

## Q1

### MainActivity.kt

```
package com.example.u3u4

import android.content.Context
import android.content.SharedPreferences
import android.os.Bundle
import android.view.View
import android.widget.Button
import android.widget.EditText
import android.widget.TextView
import android.widget.Toast
import androidx.appcompat.app.AppCompatActivity
class MainActivity : AppCompatActivity() {
    private val sharedPrefFile = "kotlinsharedpreference"
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
        val inputId = findViewById<EditText>(R.id.editId)
        val inputName = findViewById<EditText>(R.id.editName)
        val outputId = findViewById<TextView>(R.id.textVieShowId)
        val outputName = findViewById<TextView>(R.id.textVieShowName)
        val btnSave = findViewById<Button>(R.id.save)
        val btnView = findViewById<Button>(R.id.view)
        val btnClear = findViewById<Button>(R.id.clear)
        val sharedPreferences: SharedPreferences =
this.getSharedPreferences(sharedPrefFile, Context.MODE_PRIVATE)
        btnSave.setOnClickListener(View.OnClickListener {
            val id: Int = Integer.parseInt(inputId.text.toString())
            val name: String = inputName.text.toString()
            val editor: SharedPreferences.Editor =
sharedPreferences.edit()
            editor.putInt("id_key", id)
            editor.putString("name_key", name)
            editor.apply()
            editor.commit()
            Toast.makeText(this, "Data Saved",
Toast.LENGTH_SHORT).show()
        })
        btnView.setOnClickListener {
            val sharedIdValue = sharedPreferences.getInt("id_key", 0)
            val sharedNameValue =
sharedPreferences.getString("name_key", "defaultname")
            if (sharedIdValue.equals(0) &&
sharedNameValue.equals("defaultname")) {
                outputName.setText("default name:
${sharedNameValue}).toString()
                outputId.setText("default id:
${sharedIdValue.toString()}")
            } else {
```

```

        outputName.setText(sharedNameValue).toString()
        outputId.setText(sharedIdValue.toString())
    }
}
btnClear.setOnClickListener(View.OnClickListener {
    val editor = sharedPreferences.edit()
    editor.clear()

    editor.apply()
    outputName.setText("").toString()
    outputId.setText("").toString()
})
}
}

```

### 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">
    <TableLayout
        android:layout_width="368dp"
        android:layout_height="495dp"
        android:layout_marginBottom="8dp"
        android:layout_marginEnd="8dp"
        android:layout_marginStart="8dp"
        android:layout_marginTop="8dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent">
        <TableRow>
            <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_column="0"
                android:layout_marginLeft="10sp"
                android:layout_marginStart="10sp"
                android:text="Enter Id"

                android:textAppearance="@style/Base.TextAppearance.AppCompat.Medium" />
            <EditText
                android:id="@+id/editId"
                android:layout_width="201dp"
                android:layout_height="wrap_content"

```

```

        android:layout_column="1"
        android:layout_marginLeft="50sp"
        android:layout_marginStart="50sp"
        android:hint="id"

    android:textAppearance="@style/Base.TextAppearance.AppCompat.Medium" />
</TableRow>
<TableRow>
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_column="0"
        android:layout_marginLeft="10sp"

        android:layout_marginStart="10sp"
        android:text="Enter Name"

    android:textAppearance="@style/Base.TextAppearance.AppCompat.Medium" />
    <EditText
        android:id="@+id/editName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_column="1"
        android:layout_marginLeft="50sp"
        android:layout_marginStart="50sp"
        android:hint="name"

    android:textAppearance="@style/Base.TextAppearance.AppCompat.Medium" />
</TableRow>
<TableRow android:layout_marginTop="60dp">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_column="0"
        android:layout_marginLeft="10sp"
        android:layout_marginStart="10sp"
        android:text="Your Id"

    android:textAppearance="@style/Base.TextAppearance.AppCompat.Medium" />
    <TextView
        android:id="@+id/textViewShowId"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_column="1"
        android:layout_marginLeft="50sp"
        android:layout_marginStart="50sp"

    android:textAppearance="@style/Base.TextAppearance.AppCompat.Medium" />
</TableRow>
<TableRow android:layout_marginTop="20dp">
    <TextView

```

```

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_column="0"
        android:layout_marginLeft="10sp"
        android:layout_marginStart="10sp"
        android:text="Your Name"

    android:textAppearance="@style/Base.TextAppearance.AppCompat.Medium" />
    <TextView
        android:id="@+id/textViewShowName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_column="1"
        android:layout_marginLeft="50sp"
        android:layout_marginStart="50sp"

    android:textAppearance="@style/Base.TextAppearance.AppCompat.Medium" />
</TableRow>
</TableLayout>

<LinearLayout
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:layout_marginBottom="16dp"
    android:layout_marginEnd="8dp"
    android:layout_marginStart="8dp"
    android:orientation="horizontal"
    android:gravity="center"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="parent">
    <Button
        android:id="@+id/save"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Save" />
    <Button
        android:id="@+id/view"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="View" />
    <Button
        android:id="@+id/clear"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Clear" />
</LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>

```

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u3u4

Enter Id 1

Enter Name akash

Your Id 1

Your Name akash



Data Saved

SAVE

VIEW

CLEAR

## Q2

### MainActivity.kt

