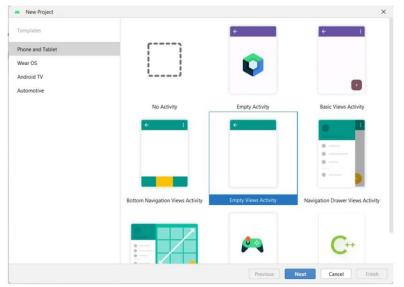
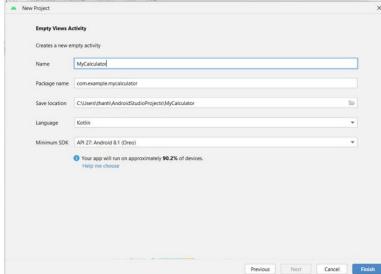
BÀI THỰC HÀNH 1: ỨNG DỤNG MÁY TÍNH CẦM TAY

1. Tạo dự án mới:

- Mở Android Stdio và click vào File → New → New project.
- Đặt tên project theo cú pháp sau "StudentID_ Calculator" và click Next
- Chon Minimum SDK như hình và click Next.
- Chọn Empty Activity và click Next.
- Cuối cùng, click Finish
- Đợi project khởi tạo





- 2. Thiết kế giao diên cho ứng dung:
 - Click vào app → res → layout → activity main.xml
 - Chọn vào thẻ Text để soan code
 - Xóa đoạn code có sẵn và viết lại như sau (hoặc tự trình bày giao diện theo ý mình)

Code for Activity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
    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"
    tools:context=".MainActivity">
    <TextView
        android: id="@+id/tvInput"
        android: layout_width="match_parent"
        android: layout height="250dp"
        android:background="#efefef"
        android: ems="10"
        android:gravity="end|center_vertical|bottom"
        android:maxLength="12"
        android:padding="10dp"
        android:textSize="48sp" />
    <LinearLayout</pre>
        android:id="@+id/llOne"
        android:layout_width="match_parent"
        android:layout height="wrap content"
        android:layout_marginTop="2dp"
```

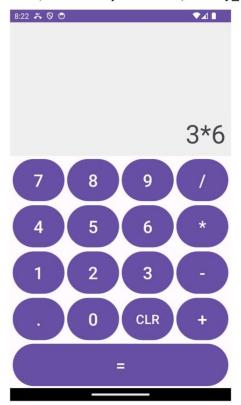
```
android:layout weight="1"
    android: orientation="horizontal">
        android:layout_marginStart="5dp"
        android:layout marginEnd="5dp"
        android: id="@+id/btnSeven"
        android:layout width="0dp"
        android: layout_height="match_parent"
        android:layout_weight="1"
android:onClick="onDigit"
        android: textSize="32sp"
        android:text="7" />
    <Button
        android:id="@+id/btnEight"
        android:layout width="0dp"
        android: layout marginEnd="5dp"
        android: layout height="match parent"
        android:layout_weight="1"
android:onClick="onDigit"
        android: textSize="32sp"
        android:text="8" />
    <Button
        android:id="@+id/btnNine"
        android:layout width="0dp"
        android:layout_marginEnd="5dp"
        android: layout height="match parent"
        android:layout_weight="1"
        android:onClick="onDigit"
        android: textSize="32sp"
        android:text="9" />
    < Button
        android:id="@+id/btnDivide"
        android:layout_width="0dp"
        android: layout marginEnd="5dp"
        android: layout_height="match_parent"
        android:layout_weight="1"
        android: onClick="onOperator"
        android: textSize="32sp"
        android:text="/" />
</LinearLayout>
<LinearLayout</pre>
    android:id="@+id/llTwo"
    android:layout_width="match_parent"
    android: layout height="wrap content"
    android:layout_weight="1"
    android:orientation="horizontal">
    <Button
        android:layout marginStart="5dp"
        android:layout marginEnd="5dp"
        android:id="@+id/btnFour"
        android:layout_width="0dp"
        android: layout height="match parent"
        android:layout_weight="1"
        android:onClick="onDigit"
        android: textSize="32sp"
        android:text="4" />
    <Button
        android:layout marginEnd="5dp"
        android:id="@+id/btnFive"
        android:layout width="0dp"
        android:layout_height="match_parent"
        android: layout weight="1"
        android: onClick="onDigit"
```

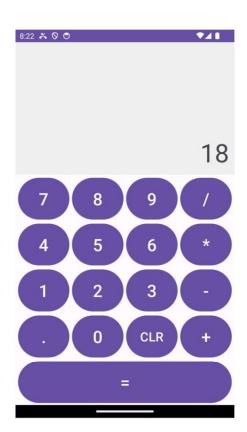
```
android:textSize="32sp"
        android:text="5" />
        android:layout marginEnd="5dp"
        android: id="@+id/btnSix"
        android:layout width="0dp"
        android: layout height="match parent"
        android:layout_weight="1"
        android:onClick="onDigit"
        android: textSize="32sp"
        android:text="6" />
    <Button
        android:layout marginEnd="5dp"
        android: id="@+id/btnMultiply"
        android: layout width="0dp"
        android: layout height="match parent"
        android: layout weight="1"
        android: onClick="onOperator"
        android:textSize="32sp"
        android:text="*" />
</LinearLayout>
<LinearLayout
    android:id="@+id/llThree"
    android:layout width="match parent"
    android: layout height="wrap content"
    android:layout_weight="1"
    android:orientation="horizontal">
    <Button
        android:layout marginStart="5dp"
        android:layout marginEnd="5dp"
        android: id="@+id/btnOne"
        android:layout_width="0dp"
        android: layout height="match parent"
        android:layout_weight="1"
        android:onClick="onDigit"
        android: textSize="32sp"
        android:text="1" />
    <Button
        android:layout marginEnd="5dp"
        android: id="@+id/btnTwo"
        android:layout_width="0dp"
        android: layout_height="match_parent"
        android:layout_weight="1"
        android:onClick="onDigit"
        android: textSize="32sp"
        android:text="2" />
    <Button
        android:layout marginEnd="5dp"
        android:id="@+id/btnThree'
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
android:onClick="onDigit"
        android: textSize="32sp"
        android:text="3" />
        android:layout_marginEnd="5dp"
        android: id="@+id/btnSubtract'
        android:layout_width="0dp"
        android:layout height="match parent"
        android:layout_weight="1"
        android:onClick="onOperator"
        android: textSize="32sp"
```

```
android:text="-" />
</LinearLayout>
<LinearLayout</pre>
    android:id="@+id/llFour"
    android:layout width="match parent"
    android:layout height="wrap content"
    android: layout weight="1"
    android: orientation="horizontal">
        android:layout_marginStart="5dp"
        android:layout marginEnd="5dp"
        android: id="@+id/btnDecimal"
        android:layout width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android: onClick="onDecimalPoint"
        android:textSize="32sp"
        android:text="." />
    <Button
        android:id="@+id/btnZero"
        android:layout width="0dp"
        android: layout height="match parent"
        android:layout marginEnd="5dp"
        android:layout_weight="1"
        android: onClick="onDigit"
        android:textSize="32sp"
        android:text="0" />
    <Button
        android:layout_marginEnd="5dp"
        android: id="@+id/btnClear"
        android:layout width="0dp"
        android: layout height="match parent"
        android:layout_weight="1"
        android:onClick="onClear"
        android:textSize="24sp"
        android:text="CLR" />
    <Button
        android:layout marginEnd="5dp"
        android: id="@+id/btnAdd"
        android:layout width="0dp"
        android: layout height="match parent"
        android:layout weight="1"
        android: onClick="onOperator"
        android: textSize="32sp"
        android:text="+" />
</LinearLayout>
<LinearLayout</pre>
    android: id="@+id/llFive"
    android:layout width="match parent"
    android: layout height="wrap content"
    android:layout_weight="1"
    android: orientation="horizontal">
    <Button
        android:layout marginStart="5dp"
        android:layout marginEnd="5dp"
        android: id="@+id/btnEqual"
        android: layout width="match parent"
        android: layout_height="match_parent"
        android:onClick="onEqual"
        android: textSize="32sp"
        android:text="=" />
</LinearLayout>
```

</LinearLayout>

Giao diện sẽ có kết quả như sau (Activity_main.xml):





Viết code cho ứng dụng:

Click vào: java → com → example → mycalculator → MainActivity.kt

Các em tự viết code các module để có thể xử lý các chức năng như giao diện: nhập số và thực hiện phép tính cơ bản (cộng, trừ, nhân, chia)

```
class MainActivity : AppCompatActivity() {
    var lastNumeric: Boolean = false
    var lastDot: Boolean = false

    private var tvInput: TextView?=null

    override fun onCreate(savedInstanceState: Bundle?) {
    }

    fun onDigit(view: View) {
    }

    fun onClear(view: View) {
    }
}
```

```
fun onDecimalPoint(view: View) {
}

fun onOperator(view: View) {
}

fun onEqual(view: View) {
}

private fun removeZeroAfterDot(result: String): String {
}

private fun isOperatorAdded(value: String): Boolean {
}
}
```