

Практическая работа (Приложение секундомер)

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Цель: написать приложение «Секундомер». Разобраться в работе жизненного цикла приложений.

MainActivity.kt:

```
package com.example.sekundomer_veronika

import android.os.Bundle
import android.os.SystemClock
import android.widget.Button
import android.widget.Chronometer
import androidx.appcompat.app.AppCompatActivity

class MainActivity : AppCompatActivity() {

    private lateinit var chronometer: Chronometer
    private var running = false
    private var offset: Long = 0

    private val offsetKey = "offset"
    private val runningKey = "running"
    private val baseKey = "base_key"

    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        chronometer = findViewById(R.id.textTime)
        val btnStart = findViewById<Button>(R.id.btnStart)
        val btnPause = findViewById<Button>(R.id.btnPause)
        val btnReset = findViewById<Button>(R.id.btnReset)

        // Восстановление состояния при повороте экрана
        if (savedInstanceState != null) {
            offset = savedInstanceState.getLong(offsetKey)
            running = savedInstanceState.getBoolean(runningKey)
            if (running) {
                chronometer.base = savedInstanceState.getLong(baseKey)
                chronometer.start()
            } else {
                setBaseTime()
            }
        }

        btnStart.setOnClickListener {
            if (!running) {
                setBaseTime()
                chronometer.start()
                running = true
            }
        }

        btnPause.setOnClickListener {
            if (running) {
                saveOffset()
                chronometer.stop()
                running = false
            }
        }
    }
}
```

```

        btnReset.setOnClickListener {
            offset = 0
            setBaseTime()
            chronometer.stop()
            running = false
        }
    }

    private fun saveOffset() {
        offset = SystemClock.elapsedRealtime() - chronometer.base
    }

    private fun setBaseTime() {
        chronometer.base = SystemClock.elapsedRealtime() - offset
    }

    override fun onSaveInstanceState(outState: Bundle) {
        outState.putLong(offsetKey, offset)
        outState.putBoolean(runningKey, running)
        outState.putLong(baseKey, chronometer.base)
        super.onSaveInstanceState(outState)
    }
}

```

activity_main.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:gravity="center"
    android:padding="20dp"
    android:background="#E3F2FD"
    tools:context=".MainActivity">

    <Chronometer
        android:id="@+id/textTime"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="80sp"
        android:layout_gravity="center"
        android:textColor="#4A148C" />

    <Button
        android:id="@+id/btnStart"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/start"
        android:layout_gravity="center"
        android:backgroundTint="#4A148C"
        android:textColor="#FFFFFF"
        android:layout_marginTop="10dp"/>

    <Button
        android:id="@+id/btnPause"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/pause"
        android:layout_gravity="center"

```

```

        android:backgroundTint="#4A148C"
        android:textColor="#FFFFFF"
        android:layout_marginTop="10dp"/>

        <Button
            android:id="@+id/btnReset"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="@string/reset"
            android:layout_gravity="center"
            android:backgroundTint="#4A148C"
            android:textColor="#FFFFFF"
            android:layout_marginTop="10dp"/>

    </LinearLayout>

```

AndroidManifest.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.sekundomer_veronika">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.AppCompat.Light.NoActionBar">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>

```

strings.xml:

```

<resources>
    <string name="app_name">Sekundomer</string>
    <string name="start">Start</string>
    <string name="pause">Pause</string>
    <string name="reset">Reset</string>
</resources>

```

build.gradle.kts:

```

plugins {
    id("com.android.application")
    id("org.jetbrains.kotlin.android")
}

android {
    namespace = "com.example.sekundomer_veronika"
    compileSdk = 34

    defaultConfig {

```

```

        applicationId = "com.example.sekundomer_veronika"
        minSdk = 24
        targetSdk = 34
        versionCode = 1
        versionName = "1.0"
    }

    buildTypes {
        release {
            isMinifyEnabled = false
            proguardFiles(
                getDefaultProguardFile("proguard-android-optimize.txt"),
                "proguard-rules.pro"
            )
        }
    }

    compileOptions {
        sourceCompatibility = JavaVersion.VERSION_1_8
        targetCompatibility = JavaVersion.VERSION_1_8
    }

    kotlinOptions {
        jvmTarget = "1.8"
    }
}

dependencies {
    implementation("androidx.appcompat:appcompat:1.6.1")
    implementation("com.google.android.material:material:1.9.0")
    implementation("androidx.constraintlayout:constraintlayout:2.1.4")
}

```

Результат:

