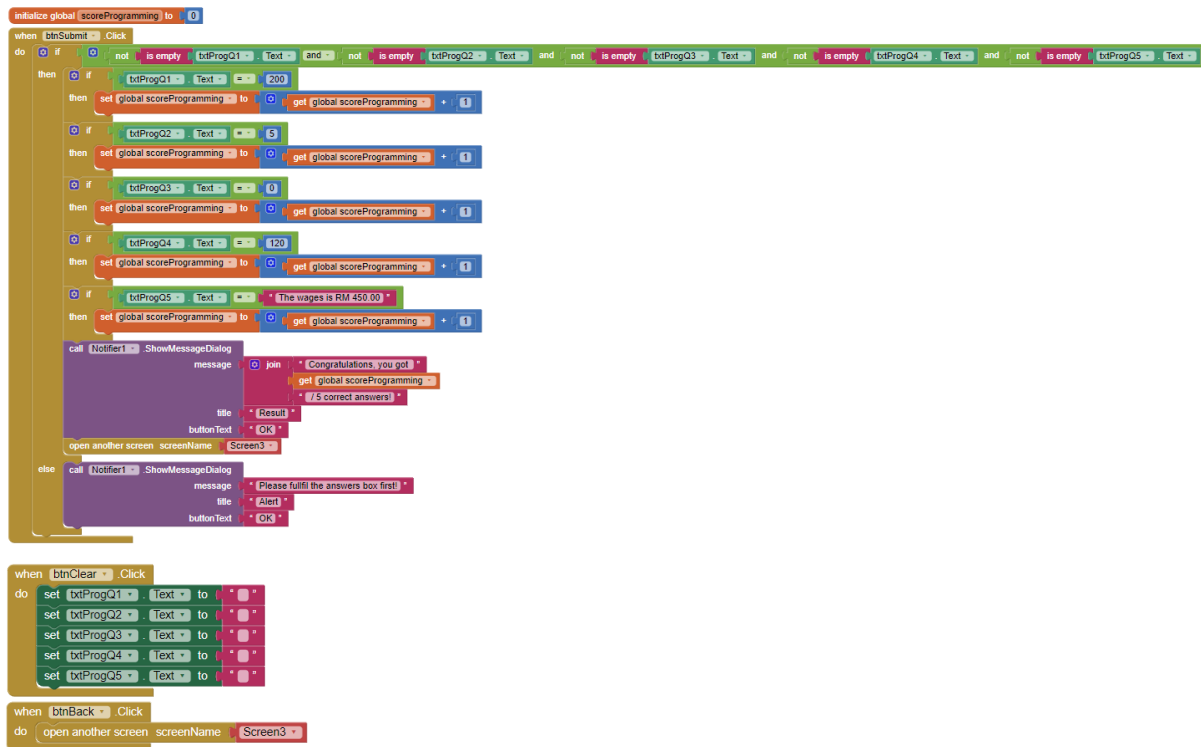
Answer Question 5

Back

Submit

Clear

## 4.6.2 Block of Codes



## 4.7 English Quiz

### 4.7.1 Interface

19:09 64.0 KB/S VoD WEB

## English Quiz

Answer all questions correctly. Please use small letter to avoid case sensitivity:

1. Each of the players \_\_\_\_ responsible for their own equipment. (is / are)

Answer Question 1

2. Identifying the error and re-write the sentences. "she ran quick to catch the bus."

Answer Question 2

3. Neither of the girls has finished \_\_\_\_ homework. (her / their)

Answer Question 3

4. She is \_\_\_\_ university professor. (a / the)

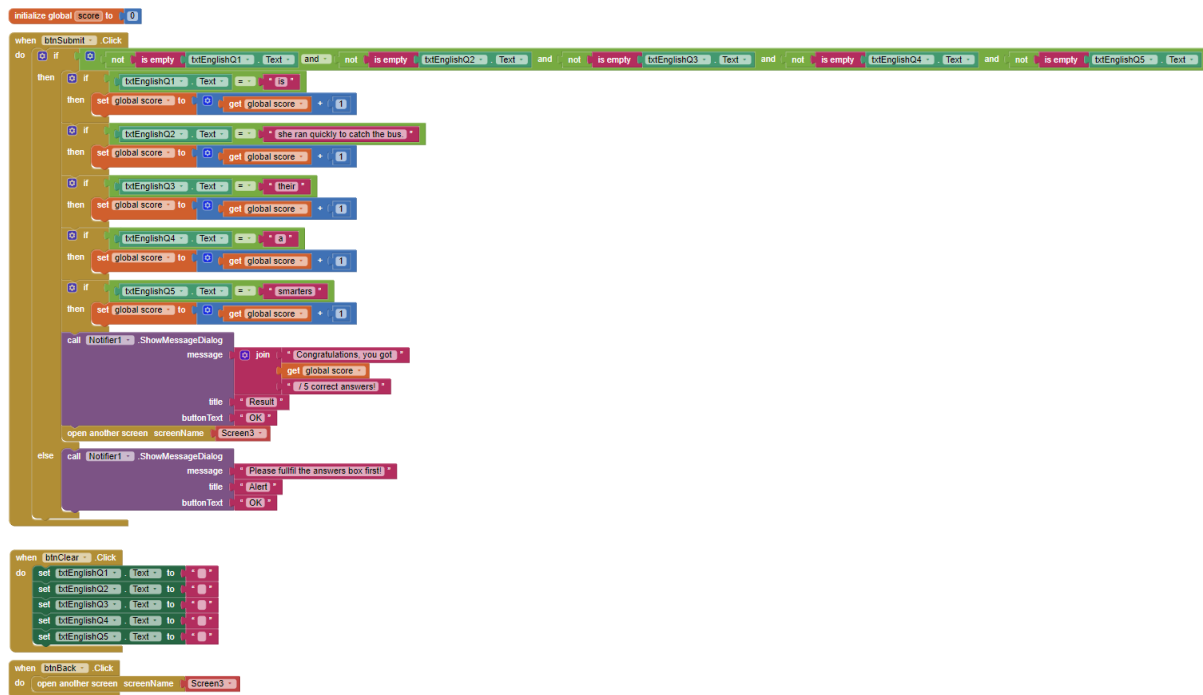
Answer Question 4

5. Of the three, Sam is the \_\_\_\_\_. (smarter / smarters)

Answer Question 5

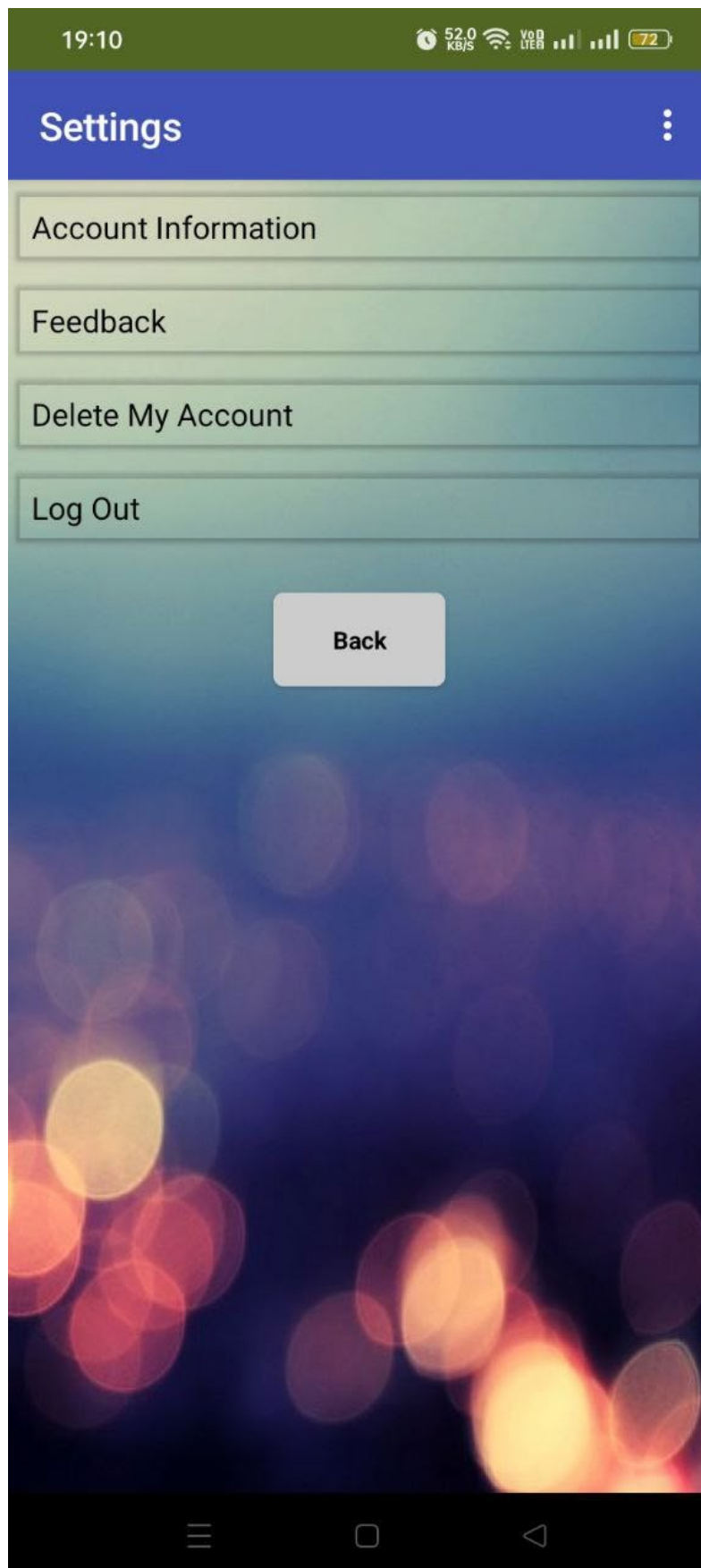
Back Submit Clear

## 4.7.2 Block of Codes

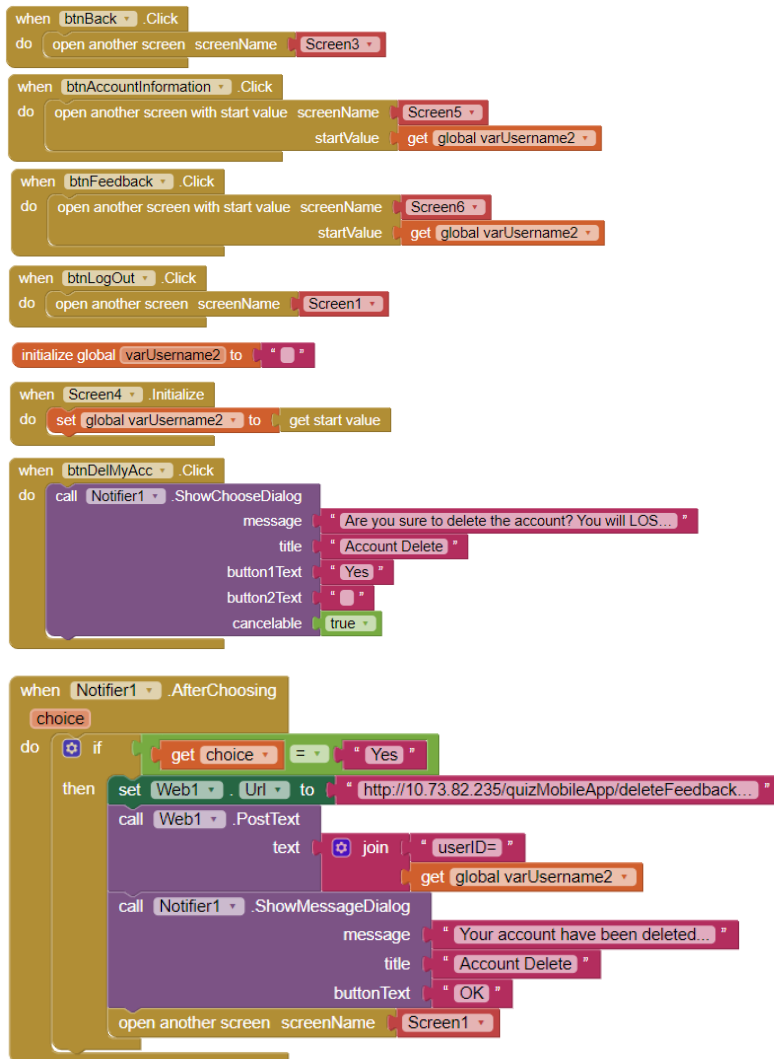


## 4.8 Settings

### 4.8.1 Interface



## 4.8.2 Block of Codes





## 4.9 Account Information

### 4.9.1 Interface

19:11 61.0 KB/S VoD LTE-R 72

## Account Information

Please fulfil the requirements form:

User ID : 1

Address : No.1 Jalan Kedah Lama

Postcode : 39568

State : Kedah

Phone : 0123343344

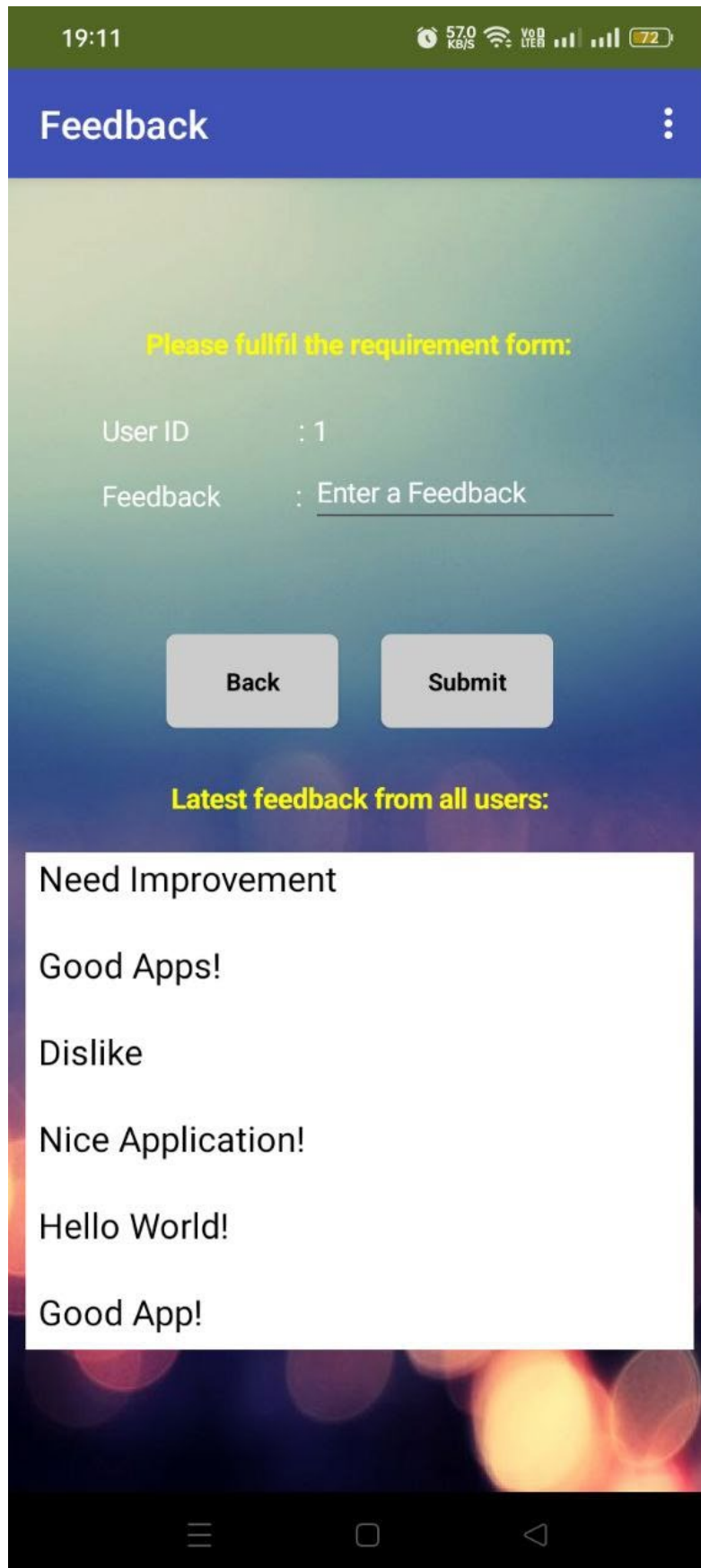
Back Update Clear

## 4.9.2 Block of Codes



## 4.10 Feedback

### 4.10.1 Interface



The screenshot shows a mobile application interface for providing feedback. At the top, a status bar displays the time 19:11, network speed 57.0 KB/S, and battery level 72%. The app's title bar is blue with the word "Feedback" and a three-dot menu icon. The main content area has a blue gradient background. A yellow text prompt "Please fulfil the requirement form:" is centered. Below it, the "User ID" is set to "1", and the "Feedback" field contains the placeholder text "Enter a Feedback". Two grey buttons, "Back" and "Submit", are positioned below the form. A section titled "Latest feedback from all users:" in yellow text follows. A white box displays a list of feedback messages: "Need Improvement", "Good Apps!", "Dislike", "Nice Application!", "Hello World!", and "Good App!". The bottom of the screen features a black navigation bar with standard Android icons.

19:11 57.0 KB/S VoD LTE-R 72%

# Feedback

Please fulfil the requirement form:

User ID : 1

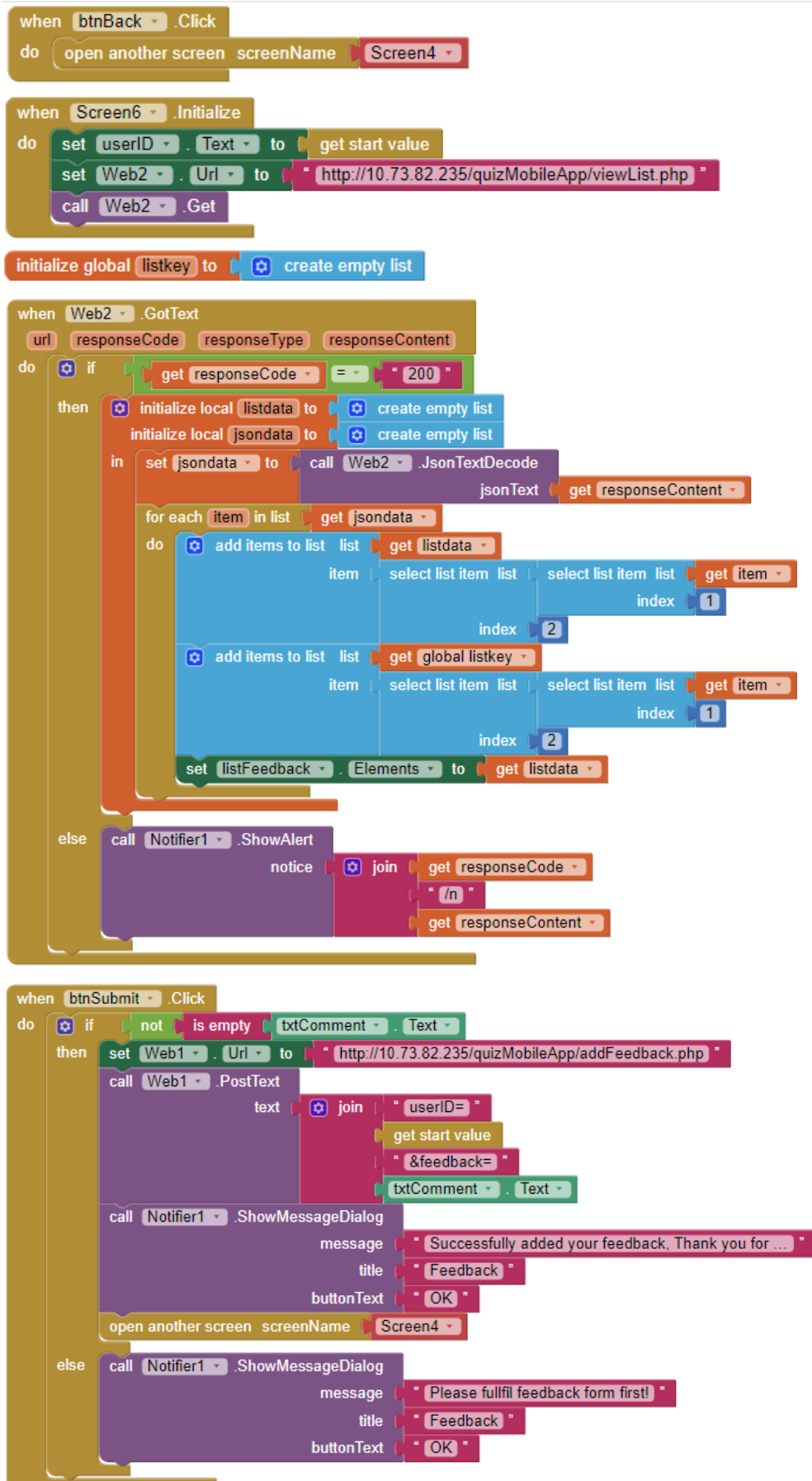
Feedback :

