

Article

Quiz Android Application

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I N F O

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A B S T R A C T

Math quiz is application for android devices. The purpose of the application is to encourage Students in solving mathematical expressions. The application allows students a fun way to Solve mathematical expression. It is intended for students who loves to take challenges to Calculate swiftly. Application records the minimum time and maximum score of the user Against each level corresponding to each section.

Keywords: Math Quiz, Mathematical Expressions, Android Devices, Quiz Application

Introduction

Problem Definition: It is essentially required to assist students for the learning and preparation of different Tests conducted for admission in higher studies in world. There exist no such application in android-based platform, which can provide candidates with both Preparation of such tests in user friendly and interactive way.

Objective of Project: The objective of the software Quiz Application is to provide a system which manages the quiz details of all the people.

Scope of Project: It may help collecting perfect management in detail. In a truly short time, the collection Will be obvious, simple and sensible it will help a person to know the management of Passed year perfectly and vividly.

System Study

Existing System

Limitation of Manual System

- It is time consuming

- It lacks data security
- Percentage of accuracy is less

Proposed System: The proposed system will be developed for android mobiles only because the market share of android is more than other operating systems. The fundamental idea behind our project. Is to make a product that would offer new aspects of learning. We wanted to create a tool that fits into modern age, but still stays true to the concepts of studying (Figure 1 to 5).

