Read Me File

COMP7506 Smart Phone Apps Developments

Created by: Haoyu SHE(Henry)

Student ID: 3035455149

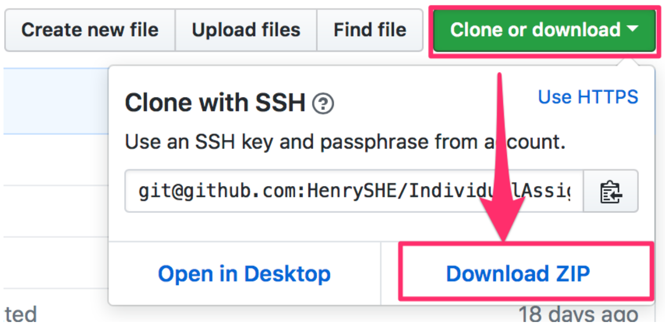
E-mail: henryshe@hku.hk

How to Open the project:

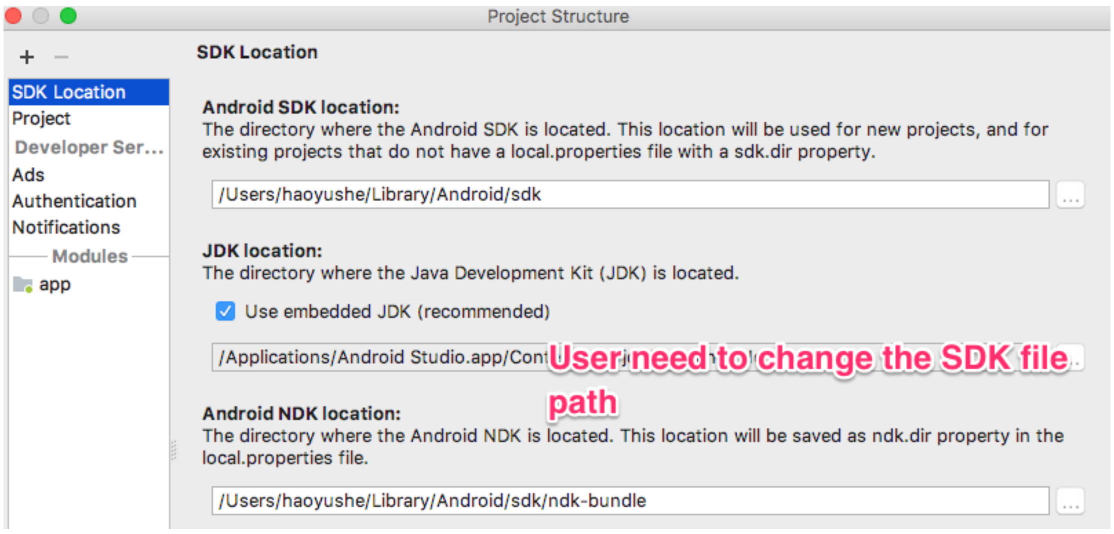
Fist, unzip the compressed file, and then import the project form the Android Studio.

Or, you can pull the project from GitHub link:

https://github.com/HenrySHE/IndividualAssignment



You can use clone or just directly download the zip file on the websites.


Project Structure

SDK Location

Android SDK location:
The directory where the Android SDK is located. This location will be used for new projects, and for existing projects that do not have a local.properties file with a sdk.dir property.

/Users/haoyushe/Library/Android/sdk

JDK location:
The directory where the Java Development Kit (JDK) is located.

✓ Use embedded JDK (recommended)

/Applications/Android Studio.app/Cont

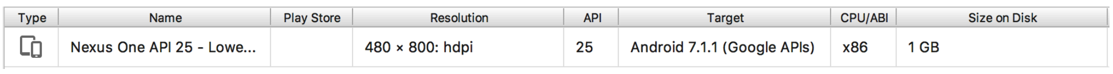
User need to change the SDK file path

Android NDK location:
The directory where the Android NDK is located. This location will be saved as ndk.dir property in the local.properties file.