Back Submit

Latest feedback from all users:

- Need Improvement
- Good Apps!
- Dislike
- Nice Application!
- Hello World!
- Good App!

#### 4.10.2 Block of Codes



## **5. ENTREPRENEURIAL MIND AND OPPORTUNITY**

The future of the Quiz Learning Game Mobile Application is bright, thanks to its ability to think entrepreneurially and seize market opportunities. This app uniquely combines learning, competition, and social interaction, making it a strong contender in the growing edutainment market. By constantly innovating and improving the user experience, the app can attract a diverse audience of learners and quiz enthusiasts. With a focus on iterative development, integrating user feedback, and using agile marketing strategies, the app will stay relevant and appealing. This approach ensures the app adapts to user needs and market trends, keeping its competitive edge sharp.

The Quiz Learning Game Mobile Application has great potential for commercialization because of its wide appeal and unique features. It attracts a diverse group of users, including students, professionals, and lifelong learners, making it appealing to many advertisers and sponsors. The app's real-time leaderboards feedback creating a competitive and engaging environment that encourages users to keep coming back, which is crucial for making money through in-app purchases and subscriptions. Additionally, the app can collect and analyze user data, offering valuable insights for creating personalized experiences and targeted advertising, boosting its commercial appeal even further.

The plan to commercialize the Quiz Learning Game Mobile Application involves a few key steps. First, the app will launch with a freemium model, offering basic access for free while providing premium features like advanced quizzes and personalized learning paths through a subscription service. This way, users can try out the app and see its value before deciding to pay. Additionally, we will seek partnerships with educational institutions and corporate training programs to grow our user base and establish the app as a trusted learning tool. Finally, we will run an aggressive marketing campaign using social media, influencer partnerships, and educational forums to attract users and build brand recognition. With these strategies, we aim to achieve widespread adoption and sustainable revenue growth.

## **6. CONCLUSION**

The Quiz Learning Game Mobile Application project aims to revolutionize learning and entertainment by offering a seamless platform for users to engage in quizzes across various subjects. Designed to be interactive and user-friendly, the app promotes continuous learning and intellectual growth among users of all ages. Key features include comprehensive subject quizzes, user-friendly registration and login processes, and robust backend infrastructure for scalability and reliability. By leveraging modern mobile development frameworks and cloud-based services, the app ensures compatibility across iOS and Android devices while providing a consistent user experience. Overall, the Quiz Mobile App combines education, competition, and social interaction to deliver a unique and enjoyable experience for its users worldwide.

## 7. RUBRICS

### 7.1 Application

CSC264 - Individual Project Rubric (25%)									
No	User Interface & Information		0	1	2	Weight	Scored Earned (1-2)	Total earned	Actual Score
1	Intuitive and user-friendly design / Layout design	10	not exist	Incorrect/incomplete	Complete	5	2	10	
2	Responsive design for various screen sizes	10	not exist	Incorrect/incomplete	Complete	5	2	10	
3	Contains the home page, information about us, or pages to view related information	10	not exist	Incorrect/incomplete	Complete	5	2	10	
4	Effective use of navigation	10	not exist	Incorrect/incomplete	Complete	5	2	10	
<b>Functionality</b>									
5	Implementing CRUD Operation	10	not exist	Incorrect/incomplete	Complete	5	2	10	
6	Contains system authentication	10	not exist	Incorrect/incomplete	Complete	5	2	10	
7	Implementing the main process/module of the system (achieving main goal & objectives)	10	Show limited awareness but not reflect to the goal at all	Shows awareness of Goal	Goal is exceptionally well focused	5	2	10	
8	Completeness of Application	10	not exist	Incorrect/incomplete	Complete	5	2	10	
9	Entrepreneurial Experience	6	No entrepreneurial element	There is an entrepreneurial element	High-quality implemented entrepreneurial elements	3	2	6	
10	User Experience (UX) - a user interacts with and experiences a system (useful, usable, findable, desirable, accessible, credible, and valuable without conscious thought)	10	Not achieving or achieve only 1 of UX pillars	Achieving 2-4 UX pillars	Achieving 5-7 of UX pillars	5	2	10	
<b>Deployment and Performance (5)</b>									
11	Successful deployment on online/offline server or hosting platform (Google Play/App Store)	4	not deploy	Deploy on offline server	Deploy on online server	2	2	4	
<b>TOTAL POINT WEB</b>		<b>100</b>						<b>100</b>	
							<b>TOTAL 25%</b>	<b>25</b>	

## 7.2 Report

2. Individual Project Report (5%)								
No	Tasks	0	1	2	Weight	earned (0-2)	Total earned	Actual Score
1	Entrepreneurial Mind & Opportunity	No entrepreneurial idea for value adding/solving user/customer needs.	Business idea is clear but does not fulfill the realistic user/customer needs.	Able to mobilize the idea to become opportunity according to the business strategy and fulfill the user/customer needs.	5	2	10	
2	Introduction to system -problem statement -objectives -scope of project -project significant	Not able to write ideas systematically and with limited clarity and accuracy	Able to write ideas systematically AND fairly clearly and accuracy	Able to write ideas systematically AND with excellent clarity and accuracy	5	2	10	
3	Flow Chart	Not achievable or below expectation.	Achievable but level of complexity is below expectation.	Achievable and acceptable level of complexity.	5	2	10	
4	Functional Design -functional requirement / process design	Not achievable or below expectation.	Achievable but level of complexity is below expectation.	Achievable and acceptable level of complexity.	5	2	10	
5	Interface Design -Block codes	Not achievable or below expectation.	Achievable but level of complexity is below expectation.	Achievable and acceptable level of complexity.	5	2	10	
TOTAL POINTS						10	50	
						TOTAL 5%	5	

## 7.3 Presentation

2. Individual Project Presentation (5%)								
No	Assessment	1	2	3	4	5	SCORES	Actual Score
		Weak	Fair	Good	Very Good	Excellent	EARNED (1-5)	
1	Delivery of ideas (Communicative ability)	Not able to deliver ideas clearly and require major improvements	Able to deliver ideas and require further improvements	Able to deliver ideas fairly clearly and require minor improvements	Able to deliver ideas clearly	Able to deliver ideas with great clarity	5	
2	Confident and articulate delivery of ideas (Communicative ability)	Not able to deliver idea confidently and articulate	Able to deliver ideas with limited confidence and effect and require further improvements	Able to deliver ideas fairly confidently and effectively and require minor improvements	Able to deliver ideas confidently and articulately	Able to deliver ideas with great confidence, effect and articulately	5	
3	Understand and respond to questions (Communicative ability)	Not able to understand and respond to a question	Able to understand and answer questions but not able to accurately answer the question	Able to understand and answer questions satisfactorily	Able to respond to questions well	Able to fully understand and respond to questions very well	5	
4	Clarity, accuracy and systematically written academic discourse (Slide content)	Not able to write ideas systematically and with limited clarity and accuracy	Able to write ideas systematically BUT with limited clarity and accuracy	Able to write ideas systematically AND fairly clearly and accuracy	Able to write ideas systematically, clearly and accuracy	Able to write ideas systematically AND with excellent clarity and accuracy	5	
						TOTAL MARKS	20	
						TOTAL 5%	5	