UML Diagram

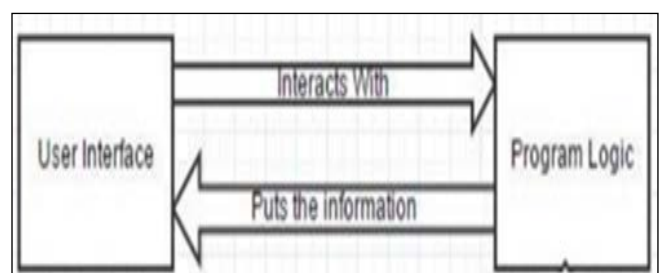


Figure 1. System Architecture Diagram

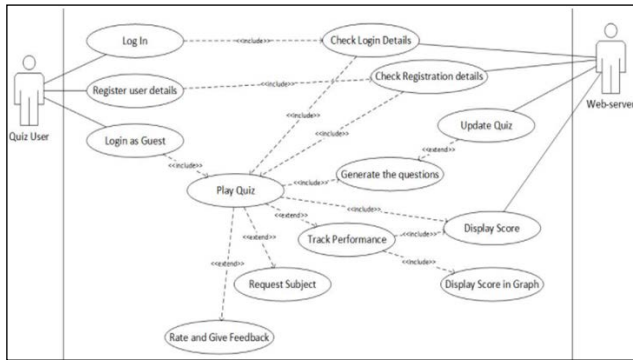


Figure 2. Use Case Diagram

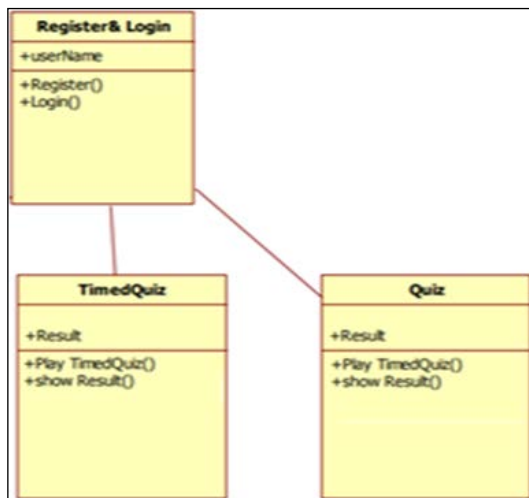


Figure 3. Class Diagram

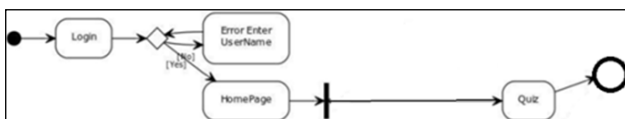


Figure 4. Activity Diagram

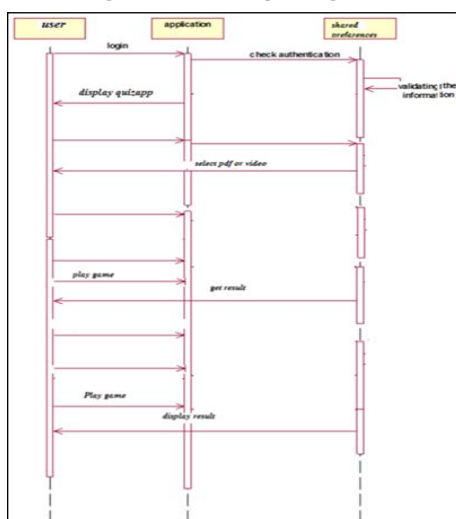


Figure 5. Sequence Diagram

Analysis and Design

Software\ Hardware Requirement Specification

Software Requirement

- Android OS
- Java

Hardware Requirement

- Minimum 2GB RAM based Android device (Figure 6).

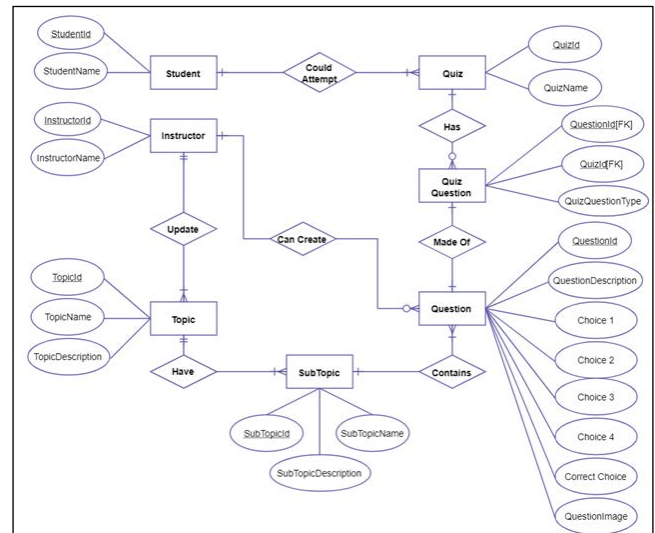


Figure 6. ER Diagram

Testing and Validation

Table 1. Test Cases and Report

Test Id	Test Case	Input	Expected output	Actual output
1	Check if the ID field is system generated or requires manual input.	Enter ID from SQL query	It should not accept the information provided	It did not accept the fact given
2	Add Contact	Enter Contact details	All the details must be filled correctly	The details were accepted correctly
3	Unsuccessful verification due to wrong length of phone number	Call to system with wrong contact length	Calling should fail and user will face again dialer	The system didn't allow lucky calling attempt

4	Unsuccessful saving of details due to wrong image format	Add image to contacts with format	Saving should fail and user will face again contact information UI	The system didn't allow lucky saving of data
---	--	-----------------------------------	--	--

Source Code

XML

Activity_developer.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin"
    android:paddingLeft="@dimen/activity_horizontal_margin"
    android:paddingRight="@dimen/activity_horizontal_margin"
    android:paddingTop="@dimen/activity_vertical_margin"
    tools:context="com.example.vikasojha.quizbee.DeveloperActivity">

    <Button
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Back"
        android:id="@+id/button4"
        android:layout_alignParentBottom="true"
        android:layout_alignParentLeft="true"
        android:layout_alignParentStart="true"
        android:layout_marginBottom="31dp"
        android:background="#01579B"
        android:textColor="#ffffff" />

    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="99dp"
        android:layout_height="132dp"
        android:layout_alignParentBottom="true"
        android:layout_marginStart="16dp"
        android:layout_marginLeft="16dp"
        android:layout_marginBottom="326dp"
        app:srcCompat="@drawable/sneha" />

    <ImageView
        android:id="@+id/imageView4"
        android:layout_width="112dp"
```

```
        android:layout_height="131dp"
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_alignParentBottom="true"
        android:layout_marginStart="32dp"
        android:layout_marginLeft="32dp"
        android:layout_marginEnd="251dp"
        android:layout_marginRight="251dp"
        android:layout_marginBottom="128dp"
        app:srcCompat="@drawable/tejas" />

