

ALGEBRAIC-QUIZ

An APP About Algebraic Equation Test

This APP is about the algebraic equation quiz. Users will answer ten questions about linear and quadratic equation, and the APP should judge the result with the correct answer to analyze their performance in this test.

Project Structure (For Main Folder)

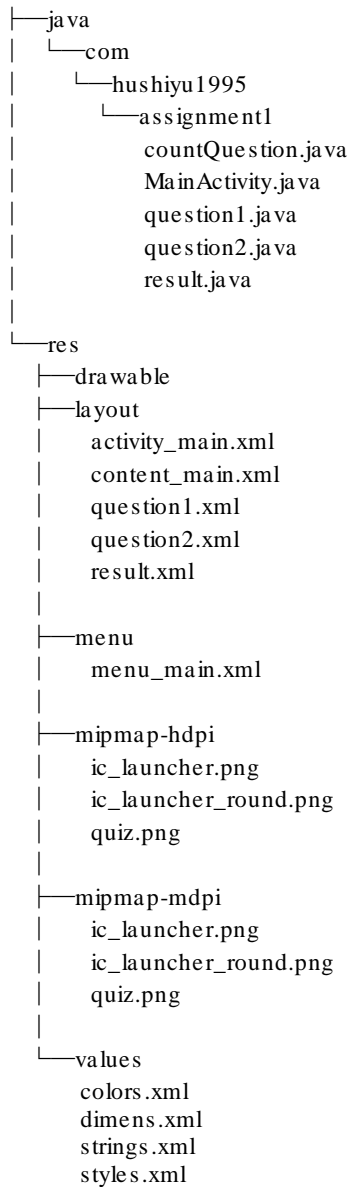


Figure 1. The tree structure of main folder in the App project

<java/com/hushiyu1995/assignment1>

- countQuestion.java is a java class for counting the correct/wrong/incomplete situation as well as the duration of each question.

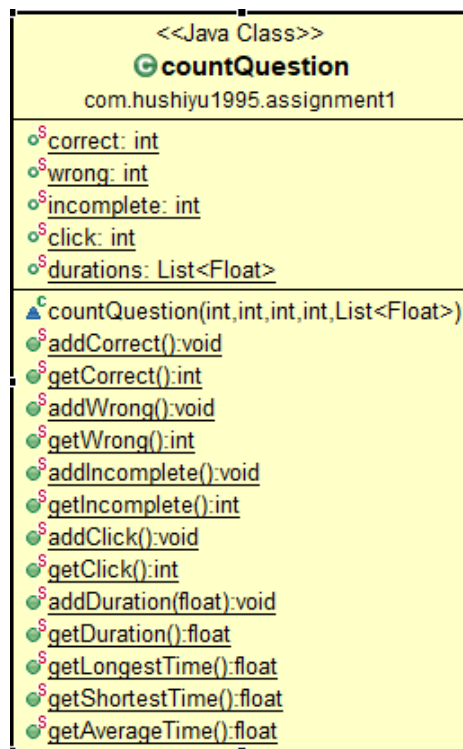


Figure 2. The UML diagram of countQuestion Class

- MainActivity.java is a java class for starting the App. The layout of this class is defined in activity_main.xml file.

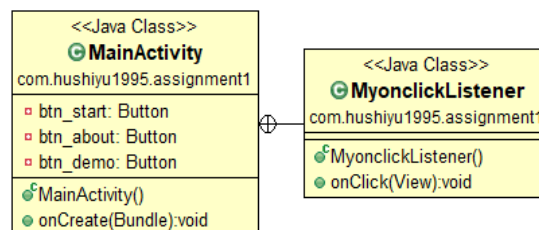


Figure 3. The UML diagram of MainActivity Class

- question1.java is a java class for starting the linear equation quiz. The layout of this class is defined in question1.xml file.

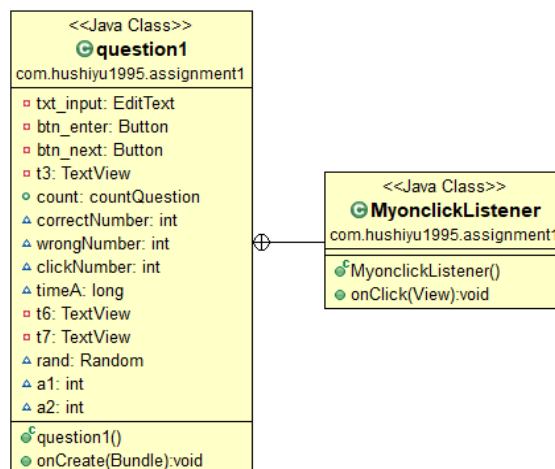


Figure 4. The UML diagram of question1 Class

- question2.java is a java class for starting the quadratic equation quiz. The layout of this class is defined in question2.xml file.

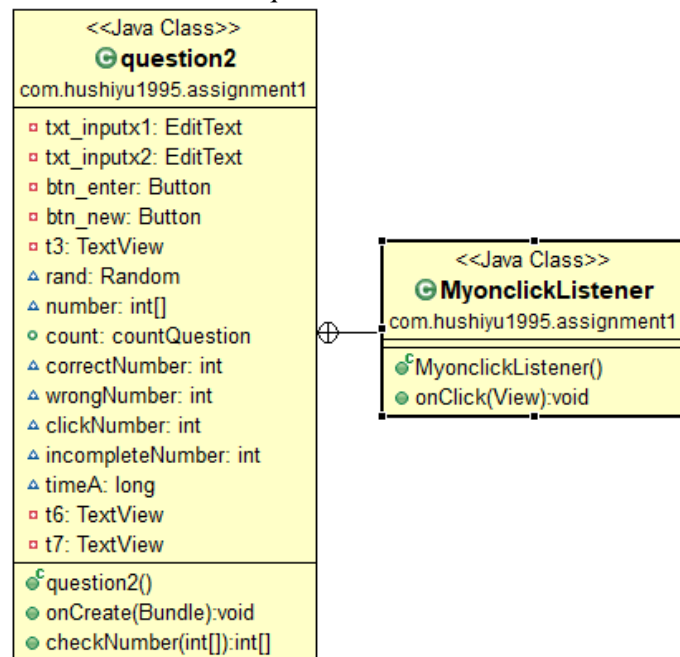


Figure 5. The UML diagram of question2 Class

- result.java is a java class for showing the feedback the user's performance in the test. The layout of this class is defined in result.xml file.

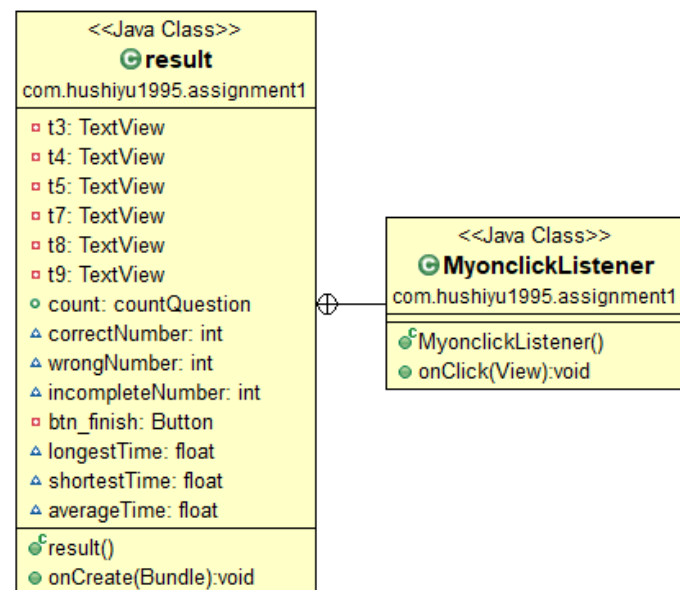


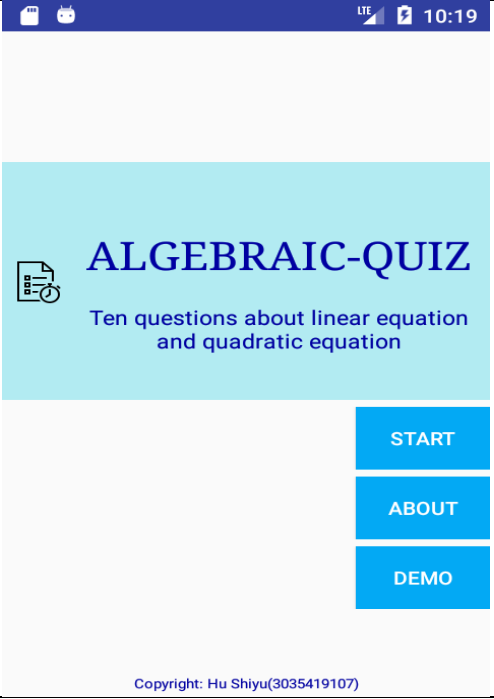
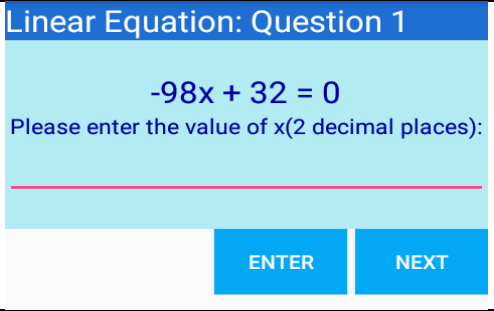
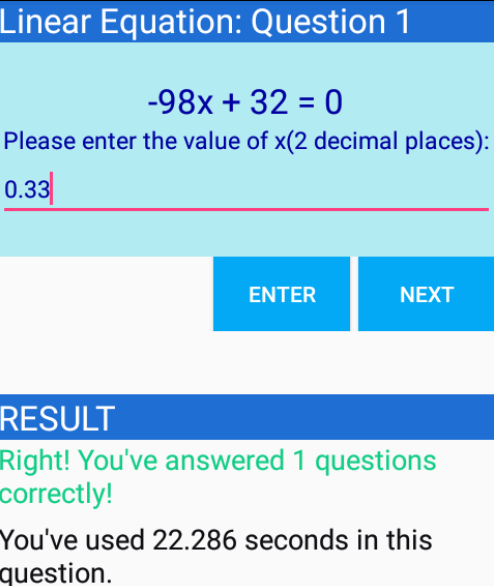
Figure 6. The UML diagram of result Class

