\*\*\*\*\*Create an app to display whether battery is charging or discharging.\*\*\*\*\*

XML:

<?xml version="1.0" encoding="utf-8"?>

<androidx.constraintlayout.widget.ConstraintLayout 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"

tools:context=".MainActivity">

<TextView

android:id="@+id/textview"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text=" "

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>

Kotlin:

package com.example.satan

import android.content.Intent

import android.content.IntentFilter

import android.os.BatteryManager

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.widget.TextView

import com.example.practical5san.R

class MainActivity : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

val t=findViewById<TextView>(R.id.textview) as TextView

val bs: Intent?= IntentFilter(Intent.ACTION\_BATTERY\_CHANGED).let { IntentFilter ->

applicationContext.registerReceiver(null, IntentFilter)

}

val status: Int = bs?.getIntExtra(BatteryManager.EXTRA\_STATUS, -1)?:-1

val isCharging:Boolean = status == BatteryManager.BATTERY\_STATUS\_CHARGING ||

status == BatteryManager.BATTERY\_STATUS\_FULL

if(isCharging)

{

t.text = "Charging"

}

else

{

t.text = "Discharging"

}

}

}

\*\*\*\*\*Create an app to display the battery level.\*\*\*\*\*

XML:

<?xml version="1.0" encoding="utf-8"?>

<androidx.constraintlayout.widget.ConstraintLayout 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"

tools:context=".MainActivity">

<TextView

android:id="@+id/textview"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text=" "

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>

Kotlin:

package com.example.satan

import android.content.Intent

import android.content.IntentFilter

import android.os.BatteryManager

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.widget.TextView

import com.example.practical5san.R

class MainActivity : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

val t=findViewById<TextView>(R.id.textview) as TextView

val bs: Intent?= IntentFilter(Intent.ACTION\_BATTERY\_CHANGED).let { IntentFilter ->

applicationContext.registerReceiver(null,IntentFilter)

}

val status: Int = bs?.getIntExtra(BatteryManager.EXTRA\_STATUS, -1)?:-1

val isCharging:Boolean = status == BatteryManager.BATTERY\_STATUS\_CHARGING ||

status == BatteryManager.BATTERY\_STATUS\_FULL

val level: Int = bs?.getIntExtra(BatteryManager.EXTRA\_LEVEL, -1)?:-1

val scale:Int = bs?.getIntExtra(BatteryManager.EXTRA\_STATUS, -1)?:-1

val bal:Int = (((level.toFloat())/(scale.toFloat()))\*100.0f).toInt()

if(isCharging)

{

t.text = "Charging $bal"

}

else

{

t.text = "Discharging $bal"

}

}

}

\*\*\*\*\*Create an app to capture an image using Camera.\*\*\*\*\*

XML code :

<?xml version="1.0" encoding="utf-8"?>

<androidx.constraintlayout.widget.ConstraintLayout 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"

tools:context=".MainActivity">

<ImageView

android:id="@+id/imageView2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="180dp"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.498"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

tools:srcCompat="@tools:sample/avatars" />

<Button

android:id="@+id/button2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Button"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.498"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/imageView2"

app:layout\_constraintVertical\_bias="0.387" />

</androidx.constraintlayout.widget.ConstraintLayout>

XML Android manifest code :

<?xml version="1.0" encoding="utf-8"?>

<manifest xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

package="com.example.myapplication">

<uses-feature android:name="android.hardware.camera" android:required="true" />

<application

android:allowBackup="true"

android:dataExtractionRules="@xml/data\_extraction\_rules"

android:fullBackupContent="@xml/backup\_rules"

android:icon="@mipmap/ic\_launcher"

android:label="@string/app\_name"

android:roundIcon="@mipmap/ic\_launcher\_round"

android:supportsRtl="true"

android:theme="@style/Theme.MyApplication"

tools:targetApi="31">

<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>

Kotlin Code :

package com.example.myapplication

import android.app.Activity

import android.content.ActivityNotFoundException

import android.content.Intent

import android.graphics.Bitmap

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.provider.MediaStore

import android.widget.Button

import android.widget.ImageView

class MainActivity : AppCompatActivity() {

private val cameraRequest = 200

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

val b1 = findViewById<Button>(R.id.button2) as Button

val iv = findViewById<ImageView>(R.id.imageView2) as ImageView

b1?.setOnClickListener {

try {

capturePhoto()