    <TextView
        android:id="@+id/textView7"
        android:layout_width="260dp"
        android:layout_height="71dp"
        android:layout_alignParentStart="true" android:layout_alignParentLeft="true"
        android:layout_alignParentBottom="true"
        android:layout_marginStart="136dp"
        android:layout_marginLeft="136dp"
        android:layout_marginBottom="372dp"
        android:text="Sneha Mishra"
        android:textSize="36sp" />

    <TextView
        android:id="@+id/textView8"
        android:layout_width="221dp"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_alignParentBottom="true" android:layout_marginStart="158dp"
        android:layout_marginLeft="158dp"
        android:layout_marginEnd="16dp"
        android:layout_marginRight="16dp"
        android:layout_marginBottom="171dp"
        android:text="Tejas Mane"
        android:textSize="36sp" />

    <TextView android:id="@+id/textView9"
        android:layout_width="269dp"
        android:layout_height="77dp"
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_alignParentBottom="true"
        android:layout_marginStart="96dp"
        android:layout_marginLeft="96dp"
```

```

android:layout_marginTop="166dp"
android:layout_marginEnd="30dp"
android:layout_marginRight="30dp"
android:layout_marginBottom="472dp"
android:text="Developer"
android:textSize="36sp" />
</RelativeLayout>
Activity_main.xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.
com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:paddingBottom="@dimen/activity_vertical_
margin"
android:paddingLeft="@dimen/activity_horizontal_margin"
android:paddingRight="@dimen/activity_horizontal_
margin"
android:paddingTop="@dimen/activity_vertical_margin"
tools:context="com.example.vikasojha.quizbee.
MainActivity"
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/quizapp"
android:layout_marginTop="48dp"
android:textSize="60dp"
android:id="@+id/textView"
android:layout_alignParentTop="true"
android:layout_alignLeft="@+id/editName"
android:layout_alignStart="@+id/editName"
android:textColor="#F44336" />
<Button
android:layout_width="200dp"
android:layout_height="52dp"
android:text="Start"
android:id="@+id/button"
android:textSize="30dp"
android:layout_above="@+id/button2"
android:layout_alignLeft="@+id/editName"
android:layout_alignStart="@+id/editName"
android:layout_marginBottom="25dp"
android:background="#FF5722"
android:textColor="#ffffff" />
<EditText
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:inputType="textPersonName"
android:ems="10"

```

```

android:id="@+id/editName"
android:textColor="#df040b"
android:hint="Enter your name"
android:layout_centerVertical="true"
android:layout_centerHorizontal="true" />
<Button
android:layout_width="200dp"
android:layout_height="52dp"
android:text="About"
android:id="@+id/button2"
android:textSize="30dp"
android:layout_marginBottom="33dp"
android:layout_alignParentBottom="true"
android:layout_alignLeft="@+id/button"
android:layout_alignStart="@+id/button"
android:background="#01579B"
android:textColor="#ffffff" />
</RelativeLayout>
Activity_questions.xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.
com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:paddingBottom="@dimen/activity_vertical_
margin"
android:paddingLeft="@dimen/activity_horizontal_margin"
android:paddingRight="@dimen/activity_horizontal_
margin"
android:paddingTop="@dimen/activity_vertical_margin"
tools:context="com.example.vikasojha.quizbee.
QuestionsActivity">
<TextView
android:layout_width="200dp"
android:layout_height="wrap_content"
android:textAppearance="?android:attr/textAppearanceL-
arge"
android:id="@+id/DispName"
android:textColor="@color/accent_material_light"
android:layout_alignParentTop="true"
android:layout_alignParentLeft="true"
android:layout_alignParentStart="true" />
<RadioGroup
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignLeft="@+id/DispName"
android:layout_alignStart="@+id/DispName"
android:id="@+id/answersgrp"
android:clickable="true"

```

```
android:layout_centerVertical="true">
<!--android:layout-->
<!--android:checkedButton="@+id/radioButton"-->
<RadioButton
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="A"
android:id="@+id/radioButton"
android:checked="false"/>
<RadioButton
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="B"
android:id="@+id/radioButton2"
android:checked="false"/>
<RadioButton
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="C"
android:id="@+id/radioButton3"
android:checked="false"/>
<RadioButton
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="D"
android:id="@+id/radioButton4"
android:checked="false"/>
</RadioGroup>
<Button
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Next Question"
android:id="@+id/button3"
android:layout_marginTop="27dp"
android:layout_below="@+id/answersgrp"
android:layout_alignParentRight="true"
android:layout_alignParentEnd="true"
android:background="#FF5722"
android:textColor="#ffffff"/>
<Button
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Quit"
android:id="@+id/buttonquit"
android:layout_marginTop="20dp"
android:layout_below="@+id/button3"
android:layout_alignParentRight="true"
```

```
android:layout_alignParentEnd="true"
android:background="#01579B"
android:textColor="#ffffff"/>
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:textAppearance="?android:attr/textAppearanceLarge"
android:text="Questions"
android:id="@+id/tvque"
android:layout_marginBottom="52dp"
android:layout_above="@+id/answersgrp"
android:layout_alignParentLeft="true"
android:layout_alignParentStart="true"/>
<TextView
android:layout_width="wrap_content"
android:layout_height="24dp"
android:textAppearance="@color/abc_background_cache_hint_selector_material_dark"
android:text="Your Score"
android:id="@+id/textView3"
android:textColor="#000000"
android:textSize="19dp"
android:layout_alignParentBottom="true"
android:layout_alignParentLeft="true"/>
<TextView
android:layout_width="wrap_content"
android:layout_height="24dp"
android:textAppearance="@color/abc_background_cache_hint_selector_material_dark"
android:id="@+id/textView4"
android:text="0"
android:textColor="#000000"
android:layout_alignParentBottom="true"
android:textAlignment="center"
android:layout_alignParentRight="true"
android:textSize="19dp"
android:gravity="center_horizontal"/>
</RelativeLayout>
Activity_result.xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:paddingBottom="@dimen/activity_vertical_margin"
android:paddingLeft="@dimen/activity_horizontal_margin"
```



```

android:paddingRight="@dimen/activity_horizontal_margin"
android:paddingTop="@dimen/activity_vertical_margin"
tools:context="com.example.vikasojha.quizbee.ResultActivity">

```

```
<TextView
```

```

android:layout_width="wrap_content"
android:layout_height="28dp"
android:textAppearance="?android:attr/textAppearanceLarge"
android:text="Large Text"
android:id="@+id/tvres"
android:layout_alignParentTop="true"
android:layout_centerHorizontal="true"
android:layout_marginTop="70dp"
android:layout_alignParentEnd="true"
android:layout_alignParentStart="true"
android:background="#F44336"
android:textColor="#000000"
android:textAlignment="center"
android:textSize="19dp"
android:gravity="center_horizontal"
android:layout_alignParentLeft="true"
android:layout_alignParentRight="true" />

```

```
<Button
```

```

android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Restart"
android:id="@+id/btnRestart"
android:layout_alignParentBottom="true"
android:layout_marginBottom="119dp"
android:layout_alignParentLeft="true"
android:layout_alignParentStart="true"
android:background="#01579B"
android:textColor="#ffffff" />

```

```
<TextView
```

```

android:layout_width="wrap_content"
android:layout_height="28dp"
android:textAppearance="?android:attr/textAppearanceLarge"
android:text="Large Text"
android:id="@+id/tvres2"
android:background="#76FF03"
android:layout_below="@+id/tvres"
android:layout_alignParentLeft="true"
android:layout_alignParentStart="true"
android:layout_marginTop="31dp"
android:layout_alignParentRight="true"
android:layout_alignParentEnd="true"
android:textColor="#000000"
android:textAlignment="center"

```

```

android:textSize="19dp"
android:gravity="center_horizontal" />

```

```
<TextView
```

```

android:layout_width="wrap_content"
android:layout_height="28dp"
android:textAppearance="?android:attr/textAppearanceLarge"
android:text="Large Text"
android:id="@+id/tvres3"
android:background="#FFEB3B"
android:layout_below="@+id/tvres2"
android:layout_marginTop="33dp"
android:layout_alignRight="@+id/tvres2"
android:layout_alignEnd="@+id/tvres2"
android:layout_alignParentEnd="true"
android:layout_alignParentStart="true"
android:textColor="#000000"
android:textAlignment="center"
android:textSize="19dp"
android:layout_alignParentRight="true"
android:layout_alignParentLeft="true"
android:gravity="center_horizontal" />

```

```
</RelativeLayout>
```

```
MainActivity.java
```

```

package com.example.vikasojha.quizbee;
import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.text.TextUtils;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Button startbutton=(Button)findViewById(R.id.button);
        Button aboutbutton=(Button)findViewById(R.id.button2);
        final EditText nametext=(EditText)findViewById(R.id.editName);
        startbutton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String name=nametext.getText().toString();
            }
            @Override
            public void onClick(View v) {
                Intent intent=new
                Intent(getApplicationContext(),DeveloperActivity.class);
                startActivity(intent);
            }
        });
    }
}

```

```
QuestionActivity.java
```

```
package com.example.vikasojha.quizbee;
import android.content.Intent
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.text.TextUtils;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.RelativeLayout;
import android.widget.TextView;
import android.widget.Toast;
public class QuestionsActivity extends AppCompatActivity {
    TextView tv;
    Button submitbutton, quitbutton;
    RadioGroup radio_g;
    RadioButton rb1,rb2,rb3,rb4;
    String questions[] = {
        "Which method can be defined only once in a program?",
        "Which of these is not a bitwise operator?",
        "Which keyword is used by method to refer to the object
        that invoked it?",
        "Which of these keywords is used to define interfaces in
        Java?",
        "Which of these access specifiers can be used for an
        interface?",
        "Which of the following is correct way of importing an
        entire package 'pkg'?",
        "What is the return type of Constructors?",
        "Which of the following package stores all the standard
        java classes?",
        "Which of these method of class String is used to compare
        two String objects for their equality?",
        "An expression involving byte, int, & literal numbers is
        promoted to which of these?";
    String answers[] = {"main method","<=", "this","inter-
    face","public","import pkg.*","None of the mentioned","-
    java","equals()","int"}; String opt[] = {"finalize method","main
    method","static method","private method",
    "&","&=","|=","<=",
    "import","this","catch","abstract",
    "Interface","interface","intf","Intf",
    "public","protected","private","All of the mentioned",
    "Import pkg. ","import pkg.*","Import pkg.*","import pkg.",
    "int","float","void","None of the mentioned",
    "lang","java","util","java.packages",
    "equals()","Equals()","isequal()","Isequal()",
    "int","long","byte","float"};
    int flag=0;
    public static int marks=0,correct=0,wrong=0;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_questions);
        final TextView score = (TextView)findViewById(R.
        id.textView4);
        TextView textView=(TextView)findViewById(R.
        id.DispName);
        Intent intent = getIntent();
        String name= intent.getStringExtra("myname");
        if (name.trim().equals(""))
            textView.setText("Hello User");
        else
            textView.setText("Hello " + name);
        submitbutton=(Button)findViewById(R.id.button3);
        quitbutton=(Button)findViewById(R.id.buttonquit);
        tv=(TextView) findViewById(R.id.tvque);
        radio_g=(RadioGroup)findViewById(R.id.answersgrp);
        rb1=(RadioButton)findViewById(R.id.radioButton);
        rb2=(RadioButton)findViewById(R.id.radioButton2);
        rb3=(RadioButton)findViewById(R.id.radioButton3);
        rb4=(RadioButton)findViewById(R.id.radioButton4);
        tv.setText(questions[flag]);
        rb1.setText(opt[0]);
        rb2.setText(opt[1]);
        rb3.setText(opt[2]);
        rb4.setText(opt[3]);
        submitbutton.setOnClickListener(new View.
        OnClickListener() {
            @Override
            public void onClick(View v) {
                //int color = mBackgroundColor.getColor();
                //mLayout.setBackgroundColor(color);
                if(radio_g.getCheckedRadioButtonId()==-1){
                    Toast.makeText(getApplicationContext(), "Please select one
                    choice", Toast.LENGTH_SHORT).show();return;}
                RadioButton uans = (RadioButton) findViewById(radio_g.
                getCheckedRadioButtonId());
                String ansText = uans.getText().toString();//
                Toast.makeText(getApplicationContext(), ansText, Toast.
                LENGTH_SHORT).show();
                if(ansText.equals(answers[flag])) {
                    correct++;
                    Toast.makeText(getApplicationContext(), "Correct", Toast.
                    LENGTH_SHORT).show();}
                else {
                    wrong++;
                    Toast.makeText(getApplicationContext(), "Wrong", Toast.
                    LENGTH_SHORT).show();}
                flag++;
                if (score != null)
                    score.setText(""+correct);
                if(flag<questions.length)
                {
                    tv.setText(questions[flag]);
```