/Users/haoyushe/Library/Android/sdk/ndk-bundle

Virtual Device Setting:

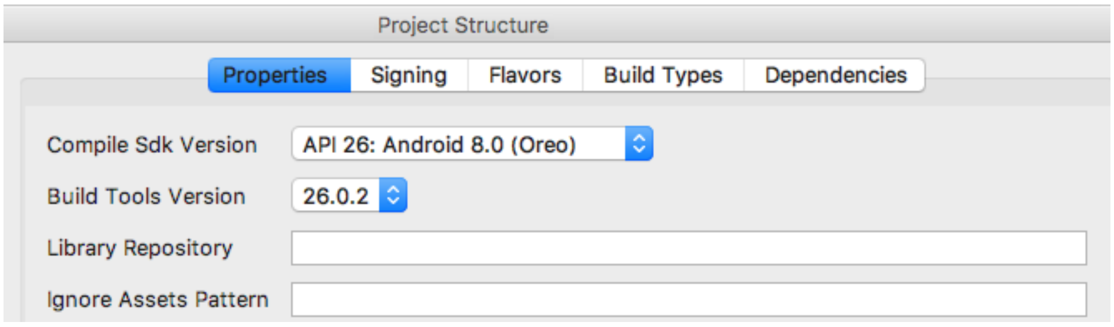
Nexus One API 25, 480*800 hdpi



Type	Name	Play Store	Resolution	API	Target	CPU/ABI	Size on Disk
	Nexus One API 25 - Lowe...		480 × 800: hdpi	25	Android 7.1.1 (Google APIs)	x86	1 GB

Project Compile SDK version: API 26: Android 8.0;

Build Tools Version: 26.0.2



Compile Sdk Version: API 26: Android 8.0 (Oreo)

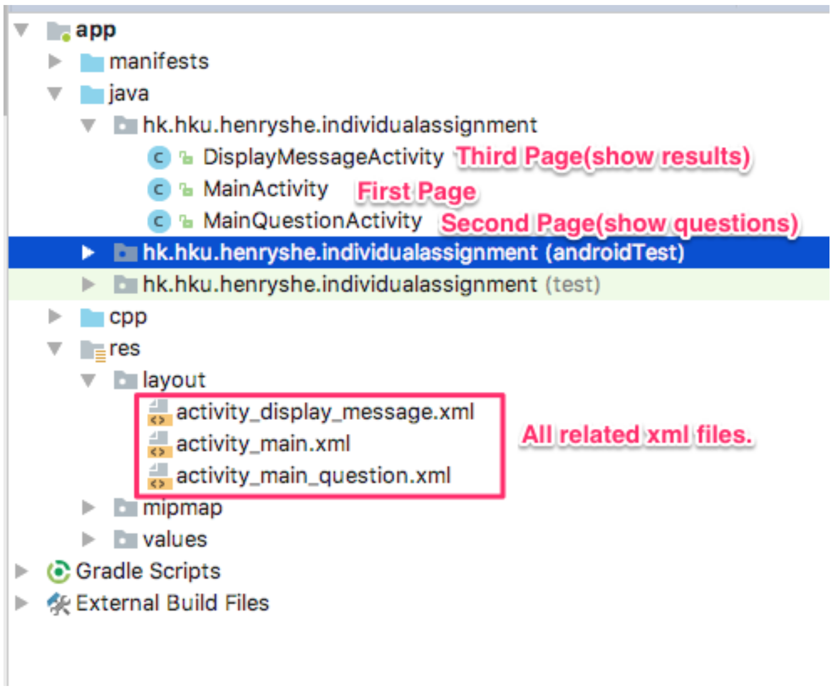
Build Tools Version: 26.0.2

Library Repository:

Ignore Assets Pattern:

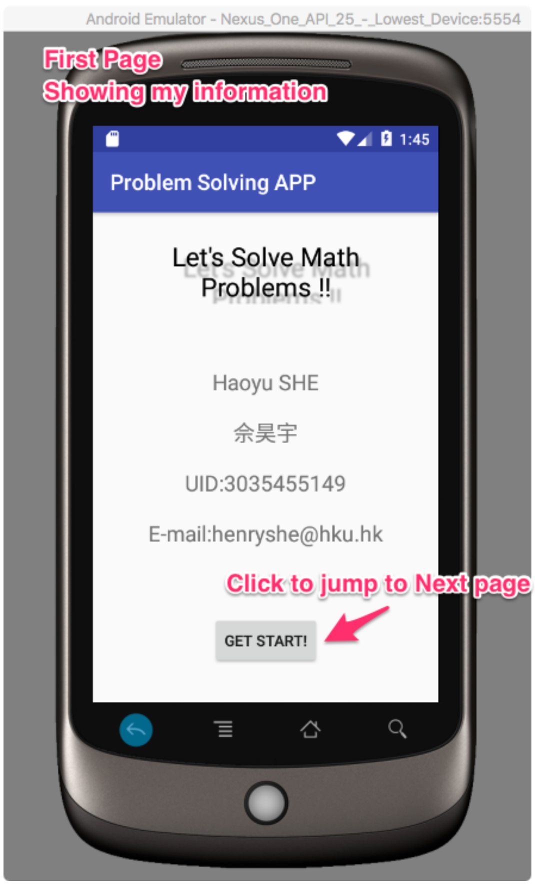
Project Structure:

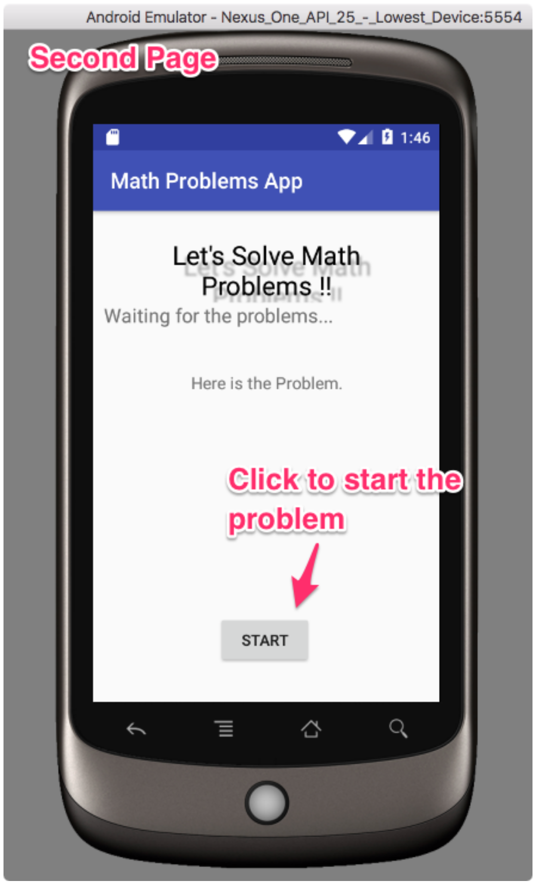
Here is the capture of the project structure, and it contains 3 activities, the first page is showing my personal information, then the second page is showing the questions (including 5 linear questions, and 5 quadratic questions). The third page is used to present the result.



```
app
  manifests
  java
    hk.hku.henryshe.individualassignment
      DisplayMessageActivity   Third Page(show results)
      MainActivity   First Page
      MainQuestionActivity   Second Page(show questions)
    hk.hku.henryshe.individualassignment (androidTest)
    hk.hku.henryshe.individualassignment (test)
  cpp
  res
    layout
      activity_display_message.xml
      activity_main.xml                All related xml files.
      activity_main_question.xml
    mipmap
    values
Gradle Scripts
External Build Files
```

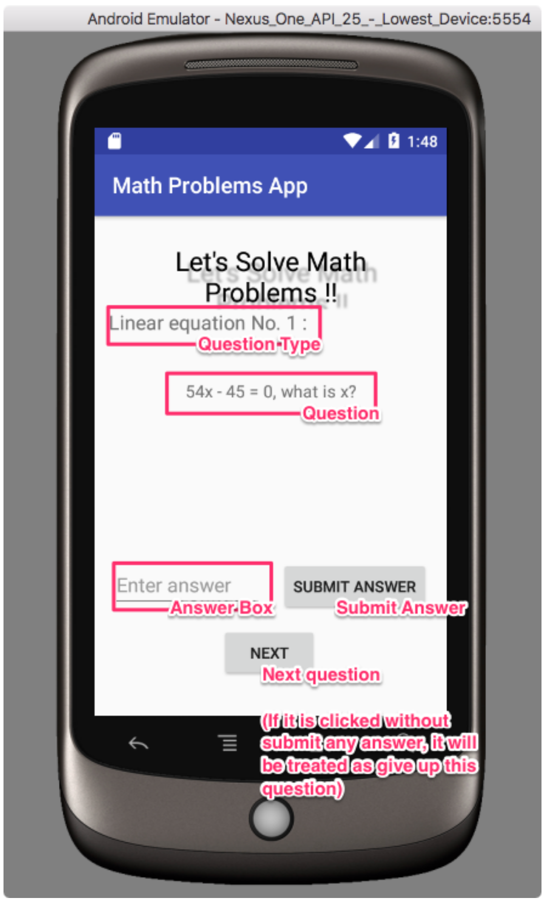
User Interface and functions:




Android Emulator - Nexus_One_API_25_-_Lowest_Device:5554
Second Page
1:46
Math Problems App
Let's Solve Math Problems !!
Waiting for the problems...
Here is the Problem.
Click to start the problem
START

The first page shows my information, and user can click the “Get Start!” button.

In the second page, all the element has been initialized and user will also need to press the start to start solving the problems. Then the element will be changed accordingly.


