Accelorometer Sensor :

An accelerometer sensor is a tool that measures the acceleration of any body or object in its instantaneous rest frame.

Activity\_main.xml:

*<?***xml version="1.0" encoding="utf-8"***?>*<**LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"  
 android:padding="16dp"**>  
  
 <**TextView  
 android:id="@+id/name"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Nagulesh 22BCS071"  
 android:textSize="18sp"** />  
  
 <**TextView  
 android:id="@+id/textViewAccelerometer"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Accelerometer: Not available"  
 android:textSize="18sp"** />  
  
</**LinearLayout**>

MainActivity.java:  
  
**package** com.example.myapplication;  
  
**import** android.support.v7.app.AppCompatActivity;  
**import** android.os.Bundle;  
**import** android.hardware.Sensor;  
**import** android.hardware.SensorEvent;  
**import** android.hardware.SensorEventListener;  
**import** android.hardware.SensorManager;  
**import** android.widget.TextView;  
  
**import** android.os.Bundle;  
**import** android.hardware.Sensor;  
**import** android.hardware.SensorEvent;  
**import** android.hardware.SensorEventListener;  
**import** android.hardware.SensorManager;  
**import** android.widget.TextView;  
  
**public class** MainActivity **extends** AppCompatActivity **implements** SensorEventListener {  
  
 **private** SensorManager **sensorManager**;  
 **private** Sensor **accelerometerSensor**;  
 **private** TextView **textViewAccelerometer**;  
  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_main***);  
  
 *// Initialize the UI component for accelerometer* **textViewAccelerometer** = findViewById(R.id.***textViewAccelerometer***);  
  
 *// Initialize the SensorManager and get the accelerometer sensor* **sensorManager** = (SensorManager) getSystemService(***SENSOR\_SERVICE***);  
 **accelerometerSensor** = **sensorManager**.getDefaultSensor(Sensor.***TYPE\_ACCELEROMETER***);  
  
 *// Check if the accelerometer sensor is available* **if** (**accelerometerSensor** == **null**) {  
 **textViewAccelerometer**.setText(**"Accelerometer not available"**);  
 } **else** {  
 **textViewAccelerometer**.setText(**"Accelerometer data will appear here."**);  
 }  
 }  
  
 @Override  
 **protected void** onResume() {  
 **super**.onResume();  
  
 *// Register the accelerometer sensor* **if** (**accelerometerSensor** != **null**) {  
 **sensorManager**.registerListener(**this**, **accelerometerSensor**, SensorManager.***SENSOR\_DELAY\_UI***);  
 }  
 }  
  
 @Override  
 **protected void** onPause() {  
 **super**.onPause();  
  
 *// Unregister the accelerometer sensor when the activity is paused* **sensorManager**.unregisterListener(**this**);  
 }  
  
 @Override  
 **public void** onSensorChanged(SensorEvent event) {  
 *// Handle accelerometer data* **if** (event.**sensor**.getType() == Sensor.***TYPE\_ACCELEROMETER***) {  
 **float** x = event.**values**[0];  
 **float** y = event.**values**[1];  
 **float** z = event.**values**[2];  
  
 *// Update the UI with accelerometer data* **textViewAccelerometer**.setText(String.*format*(**"Accelerometer - X: %.2f, Y: %.2f, Z: %.2f"**, x, y, z));  
 }  
 }  
  
 @Override  
 **public void** onAccuracyChanged(Sensor sensor, **int** accuracy) {  
 *// We don't need to handle accuracy changes for this example* }  
}

Output:

