

PRACITCAL-9

AIM:

Create an application to make INSERT,UPDATE,DELETE and SHOW operation on SQLite DATABASE.

PROGRAM CODES:

- **Activity_main.xml:**

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/display"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/parth_patel_19dcs098"
        android:textSize="16sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
```

```
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.092" />
```

```
<EditText
    android:id="@+id/etxtID"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="152dp"
    android:ems="10"
    android:fontFamily="sans-serif-condensed"
    android:hint="@string/id"
    android:inputType="textPersonName"
    android:minHeight="48dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    android:importantForAutofill="no" />
```

```
<EditText
    android:id="@+id/etxtName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="52dp"
    android:ems="10"
    android:fontFamily="sans-serif-condensed"
    android:hint="@string/name2"
    android:importantForAutofill="no"
    android:inputType="textPersonName"
    android:minHeight="48dp"
    app:layout_constraintEnd_toEndOf="@+id/etxtID"
    app:layout_constraintStart_toStartOf="@+id/etxtID"
    app:layout_constraintTop_toBottomOf="@+id/etxtID"
    tools:ignore="TextContrastCheck" />
```

```
<EditText
    android:id="@+id/etxtMark"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="72dp"
        android:ems="10"
    android:fontFamily="sans-serif-condensed"
    android:hint="@string/marks"
    android:inputType="number"
    android:minHeight="48dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="@+id/etxtName"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="@+id/etxtName"
    app:layout_constraintTop_toBottomOf="@+id/etxtName"
    app:layout_constraintVertical_bias="0.016"
    tools:ignore="SpeakableTextPresentCheck"
    android:importantForAutofill="no" />
```

```
<Button
    android:id="@+id/buttonInsert"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="500dp"
    android:backgroundTint="#8BC34A"
    android:text="@string/insert"
    android:textColor="#37474F"
    app:layout_constraintEnd_toStartOf="@+id/buttonShow"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="@+id/etxtMark"
    app:layout_constraintTop_toTopOf="parent" />
```

```
<Button
    android:id="@+id/buttonShow"
```

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="500dp"
android:layout_marginEnd="12dp"
android:backgroundTint="#FFEB3B"
android:text="@string/show"
android:textColor="#BF360C"
app:layout_constraintEnd_toEndOf="@+id/etxtMark"
app:layout_constraintTop_toTopOf="parent" />
```

<Button

```
android:id="@+id/buttonUpdate"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="44dp"
android:backgroundTint="#00BCD4"
android:text="@string/update"
android:textColor="@color/black"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toStartOf="@+id/buttonDelete"
app:layout_constraintHorizontal_bias="0.0"
app:layout_constraintStart_toStartOf="@+id/buttonInsert"
app:layout_constraintTop_toBottomOf="@+id/buttonInsert"
app:layout_constraintVertical_bias="0.0"
tools:ignore="TextContrastCheck" />
```

<Button

```
android:id="@+id/buttonDelete"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:backgroundTint="#F44336"
android:text="@string/delete"
android:textColor="#000000"
app:layout_constraintBottom_toBottomOf="parent"
```

```
app:layout_constraintEnd_toEndOf="@+id/buttonShow"  
app:layout_constraintTop_toBottomOf="@+id/buttonShow"  
app:layout_constraintVertical_bias="0.814"  
tools:ignore="TextContrastCheck" />
```

```
</androidx.constraintlayout.widget.ConstraintLayout>
```

- **Strings.xml:**

```
<resources>  
    <string name="app_name">DataBase</string>  
    <string name="parth_patel_19dcs098">PARTH PATEL-19DCS098</string>  
    <string name="insert">INSERT</string>  
    <string name="marks">Marks</string>  
    <string name="name">Name</string>  
    <string name="name2">NAME</string>  
    <string name="id">ID</string>  
    <string name="show">SHOW</string>  
    <string name="update">UPDATE</string>  
    <string name="delete">DELETE</string>  
</resources>
```

- **MainActivity.java:**

```
package com.parthnpatel.database;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    EditText id,name,marks;
    Button insert,update,delete,show;

    helper mydb;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        id=findViewById(R.id.etxtID);
        name=findViewById(R.id.etxtName);
        marks=findViewById(R.id.etxtMark);
```

```
insert=findViewById(R.id.buttonInsert);
show=findViewById(R.id.buttonShow);
update=findViewById(R.id.buttonUpdate);
delete=findViewById(R.id.buttonDelete);

mydb=new helper(MainActivity.this);

insert.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        boolean flag=mydb.insert(name.getText().toString(),marks.getText().toString());
        if (flag==true)
            Toast.makeText(getApplicationContext(),"Data
Inserted",Toast.LENGTH_SHORT).show();
        else
            Toast.makeText(getApplicationContext(),"Error in data
insertion",Toast.LENGTH_SHORT).show();
    }
});

show.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Cursor cursor=mydb.show();
        StringBuffer stringBuffer =new StringBuffer();
        if(cursor.getCount()<=0){
            AlertDialog.Builder builder=new AlertDialog.Builder(MainActivity.this);
            builder.setMessage("DATA NOT AVAILABLE!!");
            builder.setTitle("STUDENT DATA");
            builder.show();
        }

        else
        {
```

```
while (cursor.moveToNext())
{
    stringBuffer.append("ID:"+cursor.getString(0)+"\n");
    stringBuffer.append("Name:"+cursor.getString(1)+"\n");
    stringBuffer.append("Mark:"+cursor.getString(2)+"\n");
}

AlertDialog.Builder builder=new AlertDialog.Builder(MainActivity.this);
builder.setMessage(stringBuffer.toString());
builder.setTitle("STUDENT DATA");
builder.show();
}
}
});

update.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        boolean
flag=mydb.updateDB(id.getText().toString(),name.getText().toString(),marks.getText().toStri
ng());
        if (flag==true)
        {
            Toast.makeText(getApplicationContext(),"DATA UPDATED
SUCCESSFULLY",Toast.LENGTH_LONG).show();
        }
        else
            Toast.makeText(getApplicationContext(),"ERROR: DATA CANNOT BE
UPDATED",Toast.LENGTH_LONG).show();
        }
    });

delete.setOnClickListener(new View.OnClickListener() {
```



```
@Override
public void onClick(View v) {
    Boolean flag=mydb.deleteRecord(id.getText().toString());
    if(flag==true)
        Toast.makeText(getApplicationContext(),"DATA
DELETED",Toast.LENGTH_LONG).show();
    else
        Toast.makeText(getApplicationContext(),"ERROR: DATA CANNOT BE
DELETED",Toast.LENGTH_LONG).show();

    }
});

}
}
```

- **helper.java:**

```
package com.parthnpatel.database;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

public class helper extends SQLiteOpenHelper {

    String dataBaseName="practical.db";
    String tableName="computer";

    String column_1="id";
    String column_2="name";
    String column_3="mark";

    public helper(Context context){

        super(context,"practical.db",null,1);
        SQLiteDatabase db=this.getWritableDatabase();
    }
    @Override
    public void onCreate(SQLiteDatabase db) {
        db.execSQL("create table computer (id integer primary key autoincrement,name
text,mark integer)");
    }
}
```

@Override

```
public void onUpgrade(SQLiteDatabase db, int i, int i1) {  
    db.execSQL("drop table if exists "+tableName);  
  
    onCreate(db);  
}
```

```
public boolean insert(String name,String mark)  
{  
    SQLiteDatabase db=this.getWritableDatabase();  
    ContentValues contentValues=new ContentValues();  
    contentValues.put(column_2,name);  
    contentValues.put(column_3,mark);  
    long res=db.insert(tableName,null,contentValues);  
    if(res==-1)  
    {  
        return false;  
    }  
    else  
    {  
        return true;  
    }  
}
```

```
public boolean updateDB(String id,String name, String marks)  
{  
    SQLiteDatabase db=this.getWritableDatabase();  
    ContentValues contentValues=new ContentValues();  
    contentValues.put(column_1,id);  
    contentValues.put(column_2,name);  
    contentValues.put(column_3,marks);  
    int res=db.update(tableName,contentValues,"id=?",new String[] {id});  
    if(res>0)  
        return true;
```

```
        else
            return false;
    }

    public boolean deleteRecord(String id)
    {
        SQLiteDatabase db=this.getWritableDatabase();
        int a=db.delete(tableName,"id=?",new String[] {id});
        if(a>0)
            return true;
        else
            return false;
    }

    public Cursor show()
    {
        SQLiteDatabase db=this.getWritableDatabase();
        Cursor cursor=db.rawQuery("select * from "+tableName,null);
        return cursor;
    }
}
```

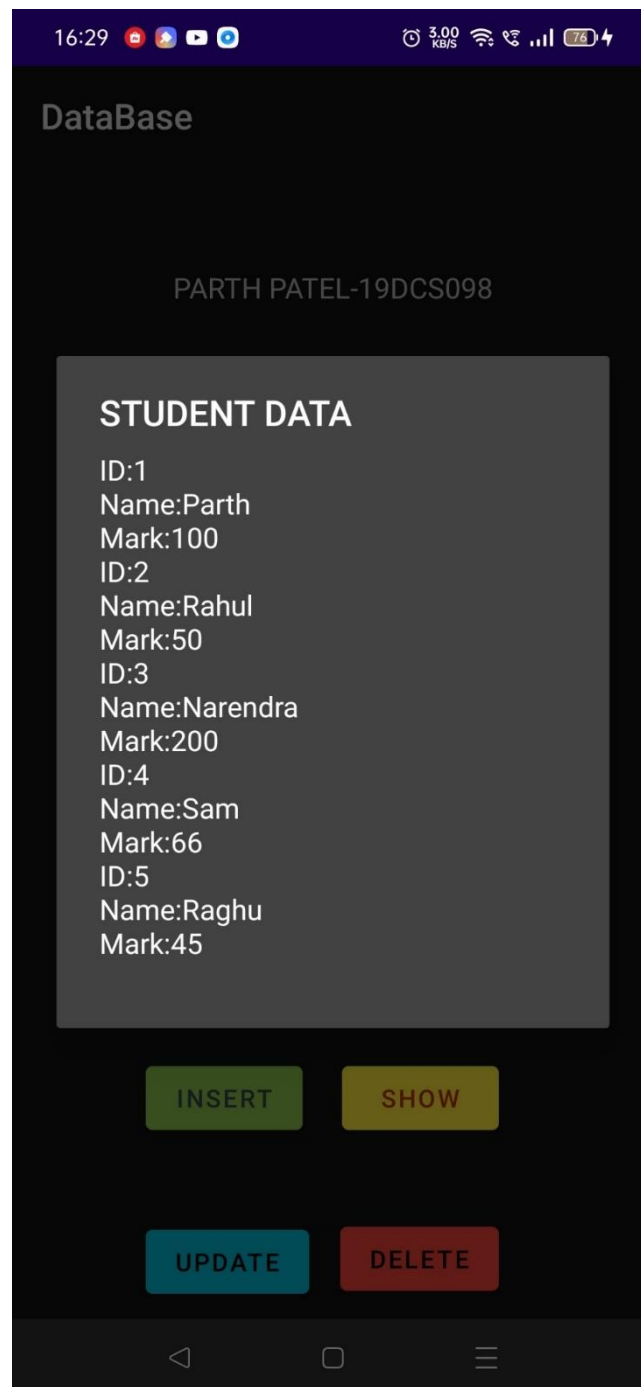
OUTPUT:

The screenshot shows a mobile application interface with a dark background. At the top, the status bar displays the time 16:27, signal strength, and battery level at 76%. The app title 'DataBase' is at the top left. Below it, the text 'PARTH PATEL-19DCS098' is displayed. There are three input fields: 'ID', 'NAME', and 'Marks'. The 'NAME' field is highlighted with a green underline. At the bottom, there are four buttons: 'INSERT' (green), 'SHOW' (yellow), 'UPDATE' (cyan), and 'DELETE' (red). The bottom navigation bar shows standard Android icons.

BASIC UI

The screenshot shows a mobile application interface with a dark background. At the top, there is a status bar with the time 16:28, network speed 18.0 KB/S, and battery level 76%. The app title 'DataBase' is displayed in white. Below the title, the text 'PARTH PATEL-19DCS098' is shown. There are four input fields with the following values: '19DCS098', 'Parth', and '100'. Below the input fields, there are four buttons: 'INSERT' (green), 'SHOW' (yellow), 'UPDATE' (cyan), and 'DELETE' (red). A dark grey toast message 'Data Inserted' is displayed above the 'UPDATE' and 'DELETE' buttons. The bottom of the screen shows the Android navigation bar with back, home, and recent apps icons.

DATA INSERTED



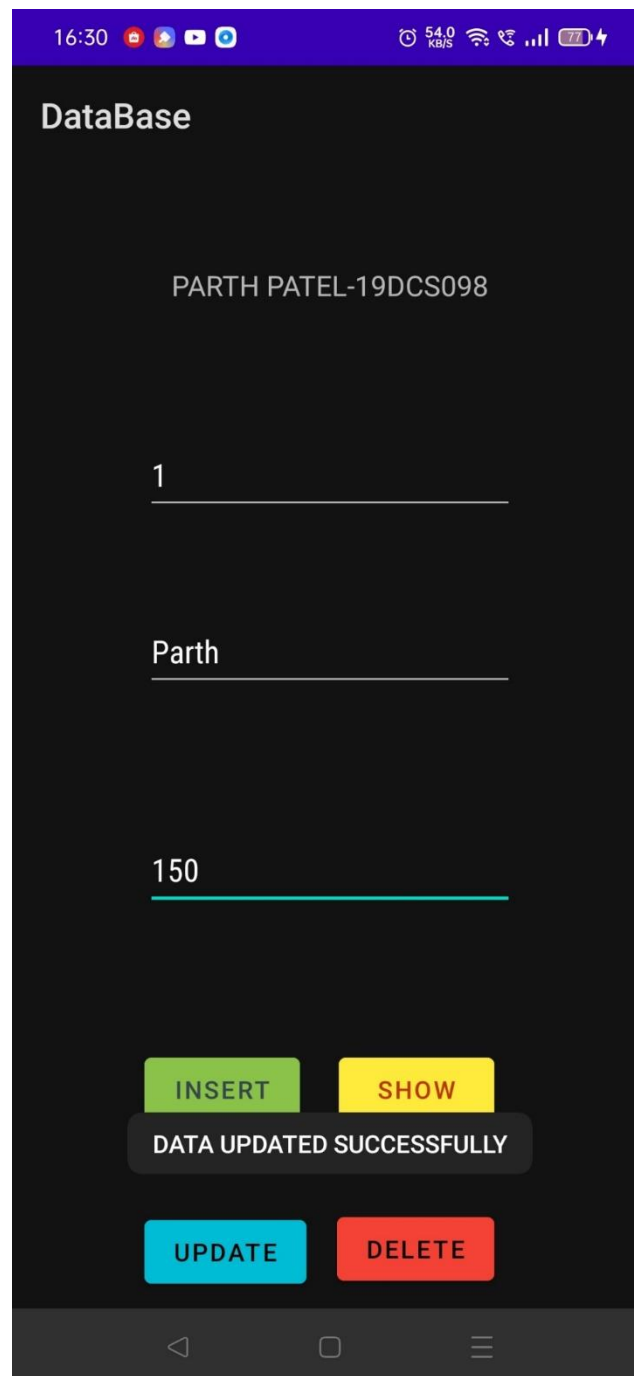
DATA SHOWN

The screenshot shows a mobile application interface with a black background. At the top, there is a status bar with the time 16:30, signal strength, and battery level. Below the status bar, the title 'DataBase' is displayed in white. The main content area contains three input fields: 'ID', 'NAME', and 'Marks', each with a white underline. Below the input fields, there are four buttons: 'INSERT' (green), 'SHOW' (yellow), 'UPDATE' (blue), and 'DELETE' (red). A red error message 'ERROR: DATA CANNOT BE UPDATED' is displayed in a white box. The bottom of the screen shows the Android navigation bar with back, home, and recent apps icons.

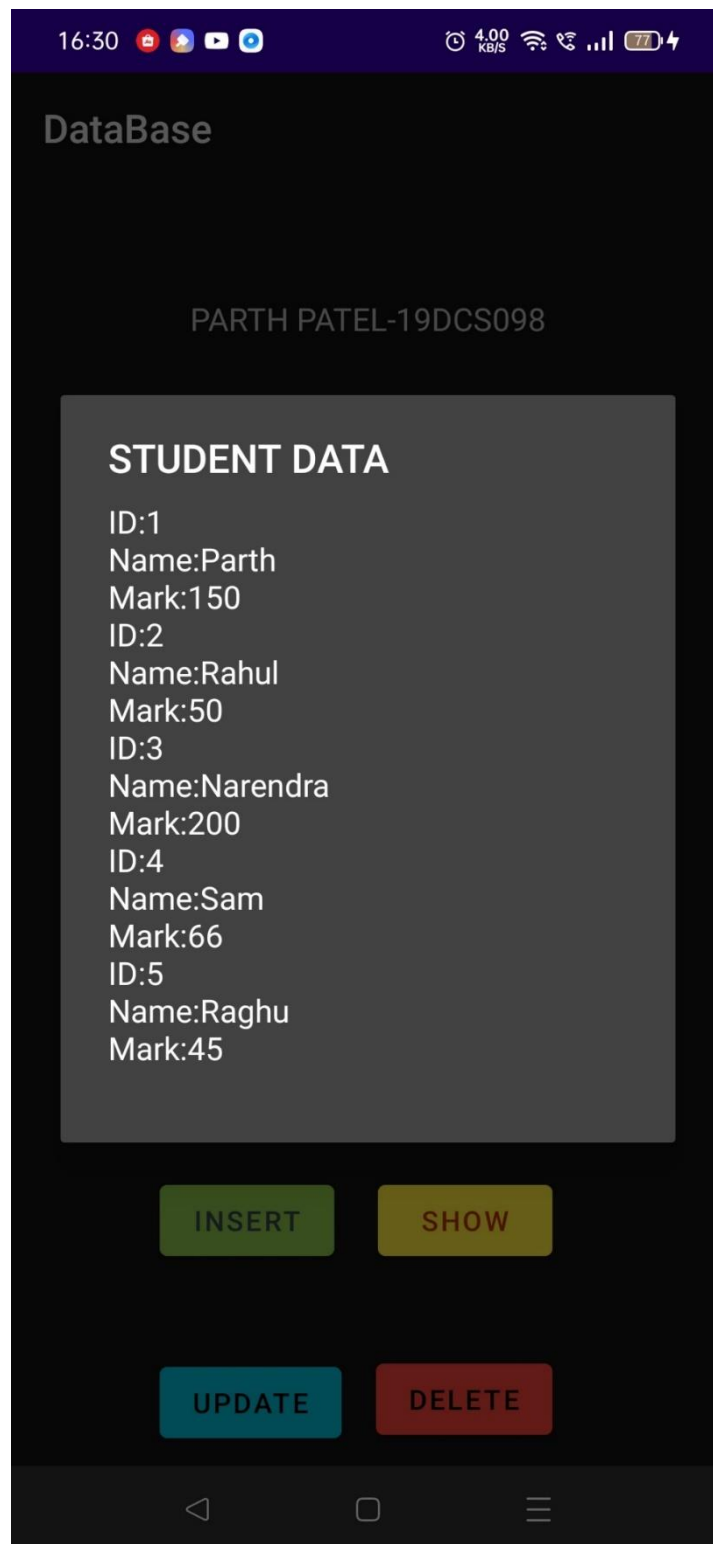
EMPTY FIELDS NOT ALLOWED

The screenshot shows a mobile application interface with a dark background. At the top, the status bar displays the time 16:30, network speed 0.05 KB/s, and battery level 77%. The app title 'DataBase' is at the top left. Below it, the text 'PARTH PATEL-19DCS098' is displayed. There are three input fields: the first contains '19DCS098', the second contains 'Parth', and the third contains '150'. Below the fields are four buttons: 'INSERT' (green), 'SHOW' (yellow), 'UPDATE' (cyan), and 'DELETE' (red). A grey error message box in the center reads 'ERROR: DATA CANNOT BE UPDATED'. The bottom of the screen shows the Android navigation bar with back, home, and recent apps icons.

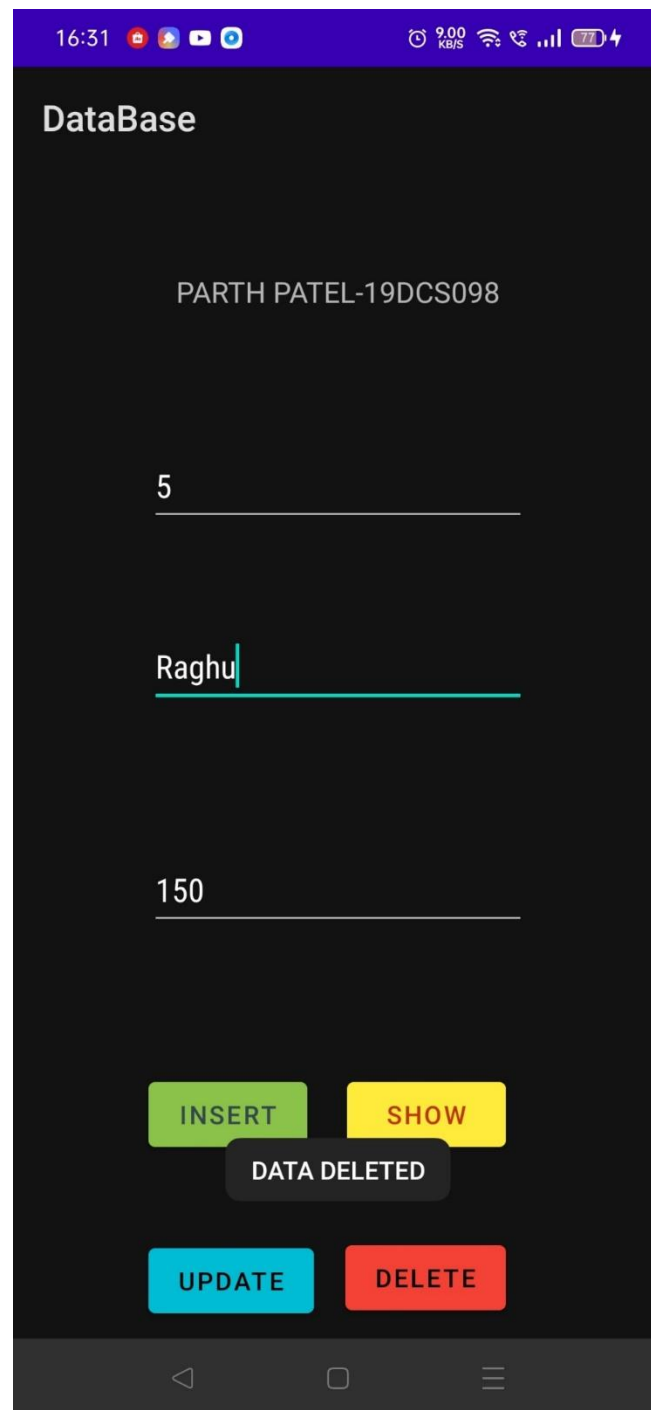
DATA CAANOT BE UPDATED WITHOUT CORRECT INFORMATION



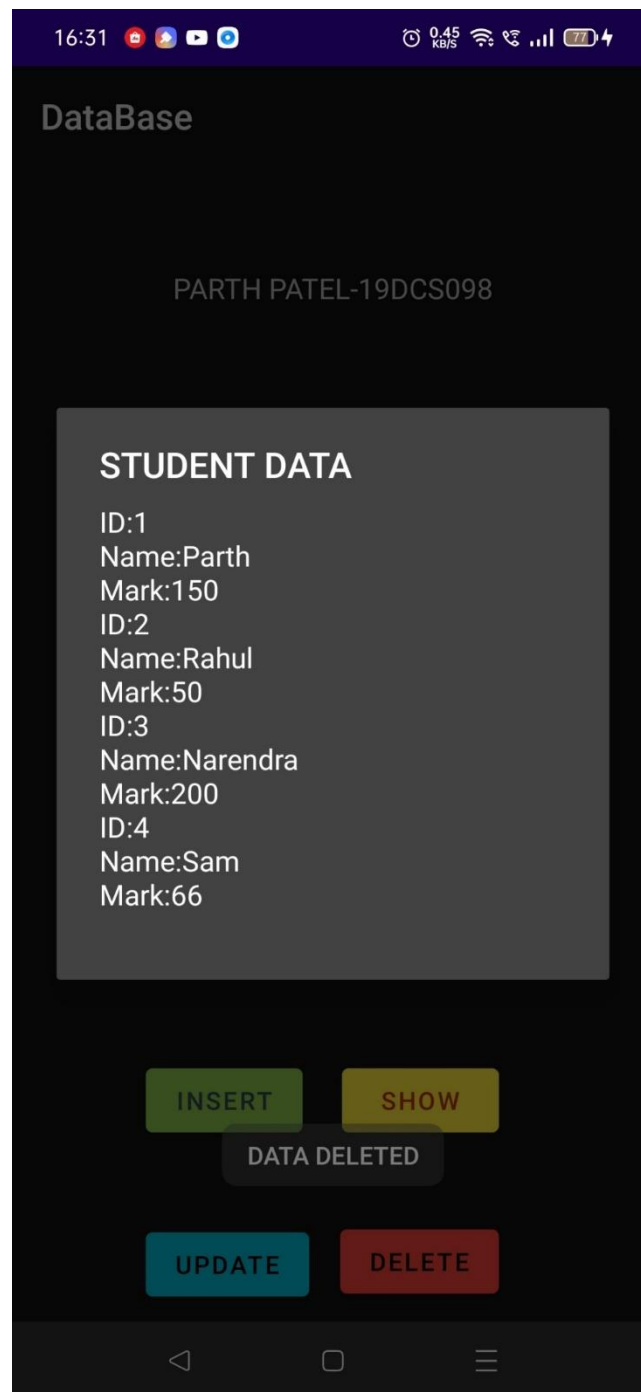
DATA UPDATED



UPDATED DATA REFLECTED



DATA DELETED



DATA BASE UPDATED AFTER DELETION