Android Emulator - Nexus_One_API_25_-_Lowest_Device:5554
1:48
Math Problems App
Let's Solve Math Problems !!
Linear equation No. 1 :
Question Type
54x - 45 = 0, what is x?
Question
Enter answer
Answer Box
SUBMIT ANSWER
Submit Answer
NEXT
Next question
(If it is clicked without submit any answer, it will be treated as give up this question)

After user click the “start”, then it will show the question, from 1 to 10;

Question Type: showing the type of the question, and the question number (total 10 questions)

Question: Presenting the linear/quadratic questions

Enter Answer: Letting user to input answer (Only allow number/digits less than2)

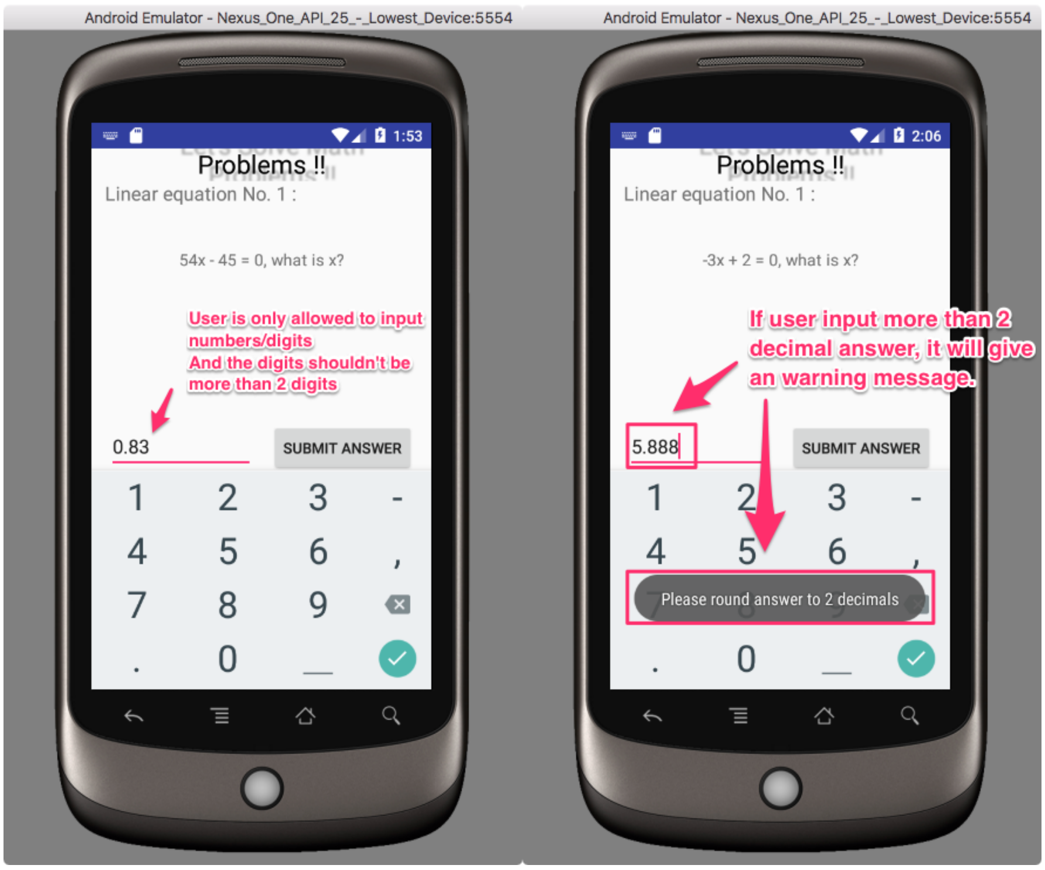
Submit Answer: submit the answer that user has input.

Ps: If it is clicked without submit any answer, it will be treated as **give up this question**

Ps: **The question is in the right format:**

In this screenshot, a = 54, b = -45, and it **is convert into correct format**:

54x -45 = 0, rather than “54x + -45 = 0”.


Android Emulator - Nexus_One_API_25_-_Lowest_Device:5554

Problems !!

Linear equation No. 1 :

54x - 45 = 0, what is x?

User is only allowed to input numbers/digits
And the digits shouldn't be more than 2 digits

0.83

Android Emulator - Nexus_One_API_25_-_Lowest_Device:5554

Problems !!

Linear equation No. 1 :

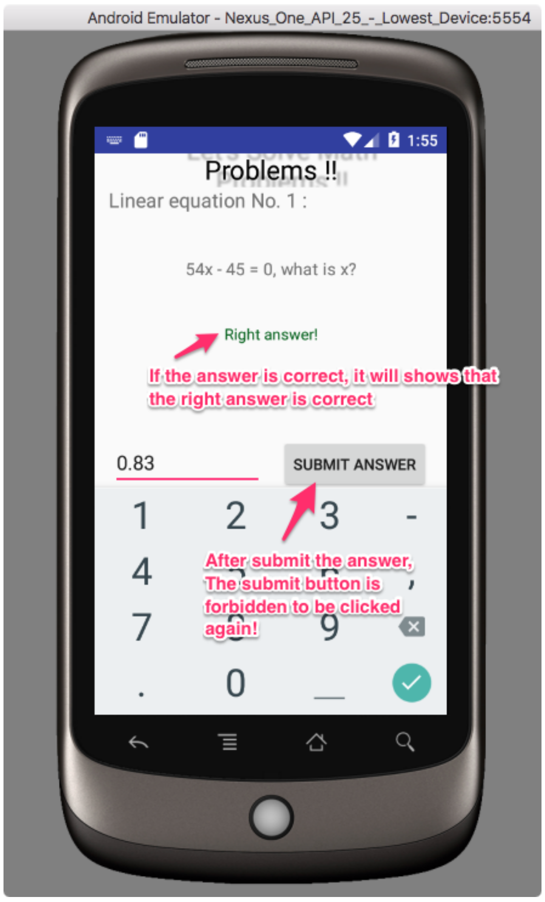
-3x + 2 = 0, what is x?

If user input more than 2 decimal answer, it will give an warning message.

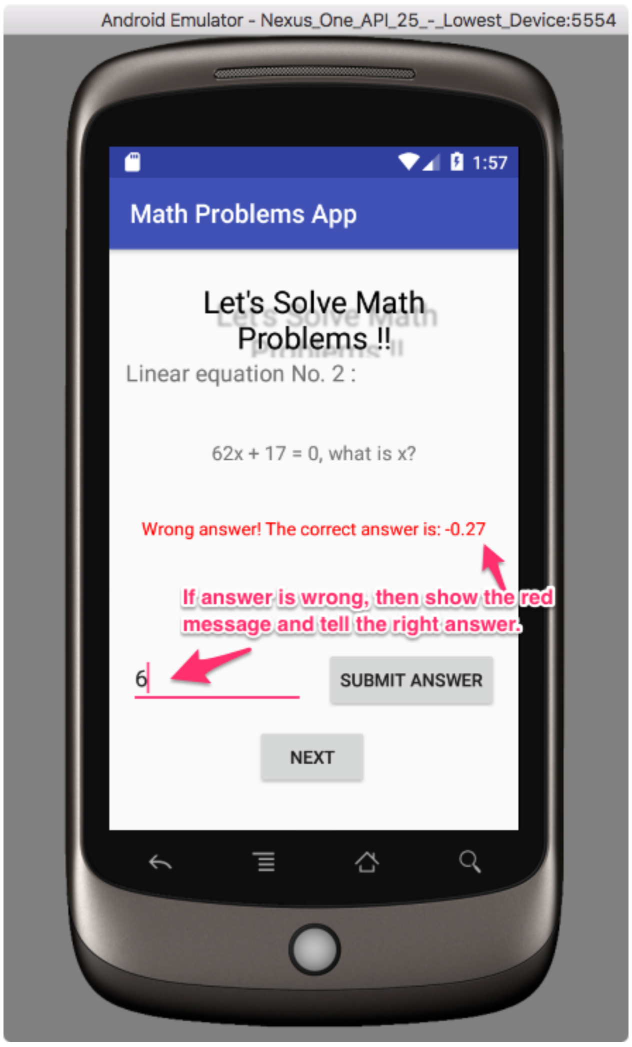
5.888

Please round answer to 2 decimals

User is only allowed to input number and the digits shouldn't be more than 2 digits, it will have a toast warning message, telling people should input only 2 decimal numbers.


Android Emulator - Nexus_One_API_25_-_Lowest_Device:5554
1:55
Problems !!
Linear equation No. 1 :
54x - 45 = 0, what is x?
Right answer!
If the answer is correct, it will shows that the right answer is correct
0.83
SUBMIT ANSWER
After submit the answer, The submit button is forbidden to be clicked again!

If user submit the right answer, then it will show **"Right answer!"**, then **forbid user click** on the submit button.


Android Emulator - Nexus_One_API_25_-_Lowest_Device:5554

Math Problems App

Let's Solve Math Problems !!

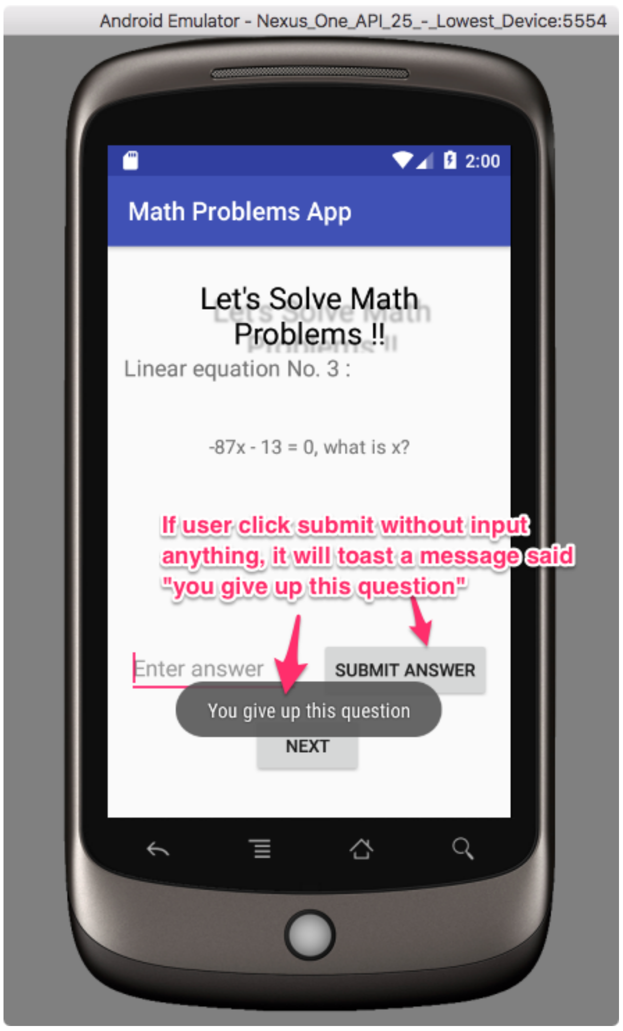
Linear equation No. 2 :

62x + 17 = 0, what is x?

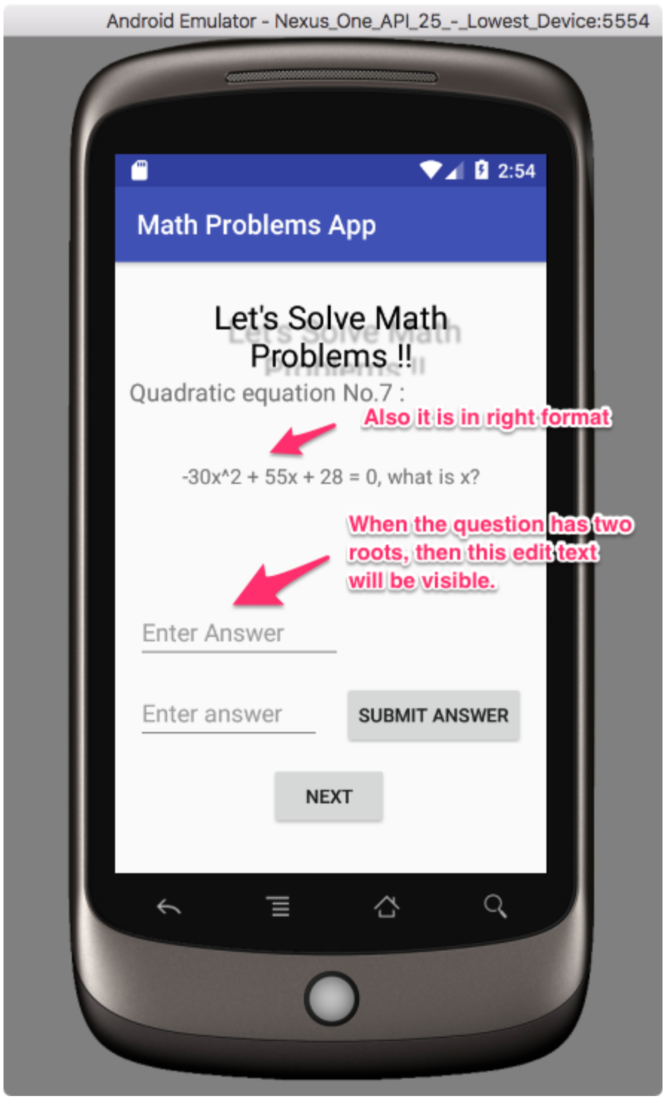
Wrong answer! The correct answer is: -0.27

If answer is wrong, then show the red message and tell the right answer.

If the answer is incorrect, then **show the correct answer** in red.


Android Emulator - Nexus_One_API_25_-_Lowest_Device:5554
2:00
Math Problems App
Let's Solve Math Problems !!
Linear equation No. 3 :
-87x - 13 = 0, what is x?
If user click submit without input anything, it will toast a message said "you give up this question"
Enter answer
SUBMIT ANSWER
You give up this question
NEXT

If user click submit without input anything, it will toast a message is said **"you give up this question".**


Android Emulator - Nexus_One_API_25_-_Lowest_Device:5554
2:54
Math Problems App
Let's Solve Math Problems !!
Quadratic equation No.7 :
Enter Answer
Enter answer
SUBMIT ANSWER
NEXT

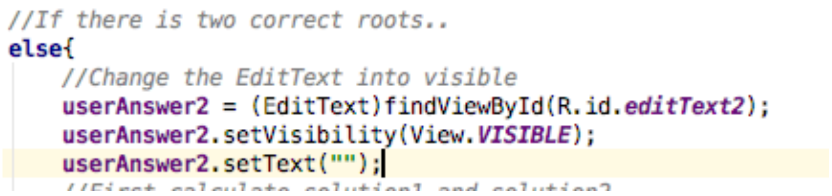
-30x^2 + 55x + 28 = 0, what is x?

Also it is in right format

When the question has two roots, then this edit text will be visible.

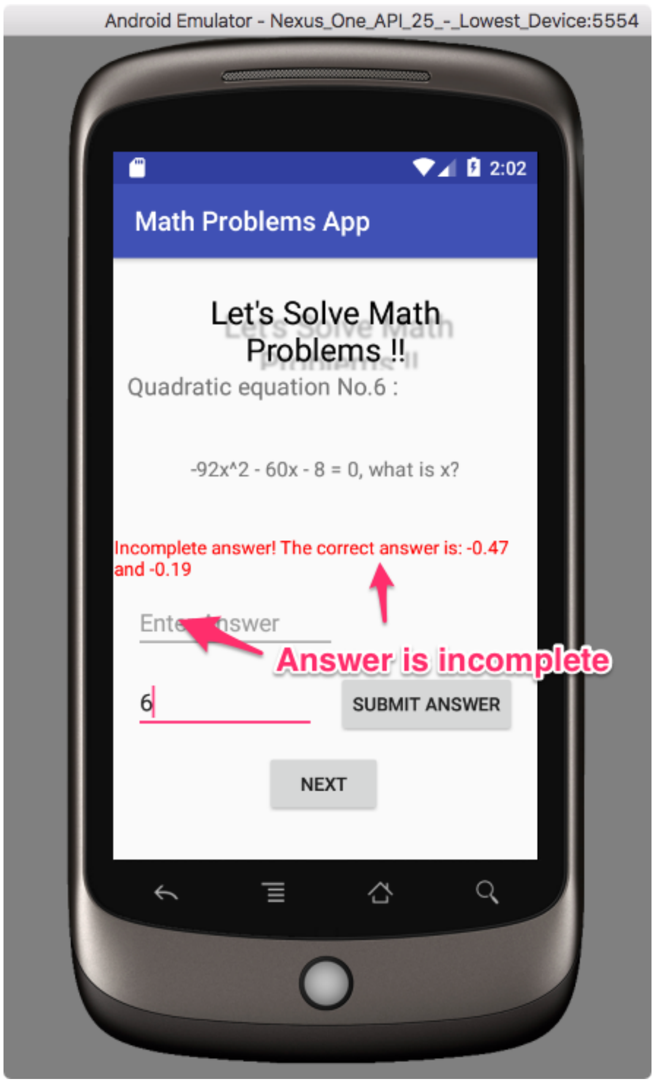
When it comes to quadratic questions, **the question is also in right format.**

And if there have two roots. **Another edit box will become visible.**



```
//If there is two correct roots..
else{
    //Change the EditText into visible
    userAnswer2 = (EditText)findViewById(R.id.editText2);
    userAnswer2.setVisibility(View.VISIBLE);
    userAnswer2.setText("");
    //First calculate solution1 and solution2
```

This shows the edit text is visible if there is two roots.


Android Emulator - Nexus_One_API_25_-_Lowest_Device:5554
2:02
Math Problems App
Let's Solve Math Problems !!

