Practical – 1

Aim:-Implementation of CRC code using Modulo-2 Division

Ans:-

```
def xor(a, b):
    result = []
    for i in range(1, len(b)):
        if a[i] == b[i]:
            result.append('0')
        else:
            result.append('1')
    return ''.join(result)

def mod2div(divident, divisor):
    pick = len(divisor)
    tmp = divident[0 : pick]
    while pick < len(divident):
        if tmp[0] == '1':
            tmp = xor(divisor, tmp) + divident[pick]
        else:
            tmp = xor('0'*pick, tmp) + divident[pick]
        pick += 1
    if tmp[0] == '1':
        tmp = xor(divisor, tmp)
    else:
        tmp = xor('0'*pick, tmp)
    checkword = tmp
    return checkword

def encodeData(data, key):

    l_key = len(key)
    appended_data = data + '0'*(l_key-1)
    remainder = mod2div(appended_data, key)
    codeword = data + remainder
    print("Data: ",data)
    print("Remainder after encode: ", remainder)
    print("Encoded Data : ", codeword)
    remainder1 = mod2div(codeword,key)
    print("Remainder after decode: ", remainder1)
data = "1001001"
key = "11010"
encodeData(data, key)
```

Output:

```
$ python crc.py
Data:  1001001001
Remainder after encode:  100
Encoded Data :  1001001001100
Remainder after decode:  000
```

Practical – 2

Aim:- Develop an android app which displays “Hello, welcome to Android Lab” message.

Ans:-

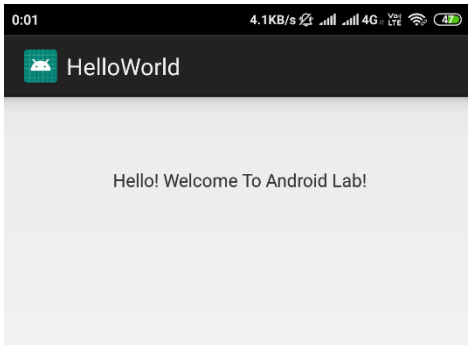
activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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:layout_width="221dp"
android:layout_height="66dp"
android:text="Hello! Welcome To Android Lab!"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintHorizontal_bias="0.607"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.108" />
</android.support.constraint.ConstraintLayout>
```

MainActivity.java

```
package com.example.mcwc.helloworld;
import android.app.Activity;
import android.os.Bundle;
public class MainActivity extends Activity {
   @Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
   }
}
```

Output:



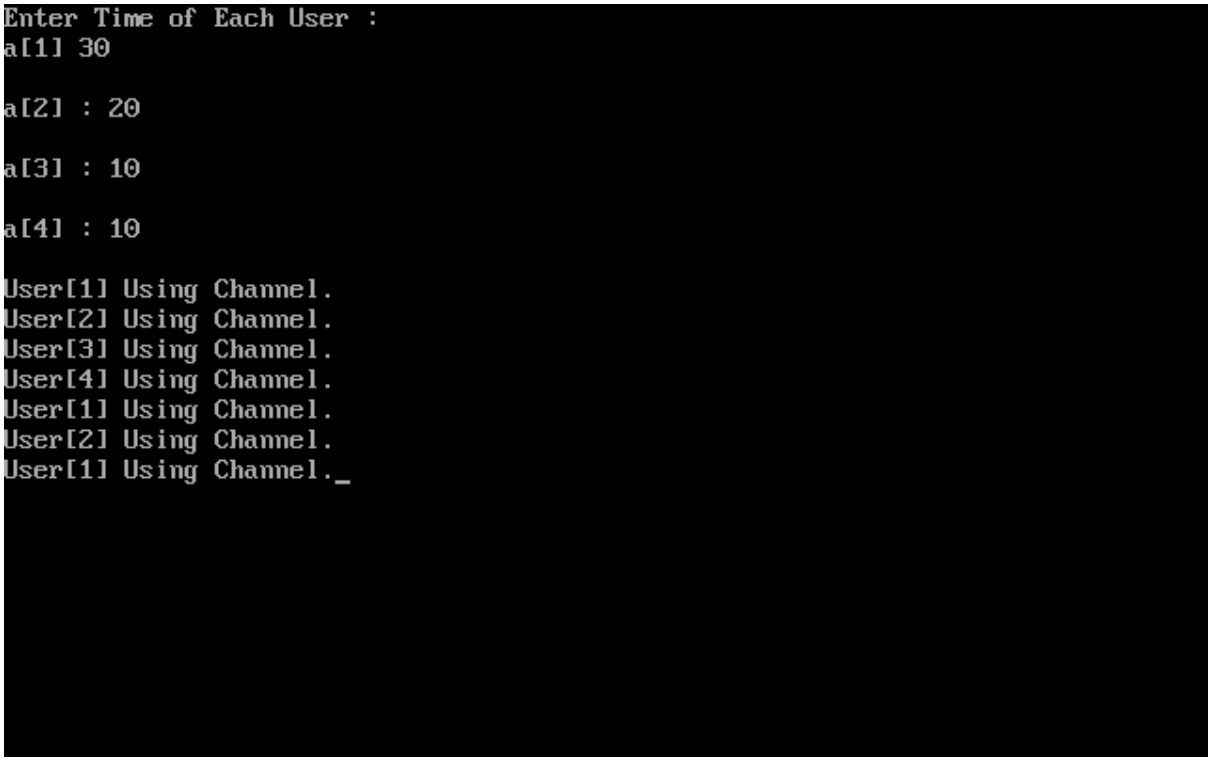
Practical – 3

Aim:- Write a program to simulate Fixed Time Division Multiplexing.

Ans:-

```
#include <stdio.h>
#include <conio.h>
void main()
{
int a[4],time=120;
int u1,u2,u3,u4,i;
clrscr();
printf("Enter Time of Each User : ");
for(i=0;i<4;i++)
   {
printf("\na[%d] : ",i+1);
scanf("%d",&a[i]);
   }
   u1=a[0]/10;
 u2=a[1]/10;
 u3=a[2]/10;
 u4=a[3]/10;
while(time!=0)
 {
if(u1>0)
    {
printf("\nUser[1] Using Channel.");
time=time-10;
     u1=u1-1;
    }
if(u2>0)
    {
printf("\nUser[2] Using Channel.");
time=time-10;
     u2=u2-1;
    }
if(u3>0)
    {
printf("\nUser[3] Using Channel.");
time=time-10;
     u3=u3-1;
    }
if(u4>0)
    {
printf("\nUser[4] Using Channel.");
time=time-10;
     u4=u4-1;
    }
  }
getch();
}
```

Output:


Enter Time of Each User :
a[1] 30
a[2] : 20
a[3] : 10
a[4] : 10
User[1] Using Channel.
User[2] Using Channel.
User[3] Using Channel.
User[4] Using Channel.
User[1] Using Channel.
User[2] Using Channel.
User[1] Using Channel._

Practical – 4

Aim:- Writea C/C++ program to find hamming distance. For example Hamming distance d(v1,v2) = 3 if v1 = 011011, v2 = 110001.

Ans:-

HammingDistance.cpp:

```
#include<stdio.h>
#include<iostream.h>
#include<string.h>
void main()
{
int i,length,count=0;
char v1[8],v2[8];
clrscr();
printf("\nWrite a Program to Find Hamming Distance\n");
printf("Enter 1st String : ");
scanf("%s",&v1);
printf("Enter 2nd String : ");
scanf("%s",&v2);
length=strlen(v2);
for(i=0;i<length;i++)
    {
if(v1[i]!=v2[i])
        {
count++;
        }
    }
printf("\nHamming Distance : %d",count);
getch();
}
```

Output:

Practical – 5

Aim:-Develop an android app which displays a form to get following information from user. 1. Username 2. Password 3. Email Address 4. Phone Number 5. Country 6. State 7. State 8. Gender 9. Interests 10. Birth Date 11. Birth Time Form should be followed by a Button with label “Submit”. When user clicks the button, a message should be displayed to user describing the information entered. Utilize suitable UI controls (i.e. widgets). [When user enters country in AutoCompleteTextView, list of states should be displayed in Spinner automatically.]

Ans:-

activity_main.xml

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

<LinearLayout android:layout_width="match_parent" android:layout_height="wrap_content"
android:orientation="vertical" android:padding="20sp">

<android.support.design.widget.TextInputLayout android:layout_width="match_parent"
android:layout_height="match_parent" android:layout_marginBottom="10sp">

<EditText android:layout_height="wrap_content" android:layout_width="match_parent"
android:id="@+id/username" android:inputType="text" android:maxLength="50"
android:hint="@string/username"/>

</android.support.design.widget.TextInputLayout>

<android.support.design.widget.TextInputLayout android:layout_width="match_parent"
android:layout_height="match_parent" android:layout_marginBottom="10sp">

<EditText android:layout_height="wrap_content" android:layout_width="match_parent"
android:id="@+id/password" android:inputType="textPassword" android:maxLength="50"
android:hint="@string/password"/>
</android.support.design.widget.TextInputLayout>

<android.support.design.widget.TextInputLayout android:layout_width="match_parent"
android:layout_height="match_parent" android:layout_marginBottom="10sp">

<EditText android:layout_height="wrap_content" android:layout_width="match_parent"
android:id="@+id/email" android:inputType="textEmailAddress" android:maxLength="50"
android:hint="@string/email"/>

</android.support.design.widget.TextInputLayout>
```

```
<android.support.design.widget.TextInputLayout android:layout_width="match_parent"
android:layout_height="match_parent" android:layout_marginBottom="10sp">

<EditText android:layout_height="wrap_content" android:layout_width="match_parent"
android:id="@+id/number" android:inputType="phone" android:maxLength="50"
android:hint="@string/phone_number"/>

</android.support.design.widget.TextInputLayout>

<android.support.design.widget.TextInputLayout android:layout_width="match_parent"
android:layout_height="match_parent"
android:layout_marginBottom="10sp">

<EditText android:layout_height="wrap_content" android:layout_width="match_parent"
android:id="@+id/interests" android:inputType="text" android:maxLength="50"
android:hint="@string/interests"/>

</android.support.design.widget.TextInputLayout>

<LinearLayout android:layout_height="wrap_content" android:layout_width="match_parent"
android:orientation="horizontal">
<TextView android:id="@+id/textView" android:layout_width="wrap_content"
android:layout_height="wrap_content" android:layout_marginEnd="60dp" android:textSize="18sp"
android:textColor="#000000" android:layout_gravity="center_vertical"
android:layout_marginRight="60dp" android:text="@string/gender" />

<RadioGroup android:layout_width="258dp" android:layout_height="wrap_content"
android:layout_gravity="center_horizontal" android:orientation="horizontal">

<RadioButton android:layout_width="wrap_content" android:layout_height="wrap_content"
android:layout_marginRight="20dp" android:layout_gravity="center_horizontal"
android:text="@string/male" android:layout_marginEnd="20dp" />

<RadioButton android:layout_width="wrap_content" android:layout_height="wrap_content"
android:layout_gravity="center_horizontal" android:layout_marginRight="20dp"
android:text="@string/female" android:layout_marginEnd="20dp" />

</RadioGroup>

</LinearLayout>

<android.support.design.widget.TextInputLayout android:layout_width="match_parent"
android:layout_height="match_parent" android:layout_marginBottom="10sp">

<EditText android:layout_height="wrap_content" android:layout_width="match_parent"
android:id="@+id/date" android:text="@string/_28_11_1997" android:inputType="date"
android:maxLength="50" android:hint="@string/birth_date"/>

</android.support.design.widget.TextInputLayout>
```

```
<android.support.design.widget.TextInputLayout android:layout_width="match_parent"
android:layout_height="match_parent" android:layout_marginBottom="10sp">

<EditText android:layout_height="wrap_content" android:layout_width="match_parent"
android:id="@+id/time" android:inputType="time" android:text="@string/_05_20"
android:maxLength="50" android:hint="@string/birth_time"/>

</android.support.design.widget.TextInputLayout>

<Spinner android:id="@+id/spinnercountry" android:layout_width="match_parent"
android:layout_height="45dp" android:entries="@array/countryarry"
android:layout_marginBottom="10sp"/>

<Spinner android:id="@+id/spinnercity"
android:layout_width="match_parent" android:layout_height="45dp"
android:layout_marginBottom="10sp" />

<Button
android:layout_height="wrap_content"

android:layout_marginTop="10dp" android:id="@+id/submit" android:layout_width="match_parent"
android:text="@string/submit" />

</LinearLayout>

</ScrollView>
```

MainActivity.java

```
package com.example.mcwc.prac4;
import android.annotation.SuppressLint; import android.app.DatePickerDialog;
import android.app.TimePickerDialog; import android.content.Intent;
import android.support.v7.app.AppCompatActivity; import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.DatePicker;
import android.widget.EditText;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.DatePicker;
import android.widget.EditText;
import android.widget.Spinner;
import android.widget.TimePicker;
import java.util.Calendar;
public class MainActivity extends AppCompatActivity {
EditText etdate,ettime,username,password,email,phon,intersts;
Spinner spcountry,spcity;
Button btn;
@Override
```

```
protected void onCreate(Bundle savedInstanceState){
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
etdate=findViewById(R.id.date);
ettime=findViewById(R.id.time);
username=findViewById(R.id.username);
password=findViewById(R.id.password);
phon=findViewById(R.id.number);
intersts=findViewById(R.id.interests);
btn=findViewById(R.id.submit);
spcountry=findViewById(R.id.spinnercountry);
spcity=findViewById(R.id.spinnercity);
etdate.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View v) {
final Calendar myCalendar = Calendar.getInstance();
final DatePickerDialog.OnDateSetListener date = new DatePickerDialog.OnDateSetListener() {
@SuppressLint("SetTextI18n")
@Override
public void onDateSet(DatePicker view, int year, int monthOfYear, int dayOfMonth) {
myCalendar.set(Calendar.YEAR, year);
myCalendar.set(Calendar.MONTH, monthOfYear); myCalendar.set(Calendar.DAY_OF_MONTH,
dayOfMonth); etdate.setText(dayOfMonth+"/"+(monthOfYear+1)+"/"+year);
}
}
}
});
ettime.setOnClickListener(new View.OnClickListener(){
@Override
public void onClick(View v) {
final Calendar myCalendar = Calendar.getInstance();
TimePickerDialog.OnTimeSetListener date = new TimePickerDialog.OnTimeSetListener() {
@SuppressLint("SetTextI18n")
@Override
public void onTimeSet(TimePicker view, int hourOfDay, int minute) {
myCalendar.set(Calendar.HOUR, hourOfDay); myCalendar.set(Calendar.MINUTE, minute);
etdate.setText(minute+" : "+hourOfDay);
}
}
}
});
spcountry.setOnItemSelectedListener(new AdapterView.OnItemSelectedListener(){
@Override
public void onItemSelected(AdapterView<?> parent, View view, int position, long id){
String countryname=String.valueOf(spcountry.getSelectedItem());
if(countryname.equals("India")){
String state[] = {"Gujrat","Mumbai","Rajshthan","Uter Predesh","Kashmir"}; ArrayAdapter<String>
spinnerArrayAdapter = new
ArrayAdapter<>(MainActivity.this,android.R.layout.simple_spinner_item,state);
spinnerArrayAdapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_i
tem);
```

```
spinnerArrayAdapter.notifyDataSetChanged(); spcity.setAdapter(spinnerArrayAdapter);
}
if(countryname.equals("U.S.A.")){
String state[] = {"Alaska","Alabama","Colorado","Hawaii","New York"}; ArrayAdapter<String>
spinnerArrayAdapter = new
ArrayAdapter<>(MainActivity.this,android.R.layout.simple_spinner_item,state);
spinnerArrayAdapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_i
tem);
spinnerArrayAdapter.notifyDataSetChanged(); spcity.setAdapter(spinnerArrayAdapter);
}
if(countryname.equals("China")){
String state[] = {"Hong Kong","Chongqing","Beijing","Yunnan","Henan"}; ArrayAdapter<String>
spinnerArrayAdapter = new
ArrayAdapter<>(MainActivity.this, android.R.layout.simple_spinner_item, state);
spinnerArrayAdapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_i
tem); // The drop down view
spinnerArrayAdapter.notifyDataSetChanged();

spcity.setAdapter(spinnerArrayAdapter);
}
if(countryname.equals("U.K.")){
String state[] = {"Aberdeen","Bangor","Bath","Northern Ireland","Scotland"}; ArrayAdapter<String>
spinnerArrayAdapter = new
ArrayAdapter<>(MainActivity.this, android.R.layout.simple_spinner_item, state);
spinnerArrayAdapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_i
tem);
spinnerArrayAdapter.notifyDataSetChanged(); spcity.setAdapter(spinnerArrayAdapter);
}
}
@Override
public void onNothingSelected(AdapterView<?> parent) {
}
});
btn.setOnClickListener(new View.OnClickListener()
{
@Override
public void onClick(View v) {
Intent i=new Intent(MainActivity.this,Second.class); i.putExtra("user",username.getText().toString());
i.putExtra("pass",password.getText().toString());
i.putExtra("date",etdate.getText().toString());
i.putExtra("time",ettime.getText().toString());
i.putExtra("num",phon.getText().toString());
i.putExtra("country",String.valueOf(spcountry.getSelectedItem()));
i.putExtra("state",String.valueOf(spcity.getSelectedItem()));
startActivity(i);
}
});
}
}
```

activity_second.xml

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

```
<LinearLayout 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:orientation="vertical" android:padding="20sp" android:layout_height="match_parent"
tools:context=".Second">

<TextView android:id="@+id/textView1" android:layout_width="match_parent"
android:layout_height="wrap_content" android:layout_marginBottom="20sp"
android:layout_gravity="center" android:gravity="center" android:textSize="20sp"/>

<TextView android:id="@+id/textView2" android:layout_width="match_parent"
android:layout_height="wrap_content" android:layout_marginBottom="20sp"
android:layout_gravity="center" android:gravity="center" android:textSize="20sp"/>

<TextView android:id="@+id/textView3" android:layout_width="match_parent"
android:layout_height="wrap_content" android:layout_marginBottom="20sp"
android:layout_gravity="center" android:gravity="center" android:textSize="20sp"/>

<TextView android:id="@+id/textView4" android:layout_width="match_parent"
android:layout_height="wrap_content" android:layout_marginBottom="20sp"
android:layout_gravity="center" android:gravity="center" android:textSize="20sp"/>

<TextView android:id="@+id/textView5" android:layout_width="match_parent"
android:layout_height="wrap_content" android:layout_marginBottom="20sp"
android:layout_gravity="center" android:gravity="center" android:textSize="20sp"/>

<TextView android:id="@+id/textView6" android:layout_width="match_parent"
android:layout_height="wrap_content" android:layout_marginBottom="20sp"
android:layout_gravity="center"
android:gravity="center" android:textSize="20sp"/>

<TextView android:id="@+id/textView7" android:layout_width="match_parent"
android:layout_height="wrap_content" android:layout_marginBottom="20sp"
android:layout_gravity="center" android:gravity="center" android:textSize="20sp"/>

</LinearLayout>
```

Second.java

```
package com.example.mcwc.prac4;
import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle; import android.widget.TextView;
public class Second extends AppCompatActivity {
TextView tx1,tx2,tx3,tx4,tx5,tx6,tx7;
@Override
protected void onCreate(Bundle savedInstanceState){
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_second);
tx1=findViewById(R.id.textView1); tx2=findViewById(R.id.textView2);
tx3=findViewById(R.id.textView3); tx4=findViewById(R.id.textView4);
```

```
tx5=findViewById(R.id.textView5); tx6=findViewById(R.id.textView6);
tx7=findViewById(R.id.textView7);
Intent intent = getIntent();
tx1.setText("Your Name is"+intent.getStringExtra("user"));
tx1.setText("Your Password is"+intent.getStringExtra("pass"));
tx1.setText("Your Date is"+intent.getStringExtra("date"));
tx1.setText("Your Time is"+intent.getStringExtra("time"));
tx1.setText("Your Nunmber is"+intent.getStringExtra("num"));
tx1.setText("Your Country is"+intent.getStringExtra("country"));
tx1.setText("Your State is"+intent.getStringExtra("state"));
}
}
```

Output:

Practical – 6

Aim:Write a program that identifies the Bluetooth device in the wireless.

Ans:

MainActivity.java

```
package com.example.myapplication;
import android.os.Bundle;
import android.app.Activity;
import android.view.Menu;
import java.util.Set;
import android.bluetooth.BluetoothAdapter;
import android.bluetooth.BluetoothDevice;
import android.content.Intent;
import android.widget.TextView;


public class MainActivity extends Activity {
   TextView textview1;
private static final int REQUEST_ENABLE_BT = 1;
   BluetoothAdapter btAdapter;

/** Called when the activity is first created. */
@Override
public void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

textview1 = (TextView) findViewById(R.id.textView1);

// Getting the Bluetooth adapter
btAdapter = BluetoothAdapter.getDefaultAdapter();
textview1.append("\nAdapter: "+ btAdapter);

      CheckBluetoothState();
   }

/* It is called when an activity completes.*/
@Override
protected void onActivityResult(int requestCode, int resultCode, Intent data) {
super.onActivityResult(requestCode, resultCode, data);
if (requestCode == REQUEST_ENABLE_BT) {
         CheckBluetoothState();
      }
   }

@Override
protected void onDestroy() {
super.onDestroy();
   }

private void CheckBluetoothState() {
// Checks for the Bluetooth support and then makes sure it is turned on
      // If it isn't turned on, request to turn it on
```

```
        // List paired devices
if(btAdapter==null) {
textview1.append("\nBluetooth NOT supported. Aborting.");
return;
      } else {
if (btAdapter.isEnabled()) {
textview1.append("\nBluetooth is enabled...");

// Listing paired devices
textview1.append("\nPaired Devices are:");
            Set<BluetoothDevice> devices = btAdapter.getBondedDevices();
for (BluetoothDevice device : devices) {
textview1.append("\n  Device: "+ device.getName() + ", "+ device);
            }
          } else {
//Prompt user to turn on Bluetooth
Intent enableBtIntent = new Intent(BluetoothAdapter.ACTION_REQUEST_ENABLE);
            startActivityForResult(enableBtIntent, REQUEST_ENABLE_BT);
          }
      }
   }


@Override
public boolean onCreateOptionsMenu(Menu menu) {
// Inflate the menu; this adds items to the action bar if it is present.
getMenuInflater().inflate(R.menu.main, menu);
return true;
   }

}
```

AndroidMainfest.xml

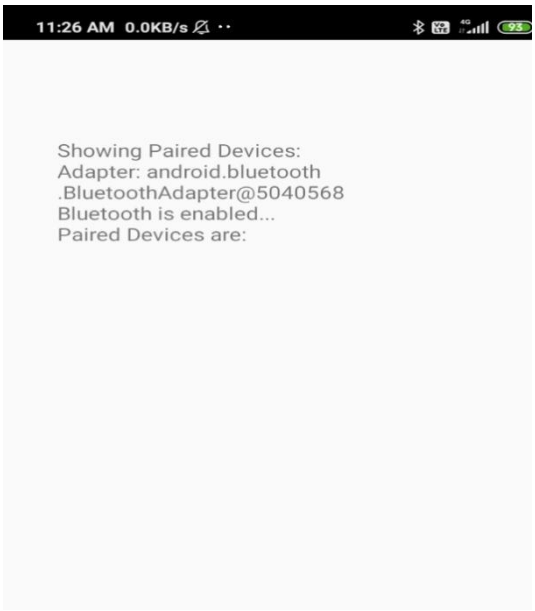
```
<?xml version="1.0"encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
package="com.example.myapplication">
<uses-permission android:name="android.permission.BLUETOOTH"/>
<uses-permission android:name="android.permission.BLUETOOTH_ADMIN"/>

<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/AppTheme">
<activity
android:name=".MainActivity"
android:label="@string/app_name"
android:theme="@style/AppTheme.NoActionBar">
<intent-filter>
<action android:name="android.intent.action.MAIN"/>
```

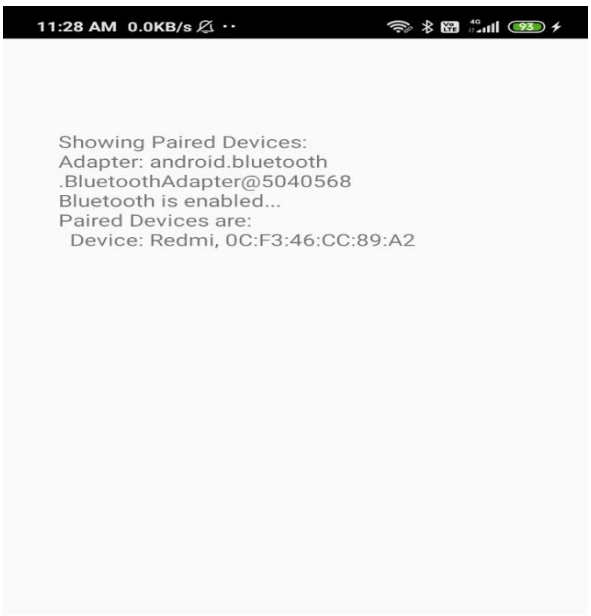
```
<category android:name="android.intent.category.LAUNCHER"/>
</intent-filter>
</activity>
</application>
</manifest>
```

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"
xmlns:app="http://schemas.android.com/apk/res-auto"android:layout_width="match_parent"
android:layout_height="match_parent"android:paddingLeft="@dimen/activity_horizontal_margin"
android:paddingRight="@dimen/activity_horizontal_margin"
android:paddingTop="@dimen/activity_vertical_margin"
android:paddingBottom="@dimen/activity_vertical_margin"
app:layout_behavior="@string/appbar_scrolling_view_behavior"
tools:showIn="@layout/activity_main"tools:context=".MainActivity">

<TextView
android:id="@+id/textView1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentLeft="true"
android:layout_alignParentTop="true"
android:layout_marginLeft="18dp"
android:layout_marginTop="61dp"
android:text="Showing Paired Devices:"/>
</RelativeLayout>
```

Output:





Practical – 7

Aim:-Write an android application to check network status.

Ans:

MainActivity.java

```
package com.example.networkstatus;

import android.app.Activity;
import android.app.ProgressDialog;
import android.graphics.Bitmap;
import android.graphics.BitmapFactory;

import android.net.ConnectivityManager;
import android.os.Bundle;
import android.os.Handler;
import android.os.Message;
import android.view.View;

import android.widget.Button;
import android.widget.ImageView;
import android.widget.Toast;

import com.example.networkstatus.R;

import java.io.IOException;
import java.io.InputStream;

import java.net.HttpURLConnection;
import java.net.MalformedURLException;
import java.net.URL;
import java.net.URLConnection;

public class MainActivity extends Activity {
private ProgressDialog progressDialog;
private Bitmap bitmap = null;
   Button b1;

@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
b1 = (Button) findViewById(R.id.button);

b1.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View v) {
            checkInternetConenction();
         }
      });
   }


private Handler messageHandler = new Handler() {
public void handleMessage(Message msg) {
```

```
super.handleMessage(msg);
progressDialog.dismiss();
      }
   };

private boolean checkInternetConenction() {
// get Connectivity Manager object to check connection
ConnectivityManager connec

=(ConnectivityManager)getSystemService(getBaseContext().CONNECTIVITY_SERVICE);

// Check for network connections
if ( connec.getNetworkInfo(0).getState() ==
            android.net.NetworkInfo.State.CONNECTED ||
            connec.getNetworkInfo(0).getState() ==
                  android.net.NetworkInfo.State.CONNECTING ||
            connec.getNetworkInfo(1).getState() ==
                  android.net.NetworkInfo.State.CONNECTING ||
            connec.getNetworkInfo(1).getState() == android.net.NetworkInfo.State.CONNECTED ) {
         Toast.makeText(this, " Connected ", Toast.LENGTH_LONG).show();
return true;
      }else if (
            connec.getNetworkInfo(0).getState() ==
                  android.net.NetworkInfo.State.DISCONNECTED ||
                  connec.getNetworkInfo(1).getState() ==
                        android.net.NetworkInfo.State.DISCONNECTED  ) {
         Toast.makeText(this, " Not Connected ", Toast.LENGTH_LONG).show();
return false;
      }
return false;
   }

}
```

AndroidMainfest.xml

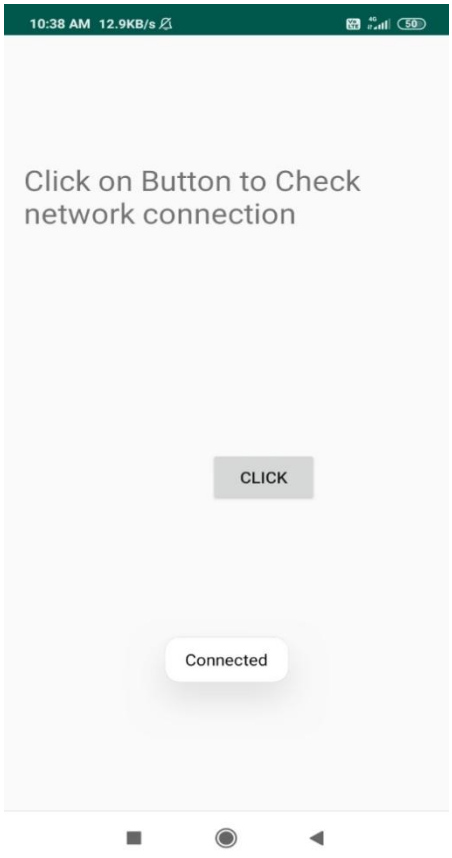
```
<?xml version="1.0"encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
package="com.example.networkstatus">
<uses-permission android:name="android.permission.INTERNET"></uses-permission>
<uses-permission android:name="android.permission.ACCESS_NETWORK_STATE"></uses-
permission>

<application
android:allowBackup="true"
android:icon="@mipmap/ic_launcher"
android:label="@string/app_name"
android:theme="@style/AppTheme">

<activity
android:name=".MainActivity"
android:label="@string/app_name">

<intent-filter>
```

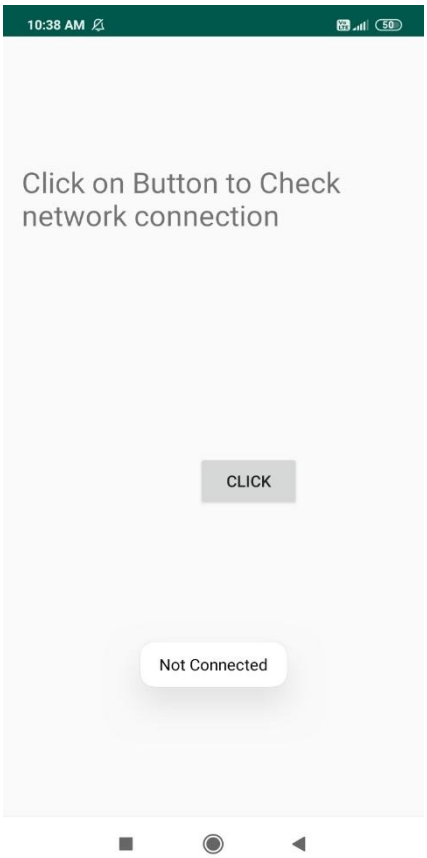
```
<action android:name="android.intent.action.MAIN"/>
<category android:name="android.intent.category.LAUNCHER"/>
</intent-filter>

</activity>

</application>
</manifest>
```

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:paddingLeft="@dimen/activity_horizontal_m
argin"
android:paddingRight="@dimen/activity_horizontal_margin"
android:paddingTop="@dimen/activity_vertical_margin"
android:paddingBottom="@dimen/activity_vertical_margin"tools:context=".MainActivity">

<TextView
android:id="@+id/textView"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_alignParentTop="true"
android:layout_marginTop="95dp"
android:text="Click on Button to Check network connection"
android:textSize="25sp"/>


<Button
android:id="@+id/button"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginLeft="150dp"
android:layout_marginTop="350dp"
android:text="Click"/>

</RelativeLayout>
```

Output:


10:38 AM 12.9KB/s
Click on Button to Check network connection
CLICK
Connected


10:38 AM
Click on Button to Check network connection
CLICK
Not Connected

Practical-8

AIM:Develop calculator Android Application.

Ans: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:id="@+id/relative1"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">

<EditText
      android:id="@+id/edt1"
android:layout_width="match_parent"
android:layout_height="wrap_content" />



<Button
      android:id="@+id/button1"
style="?android:attr/buttonStyleSmall"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
      android:layout_alignEnd="@+id/button4"
      android:layout_alignRight="@+id/button4"
      android:layout_below="@+id/edt1"
android:layout_marginTop="94dp"
android:text="1" />

<Button
      android:id="@+id/button2"
style="?android:attr/buttonStyleSmall"
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
        android:layout_alignTop="@+id/button1"
        android:layout_toLeftOf="@+id/button3"
        android:layout_toStartOf="@+id/button3"
android:text="2" />

<Button
        android:id="@+id/button3"
style="?android:attr/buttonStyleSmall"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
        android:layout_alignTop="@+id/button2"
android:layout_centerHorizontal="true"
android:text="3" />

<Button
        android:id="@+id/button4"
style="?android:attr/buttonStyleSmall"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
        android:layout_below="@+id/button1"
        android:layout_toLeftOf="@+id/button2"
android:text="4" />

<Button
        android:id="@+id/button5"
style="?android:attr/buttonStyleSmall"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
        android:layout_alignBottom="@+id/button4"
        android:layout_alignLeft="@+id/button2"
        android:layout_alignStart="@+id/button2"
```

```
android:text="5" />

<Button
    android:id="@+id/button6"
style="?android:attr/buttonStyleSmall"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button3"
    android:layout_alignStart="@+id/button3"
    android:layout_below="@+id/button3"
android:text="6" />

<Button
    android:id="@+id/button7"
style="?android:attr/buttonStyleSmall"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
    android:layout_below="@+id/button4"
    android:layout_toLeftOf="@+id/button2"
android:text="7" />

<Button
    android:id="@+id/button8"
style="?android:attr/buttonStyleSmall"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button5"
    android:layout_alignStart="@+id/button5"
    android:layout_below="@+id/button5"
android:text="8" />

<Button
```

```
        android:id="@+id/button9"
style="?android:attr/buttonStyleSmall"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
        android:layout_alignLeft="@+id/button6"
        android:layout_alignStart="@+id/button6"
        android:layout_below="@+id/button6"
android:text="9" />

<Button
        android:id="@+id/buttonadd"
style="?android:attr/buttonStyleSmall"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
        android:layout_alignEnd="@+id/edt1"
        android:layout_alignRight="@+id/edt1"
        android:layout_alignTop="@+id/button3"
android:layout_marginLeft="46dp"
android:layout_marginStart="46dp"
        android:layout_toRightOf="@+id/button3"
android:text="+" />

<Button
        android:id="@+id/buttonsub"
style="?android:attr/buttonStyleSmall"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
        android:layout_alignEnd="@+id/buttonadd"
        android:layout_alignLeft="@+id/buttonadd"
        android:layout_alignRight="@+id/buttonadd"
        android:layout_alignStart="@+id/buttonadd"
        android:layout_below="@+id/buttonadd"
```

```
android:text="-" />

<Button
    android:id="@+id/buttonmul"
style="?android:attr/buttonStyleSmall"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/buttonsub"
android:layout_alignParentEnd="true"
android:layout_alignParentRight="true"
    android:layout_alignStart="@+id/buttonsub"
    android:layout_below="@+id/buttonsub"
android:text="*" />

<Button
    android:id="@+id/button10"
style="?android:attr/buttonStyleSmall"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
    android:layout_below="@+id/button7"
    android:layout_toLeftOf="@+id/button2"
android:text="." />

<Button
    android:id="@+id/button0"
style="?android:attr/buttonStyleSmall"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button8"
    android:layout_alignStart="@+id/button8"
    android:layout_below="@+id/button8"
android:text="0" />
```

```
<Button
    android:id="@+id/buttonC"
style="?android:attr/buttonStyleSmall"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button9"
    android:layout_alignStart="@+id/button9"
    android:layout_below="@+id/button9"
android:text="C" />

<Button
    android:id="@+id/buttondiv"
style="?android:attr/buttonStyleSmall"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
    android:layout_alignEnd="@+id/buttonmul"
    android:layout_alignLeft="@+id/buttonmul"
    android:layout_alignRight="@+id/buttonmul"
    android:layout_alignStart="@+id/buttonmul"
    android:layout_below="@+id/buttonmul"
android:text="/" />

<Button
    android:id="@+id/buttoneql"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
    android:layout_alignEnd="@+id/buttondiv"
    android:layout_alignLeft="@+id/button10"
    android:layout_alignRight="@+id/buttondiv"
    android:layout_alignStart="@+id/button10"
    android:layout_below="@+id/button0"
```

```
android:layout_marginTop="37dp"
android:text="=" />

</RelativeLayout>
```

MainActivity.Java

```
package com.crunchify.tutorials.crunchifycalculator;
import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
public class MainActivity extends AppCompatActivity {
   Button button0, button1, button2, button3, button4, button5, button6,
         button7, button8, button9, buttonAdd, buttonSub, buttonDivision,
buttonMul, button10, buttonC, buttonEqual;
   EditText edt_value;
float mValueOne, mValueTwo;
boolean Addition, mSubtract, Multiplication,Division;

   @Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
      button0 = (Button) findViewById(R.id.button0);
      button1 = (Button) findViewById(R.id.button1);
      button2 = (Button) findViewById(R.id.button2);
      button3 = (Button) findViewById(R.id.button3);
      button4 = (Button) findViewById(R.id.button4);
      button5 = (Button) findViewById(R.id.button5);
      button6 = (Button) findViewById(R.id.button6);
      button7 = (Button) findViewById(R.id.button7);
      button8 = (Button) findViewById(R.id.button8);
```

```
        button9 = (Button) findViewById(R.id.button9);
        button10 = (Button) findViewById(R.id.button10);
buttonAdd = (Button) findViewById(R.id.buttonadd);
buttonSub = (Button) findViewById(R.id.buttonsub);
buttonMul = (Button) findViewById(R.id.buttonmul);
buttonDivision = (Button) findViewById(R.id.buttondiv);
buttonC = (Button) findViewById(R.id.buttonC);
buttonEqual = (Button) findViewById(R.id.buttoneql);
edt_value = (EditText) findViewById(R.id.edt1);

button1.setOnClickListener(new View.OnClickListener() {
            @Override
public void onClick(View v) {
edt_value.setText(edt_value.getText() + "1");
            }
        });

button2.setOnClickListener(new View.OnClickListener() {
            @Override
public void onClick(View v) {
edt_value.setText(edt_value.getText() + "2");
            }
        });

button3.setOnClickListener(new View.OnClickListener() {
            @Override
public void onClick(View v) {
edt_value.setText(edt_value.getText() + "3");
            }
        });

button4.setOnClickListener(new View.OnClickListener() {
```

```
        @Override
public void onClick(View v) {
edt_value.setText(edt_value.getText() + "4");
        }
    });

button5.setOnClickListener(new View.OnClickListener() {
        @Override
public void onClick(View v) {
edt_value.setText(edt_value.getText() + "5");
        }
    });

button6.setOnClickListener(new View.OnClickListener() {
        @Override
public void onClick(View v) {
edt_value.setText(edt_value.getText() + "6");
        }
    });
button7.setOnClickListener(new View.OnClickListener() {
        @Override
public void onClick(View v) {
edt_value.setText(edt_value.getText() + "7");
        }
    });
button8.setOnClickListener(new View.OnClickListener() {
        @Override
public void onClick(View v) {
edt_valuet.setText(edt_value.getText() + "8");
        }
    });
button9.setOnClickListener(new View.OnClickListener() {
```

```
        @Override
public void onClick(View v) {
edt_value.setText(edt_value.getText() + "9");
        }
    });

button0.setOnClickListener(new View.OnClickListener() {
        @Override
public void onClick(View v) {
edt_value.setText(edt_value.getText() + "0");
        }
    });

buttonAdd.setOnClickListener(new View.OnClickListener() {
        @Override
public void onClick(View v) {

if (edt_value == null) {
edt_value.setText("");
            } else {
mValueOne = Float.parseFloat(edt_value.getText() + "");
Addition = true;
edt_value.setText(null);
            }
        }
    });
buttonSub.setOnClickListener(new View.OnClickListener() {
        @Override
public void onClick(View v) {
mValueOne = Float.parseFloat(edt_value.getText() + "");
mSubtract = true;
edt_value.setText(null);
```

```
        }
    });
buttonMul.setOnClickListener(new View.OnClickListener() {
        @Override
public void onClick(View v) {
mValueOne = Float.parseFloat(edt_value.getText() + "");
Multiplication = true;
edt_value.setText(null);
        }
});
buttonDivision.setOnClickListener(new View.OnClickListener() {
        @Override
public void onClick(View v) {
mValueOne = Float.parseFloat(edt_value.getText() + "");
Division = true;
edt_value.setText(null);
        }
    });
buttonEqual.setOnClickListener(new View.OnClickListener() {
        @Override
public void onClick(View v) {
mValueTwo = Float.parseFloat(edt_value.getText() + "");
if (Addition == true) {
edt_value.setText(mValueOne + mValueTwo + "");
Addition = false;
            }
if (mSubtract == true) {
edt_value.setText(mValueOne - mValueTwo + "");
mSubtract = false;
            }

if (Multiplication == true) {
```

```
edt_value.setText(mValueOne * mValueTwo + "");
Multiplication = false;
            }
if (Division == true) {
edt_value.setText(mValueOne / mValueTwo + "");
Division = false;
            }
        }
    });
buttonC.setOnClickListener(new View.OnClickListener() {
        @Override
public void onClick(View v) {
edt_value.setText("");
        }
    });
button10.setOnClickListener(new View.OnClickListener() {
        @Override
public void onClick(View v) {
edt_value.setText(crunchifyEditText.getText() + ".");
        }
    });
  }
}
```

Output:

Practical-9

AIM:Using Android, Create a login Activity.

Ans:

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:paddingBottom="@dimen/activity_vertical_margin"
android:paddingLeft="@dimen/activity_horizontal_margin"
android:paddingRight="@dimen/activity_horizontal_margin"
android:paddingTop="@dimen/activity_vertical_margin"
tools:context="com.example.administrator.login.MainActivity"
android:background="@drawable/images">

<TextView

android:id="@+id/textView2" android:layout_width="wrap_content"
android:layout_height="wrap_content" android:layout_alignRight="@+id/textView1"
android:layout_below="@+id/editText1" android:layout_marginTop="52dp"
android:text="Password" android:textAppearance="?android:attr/textAppearanceLarge" />

<EditText

android:id="@+id/editText2" android:layout_width="wrap_content"
android:layout_height="wrap_content" android:layout_alignLeft="@+id/editText1"
android:layout_alignTop="@+id/textView2" android:ems="10" android:inputType="textPassword"
/>

<Button

android:id="@+id/button1" android:layout_width="wrap_content"
android:layout_height="wrap_content" android:layout_below="@+id/editText2"
android:layout_centerHorizontal="true" android:layout_marginTop="54dp" android:text="Login"
android:textSize="20dp"/>

<TextView

android:id="@+id/textView1" android:layout_width="wrap_content"
android:layout_height="wrap_content" android:layout_alignParentLeft="true"
android:layout_alignParentTop="true" android:layout_marginTop="84dp" android:text="Username"

android:textAppearance="?android:attr/textAppearanceLarge" />

```
<EditText
android:id="@+id/editText1" android:layout_width="wrap_content"
android:layout_height="wrap_content" android:layout_alignTop="@+id/textView1"
android:layout_toRightOf="@+id/textView1" android:ems="10">
<requestFocus />
</EditText>
</RelativeLayout>
```

MainActivity.java

```
package com.example.administrator.login;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.content.Intent;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity{
EditText et1,et2;
Button b1;
@Override
protected void onCreate(Bundle savedInstanceState){
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
et1 = (EditText) findViewById(R.id.editText1); et2 = (EditText) findViewById(R.id.editText2); b1 =
(Button) findViewById(R.id.button1);
b1.setOnClickListener(new View.OnClickListener() { @Override
public void onClick(View v) {
String s1 = et1.getText().toString();
String s2 = et2.getText().toString();
if(s1.equals("admin") && s2.equals("admin")){
Intent i = new Intent(getApplicationContext(),SecondActivity.class);
startActivity(i);
```

```
}
else
{
Toast.makeText(getApplicationContext(), " Invalid UserName or Password ",
Toast.LENGTH_LONG).show();
}
}
});
}
}
```

activity_second.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
android:orientation="vertical" android:layout_width="match_parent"
android:layout_height="match_parent">

<TextView
android:layout_width="match_parent" android:layout_height="match_parent"
android:gravity="center_vertical|center_horizontal" android:textColor="@color/colorAccent"
android:text="Welcome to Activity 2" android:textSize="50dp"/>
</LinearLayout>
```

SecondActivity.java

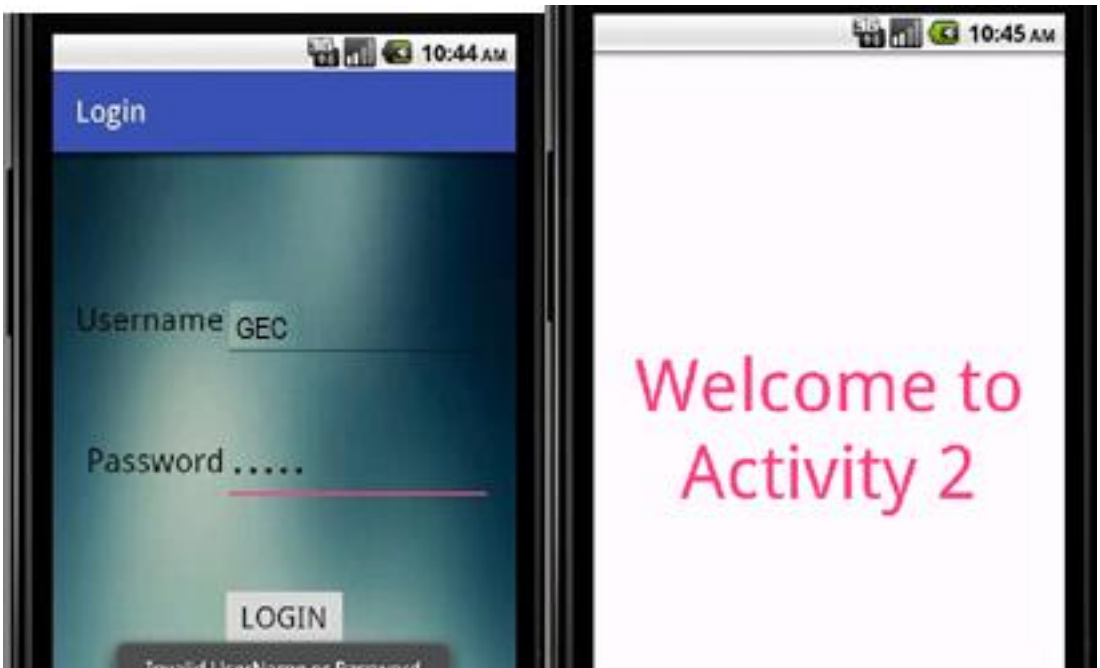
```
package com.example.administrator.login;
import android.app.Activity;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
public class MainActivity2 extends Activity {
@Override
protected void onCreate(Bundle savedInstanceState) {
```

```
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_second);
}
}
```

AndroidManifiest.xml

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

<application
android:allowBackup="true" android:icon="@mipmap/ic_launcher"
android:label="@string/app_name" android:supportsRtl="true" android:theme="@style/AppTheme">
<activity android:name=".MainActivity">
<intent-filter>
<action android:name="android.intent.action.MAIN" />
<category android:name="android.intent.category.LAUNCHER" />
</intent-filter>
</activity>
</application>
<activity android:name=".activity_second" android:label="@string/title_activity_second">
</activity>
</manifest>
```

Output:



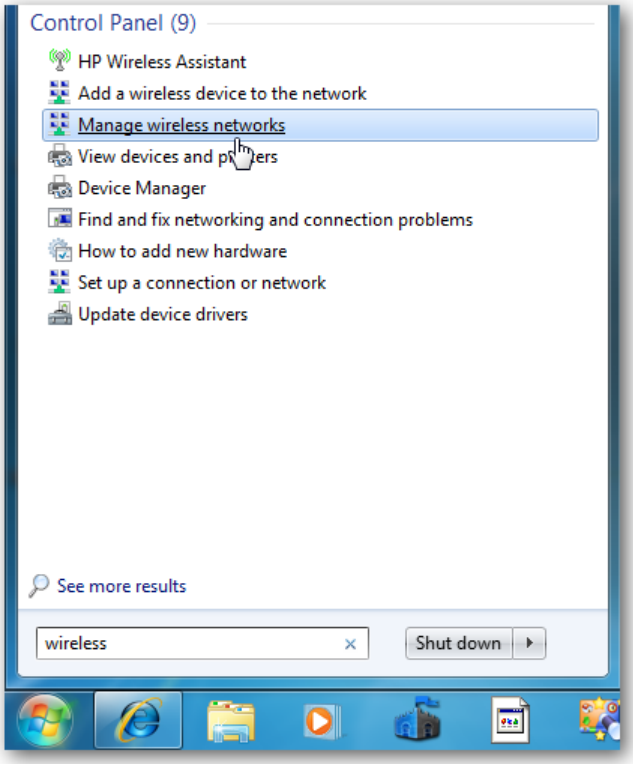
Practical 10

Aim: Prepare a wireless ad hoc network and show its working.

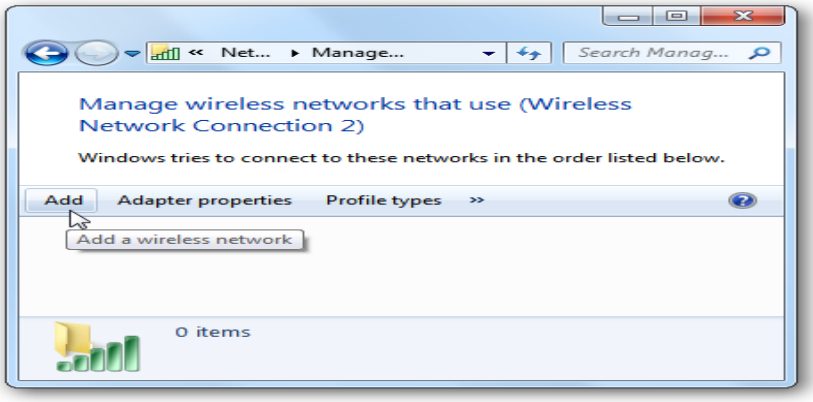
An ad hoc network is a local area network you can build spontaneously in a pinch. It allows computers and devices to communicate directly with each other within a small radius. The ability to create an ad hoc network has been possible since XP and is a way to quickly share data and an Internet connection to other wireless devices. For this tutorial you'll need the host computer to be hardwired and have wireless capabilities such as a Netbook or Laptop.

Create an ad hoc Network

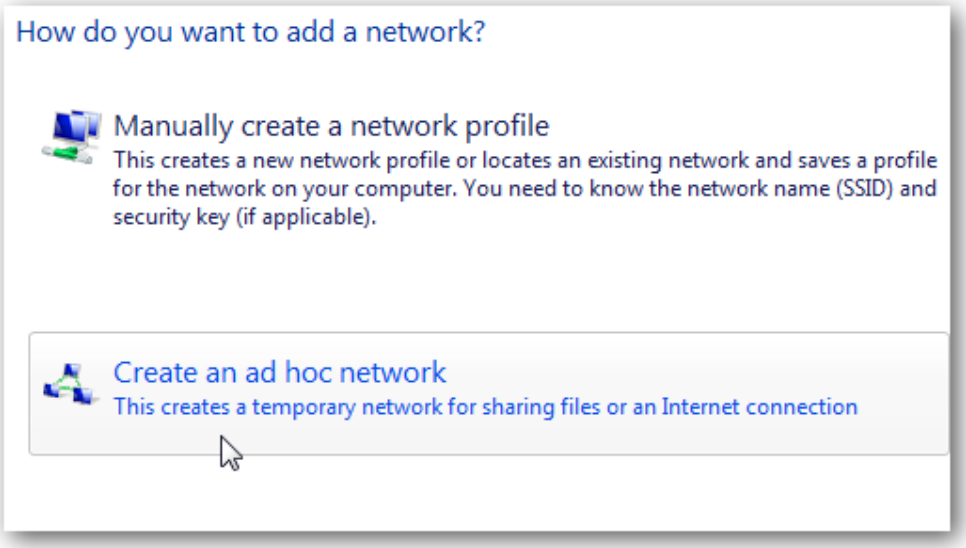
Open the Start Menu and type wireless into the Search box and select Manage wireless networks.



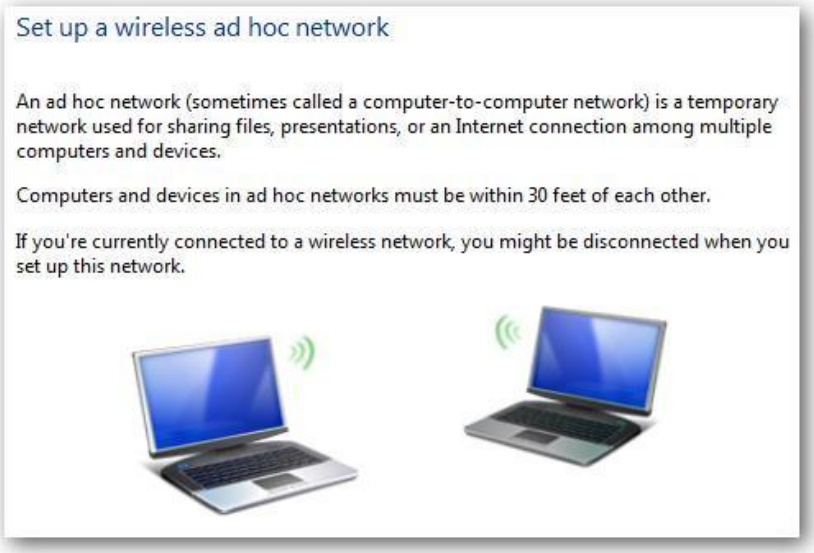
Click the Add button to add a wireless network.



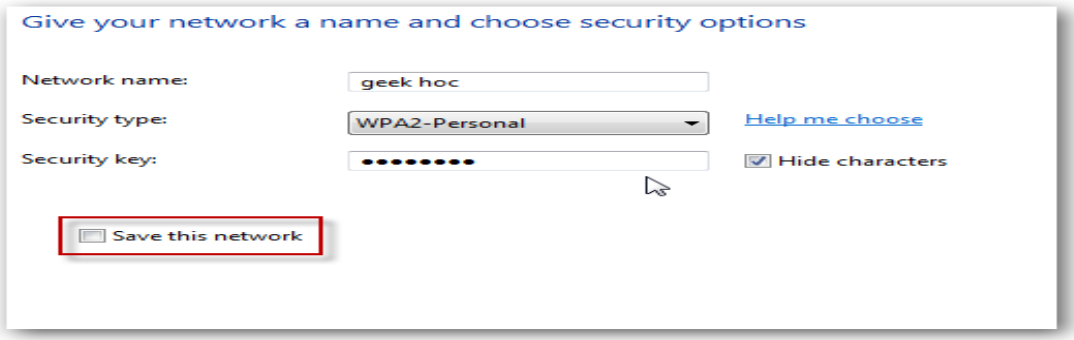
Next click on Create an ad hoc network…



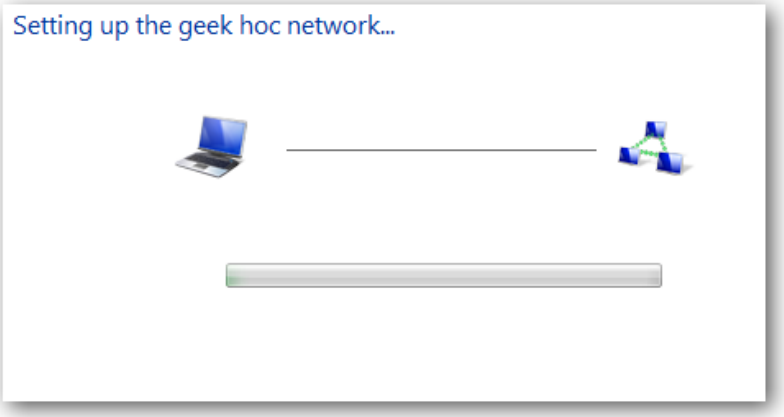
You'll get a message instructing you of what an ad hoc network is…click Next.



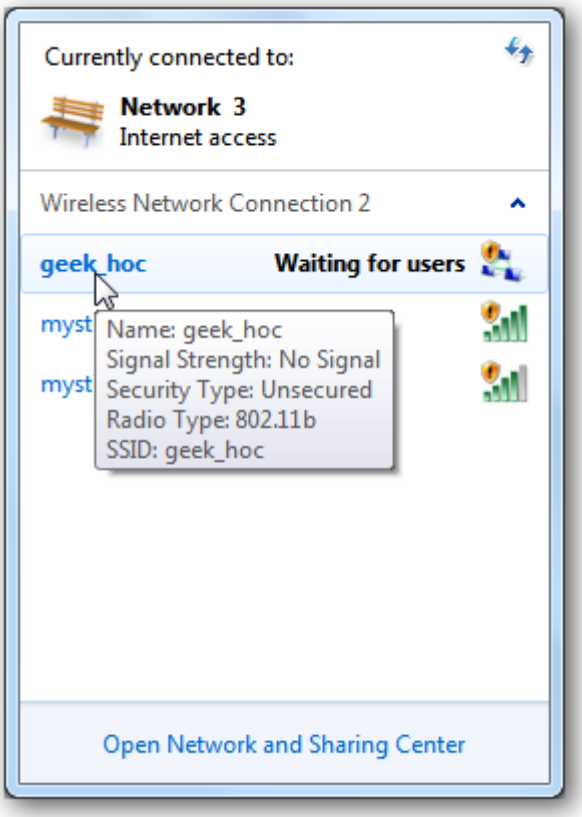
Now give your network a name and choose security options…check Save this network if you plan to use it repeatedly so you don't have to set one up each time. The security type will depend on what the wireless adapter is capable of. We found if you're only using it quickly with different types of devices it's easier to have no security. Of course if you are keeping it on for full-time use, you'll definitely want to use security.



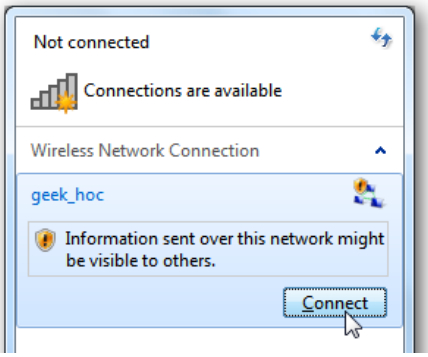
Wait while the network is created…



Verify the network by clicking the wireless icon on the Taskbar…here you can see ours is waiting for users to connect.



On the Client computer, click on the wireless icon to see available networks and connect to the ad hoc network.



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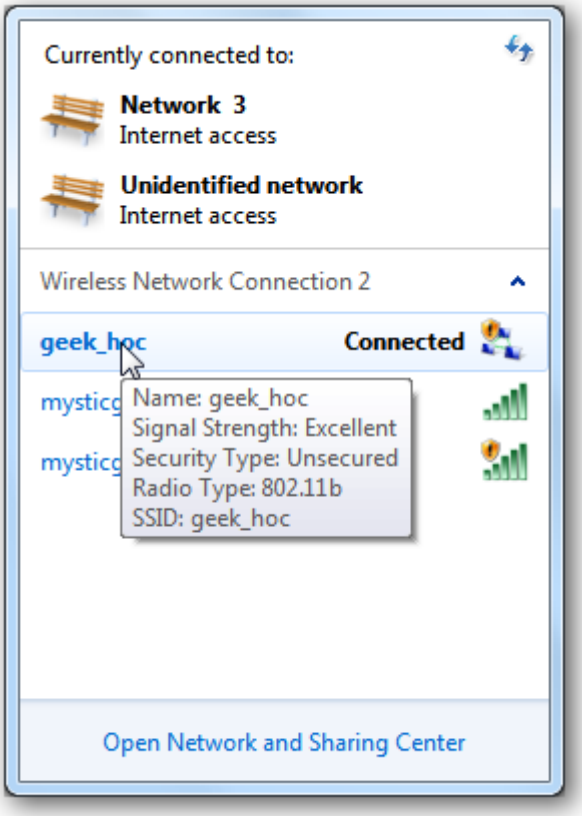
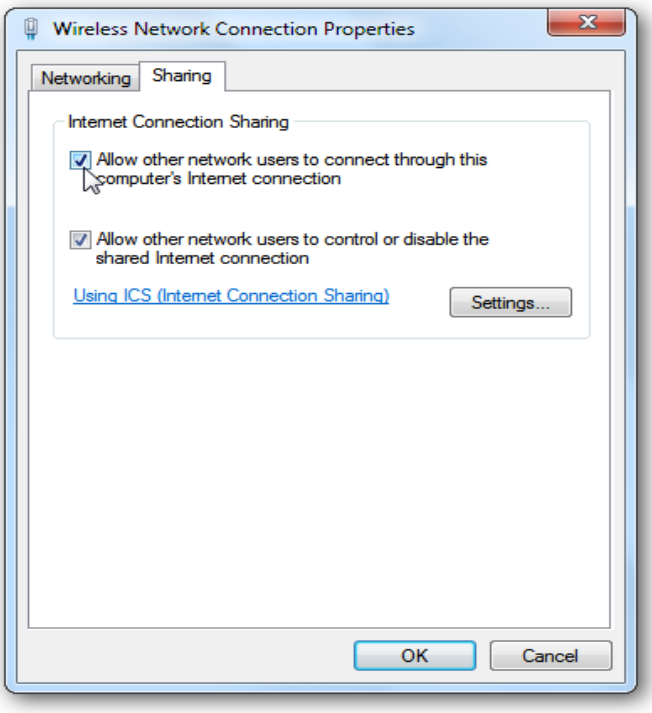
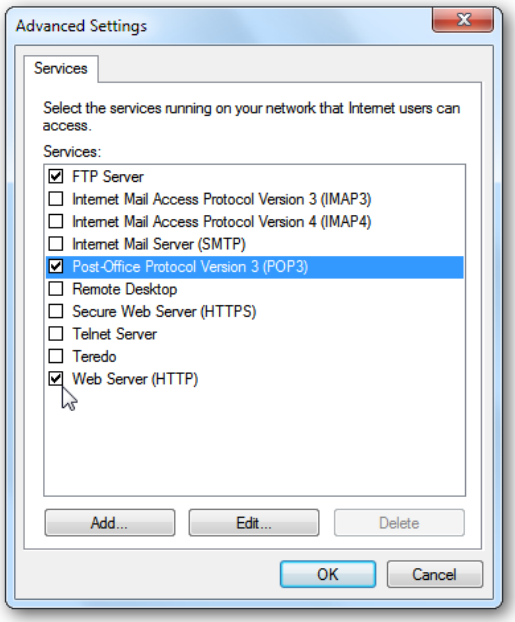
Then on the Host machine you will see that the other computer is connected to your ad hoc network.



At this point you'll be able to share files between machines. To share an Internet connection with other devices, right-click on the Host's wireless adapter icon. Go to Properties, click the Sharing tab, and select *Allow other network users to connect through this computer's Internet connection*.



In Settings you can select the network services the Client machine can access.



Now you can share documents and the Internet connection between machines and devices. In this example we're sharing between a Windows 7 desktop with a wireless card and a Netbook with Windows 7 HomePremium.