```

rb1.setText(opt[flag*4]);
rb2.setText(opt[flag*4 +1]);
rb3.setText(opt[flag*4 +2]);
rb4.setText(opt[flag*4 +3]);
}
else
{
marks=correct;
Intent in = new Intent(getApplicationContext(),ResultActivity.
class);
startActivity(in);
}
radio_g.clearCheck();
}
});
quitbutton.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View v) {
Intent intent=new Intent (get Application Context (),
ResultActivity.class);
startActivity(intent);
}
});
}
}
ResultActivity.java
package com.example.vikasojha.quizbee;
import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.QuickContactBadge;
import android.widget.TextView;
import org.w3c.dom.Text;
public class ResultActivity extends AppCompatActivity {
TextView tv, tv2, tv3;
Button btnRestart;
@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_result);
tv = (TextView)findViewById(R.id.tvres);
tv2 = (TextView)findViewById(R.id.tvres2);
tv3 = (TextView)findViewById(R.id.tvres3);
btnRestart = (Button) findViewById(R.id.btnRestart);
StringBuffer sb = new StringBuffer();
sb.append("Correct answers: " + QuestionsActivity.correct
+ "\n");
StringBuffer sb2 = new StringBuffer();
sb2.append("Wrong Answers: " + QuestionsActivity.wrong
+ "\n");
StringBuffer sb3 = new StringBuffer();

```

```

sb3.append("Final Score: " + QuestionsActivity.correct +
"\n");
tv.setText(sb);
tv2.setText(sb2);
tv3.setText(sb3);
QuestionsActivity.correct=0;
QuestionsActivity.wrong=0;
btnRestart.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View v) {
Intent in = new Intent(getApplicationContext(),MainActivity.
class);
startActivity(in);
}
});
}
}
BackgroundColor.java
package com.example.vikasojha.quizbee;
import android.graphics.Color;
/**
Created by Sushant on 23-11-2016.
*/
import java.util.Random;
public class BackgroundColor {
private String[] mColors = {
"#39add1", // light blue
"#3079ab", // dark blue
"#c25975", // mauve
"#e15258", // red
"#f9845b", // orange
"#838cc7", // lavender
"#7d669e", // purple
"#53bbb4", // aqua
"#51b46d", // green
"#e0ab18", // mustard
"#637a91", // dark gray
"#f092b0", // pink
"#b7c0c7" // light gray}
};
public int getColor(){
//Randomly generate a color
String color;
Random randomGenerator = new Random();
int randomNumber = randomGenerator.nextInt(mColors.
length);
color = mColors[randomNumber];
int colorAsInt;
colorAsInt = Color.parseColor(color);
return colorAsInt;
}
}

```

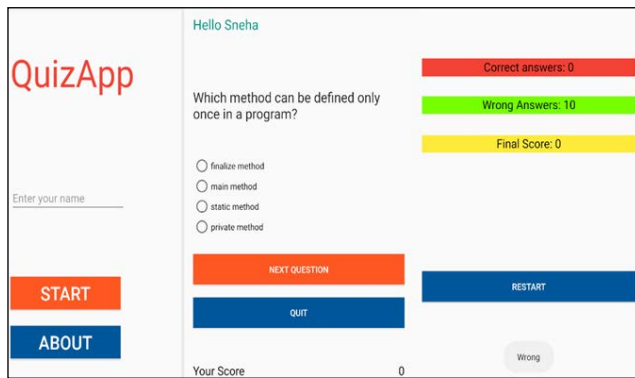



Figure 7. Output Screens

Features

- Product and component based
- Creating and changing issues at ease
- Query issue list to any depth
- Easy and fast retrieval of information
- Well-designed report
- Better storage capacity

Conclusion

Project Conclusion

All application functionalities work correctly in working environment.

The main purpose of our project is to develop the application that offers new aspects of learning and improving knowledge in educational area.

Future Enhancement

The same application can be developed for iOS users as well for better reachability. We will try to improve its quality.

References

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