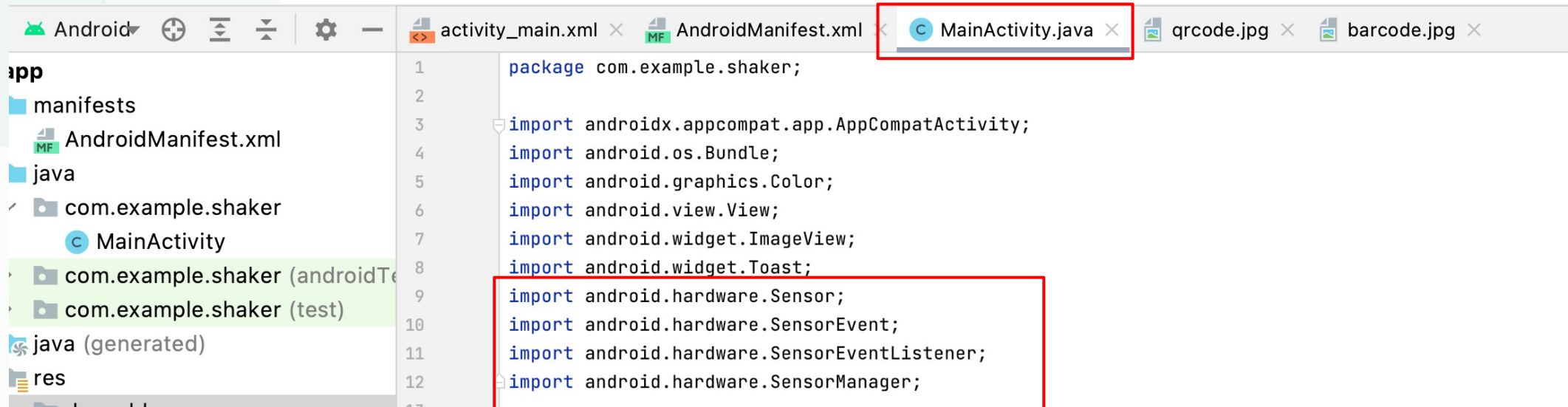


# 센서 활용 앱 만들기

# 가속도를 이용하여 QR code 와 Barcode를 불러보자

- ▶ hardware.Sensor는 총 9종의 센서를 지원
- ▶ SensorManager가 특정한 센서를 지정하게 되면 SensorEvent 가 발생함에 따라 SensorEventListener가 가동
- ▶ Accuracy 변동을 체크함과 아울러 onSensorChanged 에 의해 변동된 센서 값을 읽어 들임.
- ▶ 프로젝트 이름은 shakeCSM(computer science master 아님. 본인의 이니셜로..)
- ▶ 그외는 재량
- ▶ 영상과 같이 작동하는 앱을 구현



Android

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app

manifests

AndroidManifest.xml

java

com.example.shaker

MainActivity

com.example.shaker (ar)

com.example.shaker (te)

java (generated)

res

drawable

barcode.jpg (v24)

ic\_launcher\_backgro

ic\_launcher\_foregrou

qrcode.jpg (v24)

layout

activity\_main.xml

mipmap

values

Gradle Scripts

activity\_main.xml

AndroidManifest.xml

MainActivity.java

qrcode.jpg

barcode.jpg

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```
public class MainActivity extends AppCompatActivity implements SensorEventListener{
    private SensorManager sensorManager;

    private long lastUpdate;

    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        view = findViewById(R.id.textView);

        sensorManager = (SensorManager) getSystemService(SENSOR_SERVICE);
        lastUpdate = System.currentTimeMillis();
    }

    @Override
    public void onAccuracyChanged(Sensor sensor, int accuracy) {}

    @Override
    public void onSensorChanged(SensorEvent event) {
        if (event.sensor.getType() == Sensor.TYPE_ACCELEROMETER) {
            getAccelerometer(event);
        }
    }

    private void getAccelerometer(SensorEvent event) {
        float[] values = event.values;
        float x = values[0]; float y = values[1]; float z = values[2];
    }
}
```

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```
}
@
private void getAccelerometer(SensorEvent event) {
    float[] values = event.values;
    float x = values[0];    float y = values[1];    float z = values[2];
    double accelationSquareRoot =Math.sqrt( (x * x + y * y + z * z)
        / (SensorManager.GRAVITY_EARTH * SensorManager.GRAVITY_EARTH));

    long actualTime = System.currentTimeMillis();
    Toast.makeText(getApplicationContext(), text: String.valueOf(accelationSquareRoot)
        + "    " + SensorManager.GRAVITY_EARTH,Toast.LENGTH_SHORT).show();

    if (accelationSquareRoot >= 1.4)
    {

        if (actualTime - lastUpdate < 200) {
            return;
        }
        lastUpdate = actualTime;
        if (isColor) {
            재량...
        } else {
            재량...
        }
        isColor = !isColor;
    }
}
```

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Build:

Build Output

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TODO

Problems

Terminal

Logcat

Build

Upgrade Assistant

Profiler

Run

App Inspection

Event Log

Layout Inspector

```
70      @Override
71      protected void onResume() {
72          super.onResume();
73
74          sensorManager.registerListener( listener: this, sensorManager.getDefaultSensor(Sensor.TYPE_ACCELEROMETER),
75              SensorManager.SENSOR_DELAY_NORMAL);
76      }
77
78      @Override
79      protected void onPause() {
80
81          super.onPause();
82          sensorManager.unregisterListener(this);
83      }
84  }
```