} catch (e: ActivityNotFoundException) {

// display error state to the user

}

}

}

override fun onActivityResult(requestCode: Int, resultCode: Int, data: Intent?) {

super.onActivityResult(requestCode, resultCode, data)

val iv = findViewById<ImageView>(R.id.imageView2) as ImageView

if (resultCode == Activity.RESULT\_OK && requestCode == cameraRequest && data != null) {

val photo: Bitmap = data?.extras?.get("data") as Bitmap

iv.setImageBitmap(photo)

}

}

fun capturePhoto() {

val cameraIntent = Intent(MediaStore.ACTION\_IMAGE\_CAPTURE)

startActivityForResult(cameraIntent, cameraRequest)

}

}

\*\*\*\*\*Create an app to display the x,y,z co-ordinates of the mobile phone on a textview when the handset is rotated/moved\*\*\*\*\*

KOTLIN CODE :

package com.example.farmankazi0049

import android.content.Context

import android.hardware.Sensor

import android.hardware.SensorEvent

import android.hardware.SensorEventListener

import android.hardware.SensorManager

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.widget.TextView

import org.w3c.dom.Text

class MainActivity : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

val sensorManager = getSystemService(Context.SENSOR\_SERVICE) as SensorManager

val list = sensorManager.getSensorList(Sensor.TYPE\_ACCELEROMETER)

val sensor : Sensor?=sensorManager.getDefaultSensor(Sensor.TYPE\_ACCELEROMETER)

val se = object:SensorEventListener {

override fun onSensorChanged(p0: SensorEvent?) {

var v = p0?.values

var x = v?.get(0)

var y = v?.get(1)

var z = v?.get(2)

val tv = findViewById<TextView>(R.id.t1) as TextView

tv.text = "x = $x y = $y z = $z"

}

override fun onAccuracyChanged(p0: Sensor?, p1: Int) {

}

}

sensorManager.registerListener(se, list.get(0), SensorManager.SENSOR\_DELAY\_NORMAL)

}

}

\*\*\*\*\*Device Orientation Plugin\*\*\*\*\*

AndroidMainfest.xml

android:configChanges="orientation|screenSize">

MainActivity.kt

package com.example.portrait\_landscape

import android.content.res.Configuration

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.widget.Toast

class MainActivity : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

}

override fun onConfigurationChanged(newConfig: Configuration) {

super.onConfigurationChanged(newConfig)

if(newConfig.orientation==Configuration.ORIENTATION\_PORTRAIT) {

Toast.makeText(this@MainActivity, "Portrait Mode", Toast.LENGTH\_LONG).show()

}

else if(newConfig.orientation==Configuration.ORIENTATION\_LANDSCAPE) {

Toast.makeText(this@MainActivity, "Landscape Mode", Toast.LENGTH\_LONG).show()

}

}

}

\*\*\*\*\*Write and Display the message\*\*\*\*\*

activity\_main.xml

<?xml version="1.0" encoding="utf-8"?>

<androidx.constraintlayout.widget.ConstraintLayout 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"

tools:context=".MainActivity">

<TextView

android:id="@+id/textView"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Hello World!"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent" />

<Button

android:id="@+id/button1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Button"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.498"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.603" />

</androidx.constraintlayout.widget.ConstraintLayout>

MainActivity.kt

package com.example.portrait\_landscape

import android.content.res.Configuration

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.text.InputType

import android.widget.Button

import android.widget.EditText

import android.widget.Toast

import androidx.appcompat.app.AlertDialog

class MainActivity : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

val b1 = findViewById<Button>(R.id.button1) as Button

b1.setOnClickListener {

showPrompt()

}

}

fun showPrompt() {

val b : AlertDialog.Builder = AlertDialog.Builder(this)

b.setTitle("Enter text to display!")

val input = EditText(this)

input.setHint("Write something.....")

input.inputType = InputType.TYPE\_CLASS\_TEXT

b.setView(input)

b.setPositiveButton("Okay"){\_,\_->

val m = input.text.toString()

Toast.makeText(this@MainActivity, "$m", Toast.LENGTH\_LONG).show()

}

b.setNegativeButton("Cancel"){\_,\_->

Toast.makeText(this@MainActivity, "Thank you", Toast.LENGTH\_LONG).show()

}

b.setCancelable(true)

b.show()

}

}

\*\*\*\*\*Create an app to send text in textbox from one activity to another\*\*\*\*\*

XML 1 CODE

<?xml version="1.0" encoding="utf-8"?>

<androidx.constraintlayout.widget.ConstraintLayout 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"

tools:context=".MainActivity">

<Button

android:id="@+id/button1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Button"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.498"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.604" />

<EditText

android:id="@+id/ET1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="textPersonName"

android:text="Name"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.497"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>

Kotlin 1 CODE

package com.example.farman\_kazi\_0049

import android.content.Intent

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.widget.Button

import android.widget.EditText

class MainActivity : AppCompatActivity() {

lateinit var send\_button : Button

lateinit var send\_text : EditText

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

send\_button = findViewById(R.id.button1)

send\_text = findViewById(R.id.ET1)

send\_button.setOnClickListener {

val str = send\_text.text.toString()

val intent = Intent(this@MainActivity, MainActivity2::class.java)

intent.putExtra("Message\_Key", str)

startActivity(intent)

}

}

}

XML 2 CODE

<?xml version="1.0" encoding="utf-8"?>

<androidx.constraintlayout.widget.ConstraintLayout 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"

tools:context=".MainActivity2">

<TextView

android:id="@+id/textView2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="TextView"

android:textSize="25sp"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>

Kotlin CODE 2:

package com.example.farman\_kazi\_0049

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.widget.TextView

class MainActivity2 : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main2)

val receiver\_msg : TextView = findViewById(R.id.textView2)

val str = intent.getStringExtra("Message\_Key")

receiver\_msg.text = str

}

}

\*\*\*\*\*Create an app to select radio button and display it’s value on TextView\*\*\*\*\*

XML CODE

<?xml version="1.0" encoding="utf-8"?>

<androidx.constraintlayout.widget.ConstraintLayout 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"

tools:context=".MainActivity">

<TextView

android:id="@+id/textView"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Hello World!"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.36" />

<RadioGroup

android:id="@+id/radioGroup"

android:layout\_width="263dp"

android:layout\_height="98dp"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.208">

<RadioButton

android:id="@+id/radioButton"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="VSIT" />

<RadioButton

android:id="@+id/radioButton2"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="VIT" />

</RadioGroup>

<CheckBox

android:id="@+id/checkBox"

android:layout\_width="150dp"

android:layout\_height="52dp"

android:text="App Development"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.498"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.481" />

<CheckBox

android:id="@+id/checkBox2"

android:layout\_width="150dp"

android:layout\_height="48dp"

android:text="Web Development"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.498"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.554" />

<TextView

android:id="@+id/textView2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="TextView"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.498"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.644" />

<Button

android:id="@+id/button3"

android:layout\_width="109dp"

android:layout\_height="51dp"

android:text="Button"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.754" />

</androidx.constraintlayout.widget.ConstraintLayout>

Kotlin CODE

package com.example.far\_kazi\_0049

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.widget.\*

import java.lang.StringBuilder

class MainActivity : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

val rad = findViewById<RadioGroup>(R.id.radioGroup)

val t1 = findViewById<TextView>(R.id.textView)

rad.setOnCheckedChangeListener { \_,\_ ->

t1.text = findViewById<RadioButton>(rad.checkedRadioButtonId).text

}

val a = findViewById<CheckBox>(R.id.checkBox)

val b = findViewById<CheckBox>(R.id.checkBox2)

val btn = findViewById<Button>(R.id.button3)

val tv = findViewById<TextView>(R.id.textView2)

btn.setOnClickListener {

val r = StringBuilder()

if(a.isChecked) {

r.append(a.text)

}

if(b.isChecked){

r.append("\n"+b.text)

}

tv.text = r.toString()

}

}

}

\*\*\*\*\*Create an app to display the network information on TextView.\*\*\*\*\*

XML CODE

<?xml version="1.0" encoding="utf-8"?>

<androidx.constraintlayout.widget.ConstraintLayout 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"

tools:context=".MainActivity">

<TextView

android:id="@+id/tv"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Hello World!"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>

KOTLIN CODE

package com.example.networkinformation

import android.content.Context

import android.net.ConnectivityManager

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.widget.TextView

class MainActivity : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

val netStatus=findViewById<TextView>(R.id.tv)

Thread(Runnable {

while (true) {

var conStant: String ="Not Connected"

val cm = getSystemService(Context.CONNECTIVITY\_SERVICE) as ConnectivityManager

val netInfo = cm.allNetworkInfo

for(ni in netInfo)

{

if (ni.typeName.equals("WIFI", ignoreCase = true))

if(ni.isConnected)conStant="WIFI"

if(ni.typeName.equals("MOBILE",ignoreCase = true))

if(ni.isConnected)conStant="MOBILE"

}

runOnUiThread{

netStatus.text=conStant.toString()

}

}

}).start()

}

}

AndroidManifest.xml

<uses-permission android:name="android.permission.ACCESS\_NETWORK\_STATE"/><uses-permission android:name="android.permission.INTERNET"/>