

美化界面如下：

- 修改符号使其符合用户直觉，如“=”、“CLC”
- 更改配色
- 更改排版布局，使其放松不拥挤



## BUG解决

常规计算器点按加减乘除会互相切换，但这份代码没有实现这个功能，当按下某一个算法符号后，不能切换其他的算法符号。

例如我想要计算“1 + 1”的结果，但是误触到“-”后，不能直接点按“+”更改算法符号，需要全部清除后重新输入。

通过在加减乘除的监听事件中修改如下代码实现直接切换的功能，以加法为例：

```
case R.id.jian: {
    if (ss.length() == 0) {
        edit.setText("0 - ");
        ss = "0 - ";
        break;
    }
}
```

```
        }
        if (ss.contains("+") || ss.contains("-") || ss.contains("x") || ss.
            ss = ss.substring(0,ss.length()-3);
            ss += " - ";
            edit.setText(ss);
            break;
    }

```

具体演示见视频。

---

源码

below is "MainActivity.java"

```
package com.example.myapplication;

import androidx.appcompat.app.AppCompatActivity;

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 {

    Button btn1, btn2, btn3, btn4, btn5, btn6, btn7, btn8, btn9, btn0; // 数字按钮
    Button jia, jian, cheng, chu, dian, sum, clear, back; // +号
    EditText edit; // 显示文本

    private String ss = ""; // 设置一个String类型的变量
    private String ss1 = "1 + ";

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        // 获取页面上的控件
        btn1 = findViewById(R.id.btn1);
        btn2 = findViewById(R.id.btn2);
        btn3 = findViewById(R.id.btn3);
        btn4 = findViewById(R.id.btn4);
        btn5 = findViewById(R.id.btn5);
        btn6 = findViewById(R.id.btn6);
        btn7 = findViewById(R.id.btn7);
        btn8 = findViewById(R.id.btn8);
        btn9 = findViewById(R.id.btn9);
        btn0 = findViewById(R.id.btn0);
        jia = findViewById(R.id.jia);
        jian = findViewById(R.id.jian);
        cheng = findViewById(R.id.cheng);
        chu = findViewById(R.id.chu);
        sum = findViewById(R.id.calculation);
        dian = findViewById(R.id.dian);
        clear = findViewById(R.id.clear);
        edit = findViewById(R.id.edit);
        back = findViewById(R.id.back);
    }
}
```

```
// 按钮的单击事件
btn1.setOnClickListener(new Click());
btn2.setOnClickListener(new Click());
btn3.setOnClickListener(new Click());
btn4.setOnClickListener(new Click());
btn5.setOnClickListener(new Click());
btn6.setOnClickListener(new Click());
btn7.setOnClickListener(new Click());
btn8.setOnClickListener(new Click());
btn9.setOnClickListener(new Click());
btn0.setOnClickListener(new Click());
jia.setOnClickListener(new Click());
jian.setOnClickListener(new Click());
cheng.setOnClickListener(new Click());
chu.setOnClickListener(new Click());
sum.setOnClickListener(new Click());
dian.setOnClickListener(new Click());
clear.setOnClickListener(new Click());
edit.setOnClickListener(new Click());
back.setOnClickListener(new Click());
}

// 设置按钮点击后的监听
class Click implements View.OnClickListener {
    public void onClick(View v) {
        switch (v.getId()) { //switch循环获取点击按钮后的值
            case R.id.clear:
                ss = "";
                edit.setText(ss); //在edittext里面显示字符串ss
            break;

            case R.id.btn0:
                ss += "0";
                edit.setText(ss);
            break;

            case R.id.btn1:
                ss += "1"; // ss=ss+1
                edit.setText(ss);
            break;

            case R.id.btn2:
                ss += "2";
                edit.setText(ss);
            break;

            case R.id.btn3:
                ss += "3";
                edit.setText(ss);
            break;

            case R.id.btn4:
                ss += "4";
                edit.setText(ss);
            break;

            case R.id.btn5:
                ss += "5";
                edit.setText(ss);
            break;
        }
    }
}
```

```
        edit.setText(ss);
    }
    break;

    case R.id.btn6: {
        ss += "6";
        edit.setText(ss);
    }
    break;
    case R.id.btn7: {
        ss += "7";
        edit.setText(ss);
    }
    break;
    case R.id.btn8: {
        ss += "8";
        edit.setText(ss);
    }
    break;
    case R.id.btn9: {
        ss += "9";
        edit.setText(ss);
    }
    break;
    case R.id.dian: {
        if (ss.length() == 0) {
            break;
        } else {
            ss += ".";
            edit.setText(ss);
        }
    }
    break;
    case R.id.jia: {
        if (ss.length() == 0) {
            edit.setText("0 + ");
            ss = "0 + ";
            break;
        }
        if (ss.contains("+") || ss.contains("-") || ss.contains("x") || ss.
            ss = ss.substring(0,ss.length()-3);
        ss += " + ";
        edit.setText(ss);
        break;
    }
    ss += " + ";
    edit.setText(ss);
}
break;
case R.id.jian: {
    if (ss.length() == 0) {
        edit.setText("0 - ");
        ss = "0 - ";
        break;
    }
    if (ss.contains("+") || ss.contains("-") || ss.contains("x") || ss.
        ss = ss.substring(0,ss.length()-3);
        ss += " - ";
        edit.setText(ss);
        break;
    }
}
```

```

        ss += " - ";
        edit.setText(ss);
    }
    break;
    case R.id.cheng: {
        if (ss.length() == 0) {
            edit.setText("0 × ");
            ss = "0 × ";
            break;
        }
        if (ss.contains("+") || ss.contains("-") || ss.contains("x") || ss.
            ss = ss.substring(0,ss.length()-3);
        ss += " × ";
        edit.setText(ss);
        break;
    }

    ss += " × ";
    edit.setText(ss);
}
break;
case R.id.chu: {
    if (ss.length() == 0) {
        edit.setText("0 / ");
        ss = "0 / ";
        break;
    }
    if (ss.contains("+") || ss.contains("-") || ss.contains("x") || ss.
        ss = ss.substring(0,ss.length()-3);
        ss += " / ";
        edit.setText(ss);
        break;
    }

    ss += " / ";
    edit.setText(ss);
}
break;
case R.id.calculation:
    getResult();
    break;
case R.id.back: {
    if (ss.contains(" ")){
        if (ss.indexOf(" ") == ss.length() - 3) {
            ss = ss.substring(0, ss.length() - 3);
            edit.setText(ss);
            break;
        }
    }
    ss = ss.substring(0, ss.length() - 1);
    edit.setText(ss);
    break;
}
}
}

private void getResult() {

```

```
        double result = 0;
        if (ss == null || ss.equals("")) return;
        if (!ss.contains(" ")) return;
        String s1 = ss.substring(0, ss.indexOf(" "));
        String op = ss.substring(ss.indexOf(" ") + 1, ss.indexOf(" ") + 2);
        String s2 = ss.substring(ss.indexOf(" ") + 3);
        if (!s1.equals("") && !s2.equals("")) {
            float d1 = Float.parseFloat(s1);
            float d2 = Float.parseFloat(s2);
            double d1 = Double.parseDouble(s1);
            double d2 = Double.parseDouble(s2);
            switch (op) {
                case "+":
                    result = d1 + d2;
                    break;
                case "-":
                    result = d1 - d2;
                    break;
                case "x":
                    result = d1 * d2;
                    break;
                case "/":
                    if (d2 == 0) {
                        Toast.makeText(MainActivity.this, "不能除以零", Toast.LENGTH_SHORT).show();
                        break;
                    }
                    result = d1 / d2 * 1.0;
            }
            break;
        }
        edit.setText(result + "");
        ss = "" + result;
        int r = (int) result;
        if (r == result) {
            edit.setText(" " + r);
            ss = " " + r;
        } else {
            ss = " " + result; //将double类型的result转成string类型的数据存储在ss中
            ss = ss.substring(0,ss.length()-1);
            edit.setText(result+ "");
            edit.setText(ss);
        }
    }
}
```

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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:orientation="vertical"
    android:padding="30dp" />
```

```
    android:background="#efefef">

        <TextView
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="计算器"
            android:textSize="40sp"
            android:textColor="#999999"
            android:layout_marginBottom="30dp"
            android:gravity="center" />
        <EditText
            android:id="@+id/edit"
            android:textSize="40dp"
            android:layout_width="match_parent"
            android:layout_height="100dp"
            android:gravity="end|bottom"
        />

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="horizontal">
            <Button
                android:id="@+id/clear"
                android:layout_width="0dp"
                android:layout_height="wrap_content"
                android:layout_margin="5dp"
                android:layout_weight="1"
                android:text="clc"
                android:textSize="25dp" />

            <Button
                android:id="@+id/calculation"
                android:layout_width="0dp"
                android:layout_height="wrap_content"
                android:layout_margin="5dp"
                android:layout_weight="1"
                android:text="="
                android:textSize="25dp" />
        </LinearLayout>

        <GridLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:rowCount="4"
            android:columnCount="4"
        >

            <Button
                android:id="@+id/btn1"
                android:layout_width="70dp"
                android:layout_height="wrap_content"
                android:layout_margin="6dp"
                android:text="1"
                android:textSize="25sp" />
            <Button
                android:id="@+id/btn2"
                android:layout_width="70dp"
                android:layout_height="wrap_content"
                android:layout_margin="6dp"
                android:text="2"
            />
        </GridLayout>
    </LinearLayout>

```

```
        android:textSize="25sp" />
        <Button
            android:id="@+id	btn3"
            android:layout_width="70dp"
            android:layout_height="wrap_content"
            android:layout_margin="6dp"
            android:text="3"
            android:textSize="25sp" />

        <Button
            android:id="@+id/jia"
            android:layout_width="70dp"
            android:layout_height="wrap_content"
            android:layout_row="0"
            android:layout_margin="6dp"
            android:text="+"
            android:textSize="25sp" />

        <Button
            android:id="@+id	btn4"
            android:layout_width="70dp"
            android:layout_height="wrap_content"
            android:layout_margin="6dp"
            android:text="4"
            android:textSize="25sp" />
        <Button
            android:id="@+id	btn5"
            android:layout_width="70dp"
            android:layout_height="wrap_content"
            android:layout_margin="6dp"
            android:text="5"
            android:textSize="25sp" />
        <Button
            android:id="@+id	btn6"
            android:layout_width="70dp"
            android:layout_height="wrap_content"
            android:layout_margin="6dp"
            android:text="6"
            android:textSize="25sp" />
        <Button
            android:id="@+id/jian"
            android:layout_width="70dp"
            android:layout_height="wrap_content"
            android:layout_margin="6dp"
            android:text="-"
            android:textSize="25sp" />
        <Button
            android:id="@+id	btn7"
            android:layout_width="70dp"
            android:layout_height="wrap_content"
            android:layout_margin="6dp"
            android:text="7"
            android:textSize="25sp" />
        <Button
            android:id="@+id	btn8"
            android:layout_width="70dp"
            android:layout_height="wrap_content"
            android:layout_margin="6dp"
            android:text="8"
            android:textSize="25sp" />
        <Button
            android:id="@+id	btn9"
            android:layout_width="70dp"
            android:layout_height="wrap_content"
            android:layout_margin="6dp"
            android:text="9"
            android:textSize="25sp" />
```

```

        android:layout_width="70dp"
        android:layout_height="wrap_content"
        android:layout_margin="6dp"
        android:text="9"
        android:textSize="25sp" />
        <Button
            android:id="@+id/cheng"
            android:layout_width="70dp"
            android:layout_height="wrap_content"
            android:layout_margin="6dp"
            android:text="x"
            android:textAllCaps="false"
            android:textSize="25sp" />
        <Button
            android:id="@+id/btn0"
            android:layout_width="70dp"
            android:layout_height="wrap_content"
            android:layout_margin="6dp"
            android:text="0"
            android:textSize="25sp" />
        <Button
            android:id="@+id/dian"
            android:layout_width="70dp"
            android:layout_height="wrap_content"
            android:layout_margin="6dp"
            android:text=". "
            android:textSize="25sp" />
        <Button
            android:id="@+id/back"
            android:layout_width="70dp"
            android:layout_height="wrap_content"
            android:layout_margin="6dp"
            android:text="←"
            android:textSize="25sp" />
        <Button
            android:id="@+id/chu"
            android:layout_width="70dp"
            android:layout_height="wrap_content"
            android:layout_margin="6dp"
            android:text="÷"
            android:textSize="25sp" />
    </GridLayout>
</LinearLayout>

```

below is "theme.xml"

```

<resources xmlns:tools="http://schemas.android.com/tools">
    <!-- Base application theme. -->
    <style name="Theme.MyApplication" parent="Theme.MaterialComponents.DayNight.DarkActionBar">
        <!-- Primary brand color. -->
        <item name="colorPrimary">@color/grey</item>
        <item name="colorPrimaryVariant">@color/darkGrey</item>
        <item name="colorOnPrimary">@color/white</item>
        <!-- Secondary brand color. -->
        <item name="colorSecondary">@color/teal_200</item>
        <item name="colorSecondaryVariant">@color/teal_700</item>
        <item name="colorOnSecondary">@color/black</item>
        <!-- Status bar color. -->
        <item name="android:statusBarColor" tools:targetApi="l">?attr/colorPrimaryVariant
        <!-- Customize your theme here. -->
    </style>

```

```
</resources>
```

below is "color.xml"

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <color name="purple_200">#FFBB86FC</color>
    <color name="purple_500">#FF6200EE</color>
    <color name="purple_700">#FF3700B3</color>
    <color name="teal_200">#9cc679</color>
    <color name="teal_700">#79a852</color>
    <color name="black">#FF000000</color>
    <color name="white">#FFFFFF</color>
    <color name="grey">#a3a3a3</color>
    <color name="darkGrey">#5e5e5e</color>

</resources>
```