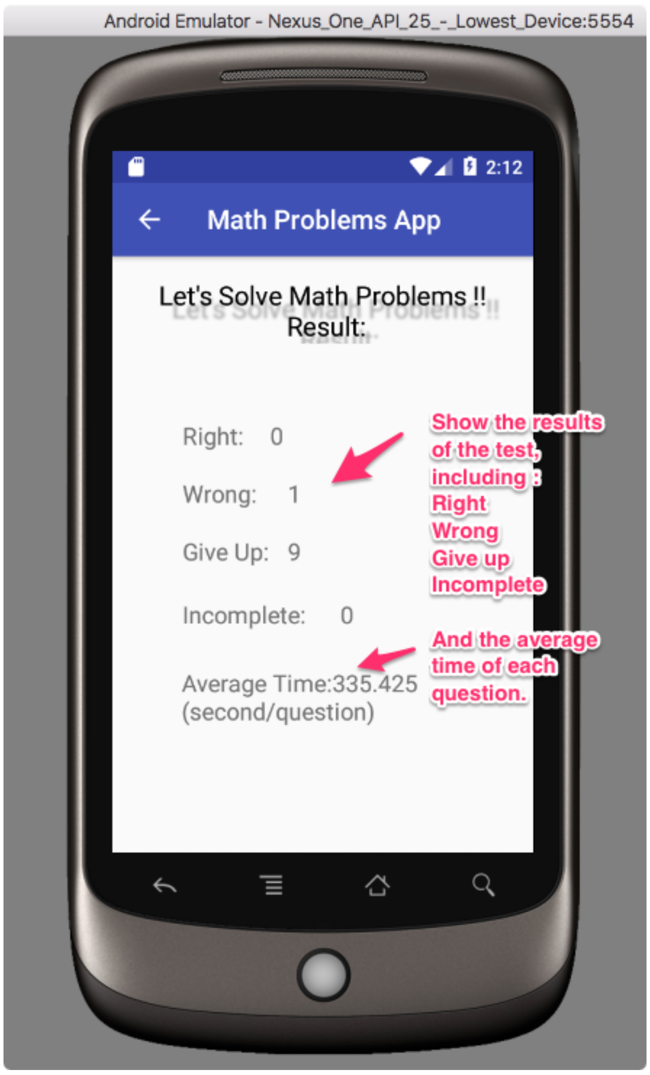
Quadratic equation No.6 :

-92x^2 - 60x - 8 = 0, what is x?

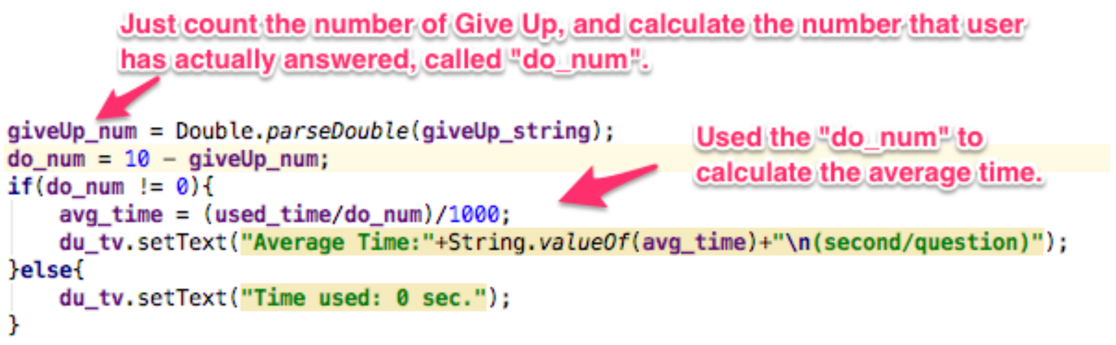
Incomplete answer! The correct answer is: -0.47 and -0.19

Enter Answer
Answer is incomplete
6
SUBMIT ANSWER
NEXT

In quadratic equation, if the answer is incomplete, **then show the message that the answer is incomplete, then give the right answer.**

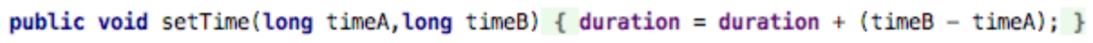

Android Emulator - Nexus_One_API_25_-_Lowest_Device:5554
2:12
Math Problems App
Let's Solve Math Problems !!
Result:
Right: 0
Wrong: 1
Give Up: 9
Incomplete: 0
Average Time:335.425
(second/question)
Show the results of the test, including :
Right
Wrong
Give up
Incomplete
And the average time of each question.

The last page shows the result of the test, and **showing how many question that user had answer right/wrong/incomplete and give up**. Also, the **average time has been calculated** (in second per question).


Just count the number of Give Up, and calculate the number that user has actually answered, called "do_num".
Used the "do_num" to calculate the average time.

```
giveUp_num = Double.parseDouble(giveUp_string);
do_num = 10 - giveUp_num;
if(do_num != 0){
    avg_time = (used_time/do_num)/1000;
    du_tv.setText("Average Time:"+String.valueOf(avg_time)+"\n(second/question)");
}else{
    du_tv.setText("Time used: 0 sec.");
}
```

This image shown how I calculate the average time, it count the "give_up count" then calculate how many problem that user has actually done, then calculate the average time.



```
public void setTime(long timeA,long timeB) { duration = duration + (timeB - timeA); }
```

This function show how I calculate the time used. Which has a private variable duration, and initialized as 0 when the question activity is active. Then add each time duration, and pass the sum to next activities.