

Math Quiz APP (Qingyu Zhu, 3035419080)

An Android application to practice students' ability in solving algebraic equations.

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Requirements

Math Quiz APP project requires following to run:

- Android Studio 2.3.3
- Nexus S API 23 with resolution 480 x 800
- Android 6.0
- API 23

Three pages and main functions

Math Quiz APP contains three pages: Home page, main page and summary page.

1. Home page contains my name and university number, see Figure 1. Besides, there are three buttons:
 - a. "START QUIZ" button. User press "START QUIZ" button, the main page will be loaded;
 - b. Music switch button. In a formal status, the music switch button is off. User switch the button to the right, the APP background music will start and switch

- the button to the left, the background music will stop. See Figure 2;
- c. “Read me” button. User press the “Read me ” button, a dialog will be displayed. The dialog contains “Math Quiz Rules”. See Figure 3.



Figure 1 Screenshot of the “Home page”



Figure 2 Screenshot of background music start status

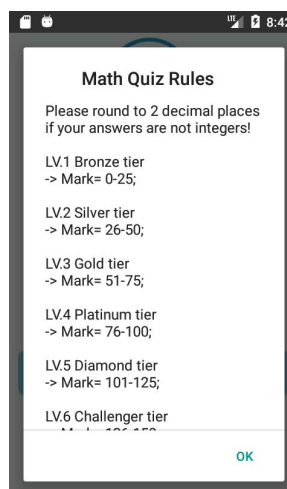


Figure 3 Screenshot of “Read me” dialog

2. As we can see from Figure 4 and 5, main page contains:
- 1 TextView field shows question number;
 - A timer for each question. When user press “SUBMIT” button, the timer will stop. When user press “NEXT QUESTION”, the timer will restart from 0:0.
 - 1 TextView field for displaying the question;
 - 2 EditText fields for inputting the answer. If the question is about linear equation or if the question is about quadratic equation but there is only one root, the x_2 EditText fields will be disabled;
 - 1 Button for submitting the answer;
 - 1 TextView for displaying the correctness of the input answer and the correct answer;
 - 1 Button for proceeding to the next question.
 - Besides, if user submits answers and whether the answers are correct or wrong, different background music will be played respectively to reminder users.
 - For linear equation and quadratic equation, if user’s answer is correct, user’s mark will plus 10 and 20 points, respectively. If user’s answer is wrong, no deduct points or bonus points. See Figure 6 and 7.
 - The answer must be a number and cannot be a character. Error messages will be displayed if the answer is not of proper format and “SUBMIT” button is disabled. See Figure 8.
 - If user’s answer is not integers(that means user’s answer contains “.”), the EditTexts will be limited to enter only two decimal places.

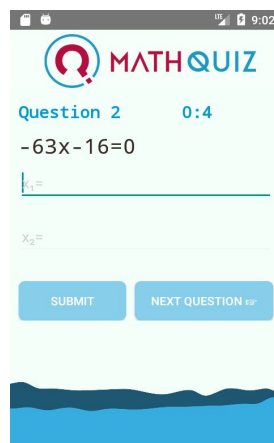


Figure 4 Screenshot of linear equation

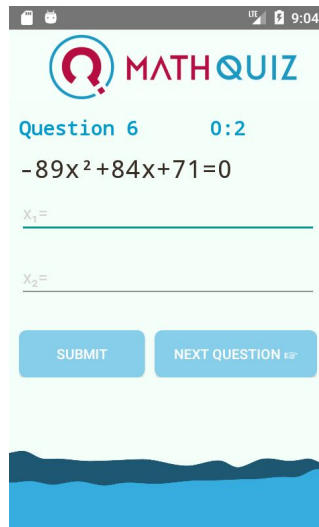


Figure 5 Screenshot of quadratic equation

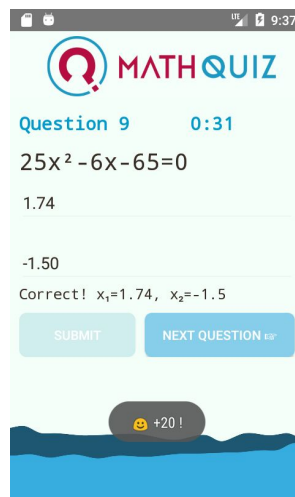


Figure 6 Screenshot of answers for quadratic equation are correct

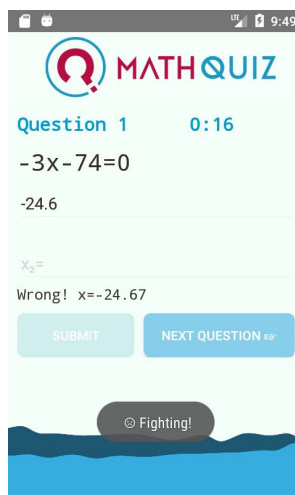


Figure 7 Screenshot of answer for linear equation is wrong

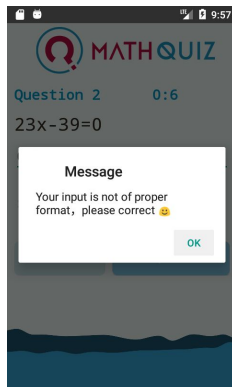


Figure 8 Screenshot of “Error Message”

3. As Figure 9 shows, summary pages contains:
- User’s level.
 If user’s mark is between $[0, 25]$ points, user is LV.1 Bronze tier!
 If user’s mark is between $[26, 50]$ points, user is LV.2 Silver tier!
 If user’s mark is between $[51, 75]$ points, user is LV.3 Gold tier!
 If user’s mark is between $[76, 100]$ points, user is LV.4 Platinum tier!
 If user’s mark is between $[101, 125]$ points, user is LV.5 Diamond tier!
 If user’s mark is between $[126, 150]$ points, user is LV.6 Challenger tier!
 - The number of question that user has answered correctly, wrongly, give up. Besides, the speed (average time) user spent on each linear equation question and that on each quadratic equation question that he/she has submitted. As well as, the final mark user has obtained.
 - A Listview shows 10 questions and user’s answer correctness with ScrollView.
 - “TRY AGAIN” button. When user press “TRY AGAIN” button, the page will turn to Home page.

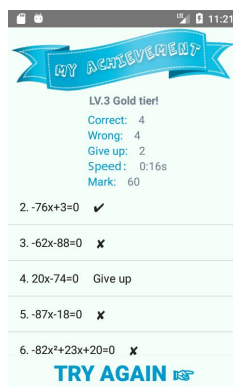


Figure 9 Screenshot of “Summary page”

Limitation

1. Layout of this app is only apply to screen orientation of portrait. If screen orientation is landscape, the layout will be chaos.
2. Press “TRY AGAIN” button, it can back to Home page directly. However, if user press the AVD built-in return key, it can not back to Home page directly. In fact, it will firstly back to Main page, then press “TRY AGAIN” button, it will back to Home page.