```
package com.example.u3u4
```

```
import android.annotation.SuppressLint
import android.content.Context
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.util.Log
import android.view.View
import android.widget.Button
import android.widget.EditText
import android.widget.Toast
import java.io.*
import java.lang.Exception
import java.lang.NumberFormatException
class MainActivity : AppCompatActivity() {
    @SuppressLint("CutPasteId")
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
        val fileName = findViewById<EditText>(R.id.editFile)
        val fileData = findViewById<EditText>(R.id.editData)
        val button_save = findViewById<Button>(R.id.btnSave)
        val button_view = findViewById<Button>(R.id.btnView)
        button_save.setOnClickListener() {
            val file :String = fileName.text.toString()
            val data:String = fileData.text.toString()
            val fileOutputStream: FileOutputStream
            try{
                fileOutputStream =
openFileOutput(file,Context.MODE_PRIVATE)
                fileOutputStream.write(data.toByteArray())
                fileOutputStream.close()
            }catch(e:FileNotFoundException){
                Log.d("Internal Storage " , "File not founng")
            }catch(e:NumberFormatException) {
                Log.e("Internal storage ", "Data is not supported ")
            }catch (e:IOException){
                Log.e("Internal Storage " , "I/O exception ")
            }catch (e : Exception){
                Log.e("Internal Storage " , "Fatal Error ")
            }
        }
    }
}
```

```

    }
    Toast.makeText(this, "Data Save " +
filesDir.absolutePath, Toast.LENGTH_LONG).show()
    fileName.text.clear()
    fileData.text.clear()
}
button_view.setOnClickListener(View.OnClickListener {
    val filename = fileName.text.toString()
    if(filename.toString().trim() != ""){
        var fileInputStream: FileInputStream? = null
        fileInputStream = openFileInput(filename)
        var inputStreamReader: InputStreamReader =
InputStreamReader(fileInputStream)
        val bufferedReader: BufferedReader =
BufferedReader(inputStreamReader)
        val stringBuilder: StringBuilder = StringBuilder()
        var text: String ? = null
        while({text = bufferedReader.readLine(); text}() != null){
            stringBuilder.append(text)
        }
        fileData.setText(stringBuilder.toString().toString())
    }else{
        Toast.makeText(applicationContext, "File name cannot be
blank ", Toast.LENGTH_LONG).show()
    }
})
}
}
}

```

### Activity\_main.xml

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
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:layout_alignParentLeft="true"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"

```

```

        android:layout_marginLeft="31dp"
        android:layout_marginStart="31dp"
        android:layout_marginTop="117dp"
        android:text="File Name"

    android:textAppearance="@style/Base.TextAppearance.AppCompat.Medium" />
    <EditText
        android:id="@+id/editFile"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/textView"
        android:layout_alignStart="@+id/btnSave"
        android:layout_alignLeft="@+id/btnSave"
        android:layout_alignBottom="@+id/textView"
        android:layout_marginStart="31dp"
        android:layout_marginLeft="31dp"
        android:ems="10"
        android:hint="file name"
        android:inputType="textPersonName"
        android:minHeight="48dp"
        android:paddingLeft="10dp"
        tools:ignore="UnknownId" />
    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/textView"
        android:layout_alignEnd="@+id/textView"
        android:layout_marginTop="67dp"
        android:text="file_data"

    android:textAppearance="@style/Base.TextAppearance.AppCompat.Medium" />
    <EditText
        android:id="@+id/editData"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/textView2"
        android:layout_alignStart="@+id/editFile"
        android:layout_alignBottom="@+id/textView2"
        android:ems="10"
        android:hint="data"
        android:lines="5" />
    <Button
        android:id="@+id/btnSave"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentBottom="true"
        android:layout_alignStart="@+id/textView2"
        android:layout_marginBottom="53dp"
        android:layout_marginStart="49dp"
        android:text="save" />

```



```
<Button
    android:id="@+id/btnView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignEnd="@+id/editData"
    android:layout_alignTop="@+id/btnSave"
    android:layout_marginEnd="33dp"
    android:text="view" />
</RelativeLayout>
```

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u3u4

File Name file name

file\_data



Data Save /data/user/0/  
com.example.u3u4/files

SAVE

VIEW

## Q4

### MainActivity.kt

```
package com.example.u3u4
```

```
import android.annotation.SuppressLint
import android.app.Notification
import android.app.NotificationChannel
import android.app.NotificationManager
import android.app.PendingIntent.FLAG_UPDATE_CURRENT
import android.app.PendingIntent.getActivity
import android.content.Context
import android.content.Intent
import android.graphics.BitmapFactory
import android.graphics.Color
import android.os.Build
import android.os.Bundle
import android.widget.Button
import android.widget.RemoteViews
import androidx.appcompat.app.AppCompatActivity

class MainActivity : AppCompatActivity() {
    lateinit var notificationManager: NotificationManager
    lateinit var notificationChannel: NotificationChannel
    lateinit var builder: Notification.Builder
    private val channelId = "i.apps.notifications"
    private val description = "Notification"
    @Suppress("DEPRECATION")
    @SuppressLint("UnspecifiedImmutableFlag")
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
        val btn = findViewById<Button>(R.id.btn)
        notificationManager =
            getSystemService(Context.NOTIFICATION_SERVICE) as NotificationManager
        btn.setOnClickListener {
            val intent = Intent(this, afterNotification::class.java)
            val pendingIntent = getActivity(this, 0, intent,
                FLAG_UPDATE_CURRENT)
            val contentView = RemoteViews(packageName,
                R.layout.activity_after_notification)
            if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {
```

```

        notificationChannel = NotificationChannel(channelId,
description, NotificationManager.IMPORTANCE_HIGH)
        notificationChannel.enableLights(true)
        notificationChannel.lightColor = Color.GREEN
        notificationChannel.enableVibration(false)

notificationManager.createNotificationChannel(notificationChannel)
        builder = Notification.Builder(this, channelId)
            .setContent(contentView)
            .setSmallIcon(R.drawable.ic_launcher_background)

.setLargeIcon(BitmapFactory.decodeResource(this.resources,
R.drawable.ic_launcher_background))
            .setContentIntent(pendingIntent)
    } else {
        builder = Notification.Builder(this)
            .setContent(contentView)
            .setSmallIcon(R.drawable.ic_launcher_background)

.setLargeIcon(BitmapFactory.decodeResource(this.resources,
R.drawable.ic_launcher_background))
            .setContentIntent(pendingIntent)
    }
    notificationManager.notify(1234, builder.build())
}
}
}

```

### Activity\_main.xml

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <Button
        android:id="@+id/btn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:text="Send Notification" />
</RelativeLayout>

```

### afterNotification.kt

```

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

```

```

<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <Button
        android:id="@+id/btn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:text="Send Notification" />
</RelativeLayout>

```

### Activity\_after\_activity.xml

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".afterNotification">
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:text="Android k expert bolne wale kaha h "
        android:textSize="15sp"
        android:textStyle="bold" />
</RelativeLayout>

```

## Q5

### MainActivity.kt

```
package com.example.u3u4
```

```
import android.app.Notification
import android.app.NotificationChannel
import android.app.NotificationManager
import android.content.Context
import android.os.Build
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.widget.Button
import android.widget.RemoteViews
import androidx.core.app.NotificationCompat
import androidx.core.app.NotificationManagerCompat

class MainActivity : AppCompatActivity() {
    private var CHANNEL_ID = "Your_Channel_Id "
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
        CreateNotificationChannel()
        val notificationLayout =
RemoteViews(packageName, R.layout.custom_notify)
        val builder = NotificationCompat.Builder(this, CHANNEL_ID)
            .setContentTitle("Hello how are you")
            .setStyle(NotificationCompat.DecoratedCustomViewStyle())
            .setCustomContentView(notificationLayout)
            .setPriority(Notification.PRIORITY_DEFAULT)
        val notify_btn = findViewById<Button>(R.id.notify_btn)
        notify_btn.setOnClickListener {
            with(NotificationManagerCompat.from(this)) {
                notify(0, builder.build())
            }
        }
    }
}

private fun CreateNotificationChannel() {
    if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {
        val name = " App Notification "
```

```

        val descriptionText = "This is your notification description"
    }

    val importance = NotificationManager.IMPORTANCE_DEFAULT
    val channel = NotificationChannel(CHANNEL_ID, name,
importance).apply {
        description = descriptionText
    }

    val notificationManager: NotificationManager =
        getSystemService(Context.NOTIFICATION_SERVICE) as
NotificationManager

        notificationManager.createNotificationChannel(channel)
    }
}
}

```

### 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">
    <Button
        android:id="@+id/notify_btn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Notification"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

### Custom\_notify.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="horizontal"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    >
    <ImageView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:src="@drawable/ic_launcher_background"
        android:layout_margin="12dp"
    >

```

```
        />

<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:orientation="vertical">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Notification Tittle here"
        android:textSize="18dp"
        android:textColor="#000" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="You can put here some information "

        />
</LinearLayout>
</LinearLayout>
```



8:57

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u3u4

NOTIFICATION

## Q6

### MainActivity.kt

```
package com.example.u3u4

import android.content.Intent
import android.net.Uri
import android.os.Bundle
import android.view.View
import android.widget.EditText
import androidx.appcompat.app.AppCompatActivity
class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
    }
    fun call(view: View) {
        var phone = findViewById<EditText>(R.id.Phone)
        val phone_number : String= phone.getText().toString()
        val dialIntent = Intent(Intent.ACTION_DIAL)
        dialIntent.data = Uri.parse("tel:" + phone_number )
        startActivity(dialIntent)
    }
}
```

### Activity\_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="8dp"
    tools:context=".MainActivity">
    <Button
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:onClick="call"
        android:text="Call" />
    <EditText
        android:id="@+id/Phone"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:hint="Enter Number"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="212dp"
```

```
        android:layout_marginBottom="77dp"
        android:ems="10"
        android:inputType="phone" />
</RelativeLayout>
```