Basic Information

- Android Studio Version: 2.3.3
- API Level: 23:5554
- Android Emulator: Nexus_S
- Android Version: 6.0

Functions

Table 1. The functions of the APP

<p>Start Page</p> <p>The start page includes the title with three buttons. The START button links the quiz page, while the ABOUT button combines the URL of this webpage and will skip to this blog once click it. The DEMO button will skip to Youtube, where I've upload a demo for this App as a guidance.</p>	
<p>Quiz Page</p>	
<p>Linear Equation</p> <p>The first 5 questions are about linear equation $Ax+B=0$ where A and B are two random integers in the range $[-99, 99]$. The user will be asked to provide a value of x in 2 decimal places.</p>	
<p>Once the answer is verified as correct result, the UI will show Right with the total correct questions in green. What's more, the using time is defined as the duration from the page appearance to the ENTER button clicking.</p>	

For linear equation, click ENTER with nothing input will be regard as wrong. Empty input and incorrect input will return the Error with the correct answer in red.

Linear Equation: Question 1

$$8x - 23 = 0$$

Please enter the value of x(2 decimal places):

ENTER

NEXT

RESULT

Error! The right answer is 2.88. Sorry, you've answered 1 questions wrong.

You've used 1.697 seconds in this question.

Linear Equation: Question 2

$$37x - 64 = 0$$

Please enter the value of x(2 decimal places):

2.33

ENTER

NEXT

RESULT

Error! The right answer is 1.73. Sorry, you've answered 2 questions wrong.

You've used 4.72 seconds in this question.

Quadratic Equation

Question 6 to 10 are about quadratic equation $Ax^2 + Bx + C = 0$ where A, B and C are three random integers in the range $[-99, 99]$. Of course, the APP has verified that all the quadratic equations have real roots.

Assignment1

Quadratic Equation: Question 6

$$-7x^2 - 67x + 7 = 0$$

Please enter the value of x1(2 decimal places):

Please enter the value of x2(2 decimal places):

ENTER

NEW

As linear equations, only two answers are verified as correct results will the UI shows the Right in green.

Quadratic Equation: Question 7

$$-98x^2 - 26x + 6 = 0$$

Please enter the value of x1(2 decimal places):

-0.41

Please enter the value of x2(2 decimal places):

0.15

ENTER

NEW

RESULT

Right! You've answered 1 questions correctly!

You've used 44.682 seconds in this question.

Empty input and incorrect input will be regard as wrong and return the Error information in red.

Quadratic Equation: Question 6

$$-7x^2 - 67x + 7 = 0$$

Please enter the value of x1(2 decimal places):

Please enter the value of x2(2 decimal places):

ENTER

NEW

RESULT

Error! The right answer is -9.67 and 0.10. Sorry, you've answered 6 questions wrong.

You've used 11.927 seconds in this question.

Quadratic Equation: Question 9

$$-37x^2 - 29x + 87 = 0$$

Please enter the value of x1(2 decimal places):

1.11

Please enter the value of x2(2 decimal places):

2.22

ENTER

NEW

RESULT

Error! The right answer is -1.97 and 1.19. Sorry, you've answered 8 questions wrong.

You've used 13.317 seconds in this question.

The difference between the quadratic equation with the linear equation is the incomplete input. Input one correct answer and empty another will be regard as incomplete situation, while input one correct answer and one incorrect answer will be regard as error.

Quadratic Equation: Question 8

$$70x^2 + 42x - 37 = 0$$

Please enter the value of x1(2 decimal places):

0.49

Please enter the value of x2(2 decimal places):

ENTER

NEW

RESULT

Incomplete! The right answer is 0.49 and -1.09. Sorry, you've answered 1 questions incompletely.

You've used 26.941 seconds in this question.

Quadratic Equation: Question 8

$$70x^2 + 42x - 37 = 0$$

Please enter the value of x1(2 decimal places):

0.49

Please enter the value of x2(2 decimal places):

22.22

ENTER

NEW

RESULT

Error! The right answer is 0.49 and -1.09. Sorry, you've answered 7 questions wrong.

You've used 47.324 seconds in this question.

Result Page

This is the last page in the APP, in this page the user will get the feedback about his or her performance in this test. Different situations are displayed in different color to highlight.

Congratulation! Now here is the analysis of your test:

ACCURACY

Correct: 0

Wrong: 10

Incomplete: 0

TIME(s)

Longest Time: 1.318

Shortest Time: 0.484

Average Time: 0.6681

FINISH

Accessory

Blog

<http://hushiyu1995.com/2017/11/04/algebraic-equation-app-development/>

Demo

<https://www.youtube.com/watch?v=Qc76Fr1ils&feature=youtu.be>

Source Code

<https://github.com/huuuuusy/Algebraic-Equation-App>