**ACTIVITY\_MAIN.java**  
**package** com.example.myapplication1;  
  
**import** androidx.annotation.NonNull;  
**import** androidx.appcompat.app.AppCompatActivity;  
  
**import** android.content.Intent;  
**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** com.google.android.gms.tasks.OnCompleteListener;  
**import** com.google.android.gms.tasks.Task;  
**import** com.google.firebase.auth.AuthResult;  
**import** com.google.firebase.auth.FirebaseAuth;  
**import** androidx.appcompat.app.AlertDialog;  
**import** android.content.DialogInterface;  
  
**import static** android.widget.Toast.*makeText*;  
  
**public class** MainActivity **extends** AppCompatActivity **implements** View.OnClickListener{  
 **public** Button **Register**;  
 EditText **Password**,**Email**;  
 TextView **SignIn**;  
 FirebaseAuth **f**;  
  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_main***);  
  
 **f**= FirebaseAuth.*getInstance*();  
  
  
 **Email** = (EditText) findViewById(R.id.***Email***);  
 **Password** = (EditText) findViewById(R.id.***Password***);  
 **SignIn** = (TextView) findViewById(R.id.***SignIn***);  
 **Register**=(Button)findViewById(R.id.***ButtonReg***);  
  
 **Register**.setOnClickListener(**this**);  
 **SignIn**.setOnClickListener(**this**);  
 }  
 @Override  
 **public void** onBackPressed() {  
  
 AlertDialog.Builder builder = **new** AlertDialog.Builder(MainActivity.**this**);  
 builder.setTitle(R.string.***app\_name***);  
 builder.setIcon(R.mipmap.***ic\_launcher***);  
 builder.setMessage(**"Do you want to exit?"**)  
 .setCancelable(**false**)  
 .setPositiveButton(**"Yes"**, **new** DialogInterface.OnClickListener() {  
 **public void** onClick(DialogInterface dialog, **int** id) {  
 finish();  
 }  
 })  
 .setNegativeButton(**"No"**, **new** DialogInterface.OnClickListener() {  
 **public void** onClick(DialogInterface dialog, **int** id) {  
 dialog.cancel();  
 }  
 });  
 AlertDialog alert = builder.create();  
 alert.show();  
  
 }  
  
  
 **public void** RegisterUser() {  
 String mail = **Email**.getText().toString().trim();  
 String pwd = **Password**.getText().toString().trim();  
 **if** (mail.isEmpty()) {  
 **Email**.setError(**"Enter a valid Username"**);  
 **Email**.requestFocus();  
 **return**;  
 } **else if** (pwd.isEmpty()) {  
 **Password**.setError(**"Enter a valid Username"**);  
 **Password**.requestFocus();  
 **return**;  
 } **else if** (mail.isEmpty() && pwd.isEmpty()) {  
 *makeText*(MainActivity.**this**, **"Fields are empty.."**, Toast.***LENGTH\_SHORT***).show();  
 **return**;  
 }  
 **f**.createUserWithEmailAndPassword(mail,pwd).addOnCompleteListener(MainActivity.**this**, **new** OnCompleteListener<AuthResult>() {  
 @Override  
 **public void** onComplete(@NonNull Task<AuthResult> task) {  
 **if**(task.isSuccessful()) {  
 *//user is successfully logged in* Toast.*makeText*(MainActivity.**this**, **"Registered successfully"**, Toast.***LENGTH\_SHORT***).show();  
  
 }  
 **else** {  
 Toast.*makeText*(MainActivity.**this**, **"Could not register..Please do try again"**, Toast.***LENGTH\_SHORT***).show();  
 }  
  
  
 }  
 });  
 }  
  
 @Override  
 **public void** onClick(View v) {  
 **if**(v == **Register** )  
 {  
 RegisterUser();  
 }  
 **if**(v== **SignIn**)  
 {  
 *// will open login activity here* startActivity(**new** Intent(MainActivity.**this**,LoginActivity.**class**));  
 }  
 }  
}

**LOGINACTIVITY.JAVA**

**package** com.example.myapplication1;  
  
**import** androidx.appcompat.app.AppCompatActivity;  
**import** androidx.annotation.NonNull;  
  
**import** android.annotation.SuppressLint;  
**import** android.content.Intent;  
**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** com.google.android.gms.tasks.OnCompleteListener;  
**import** com.google.android.gms.tasks.Task;  
**import** com.google.firebase.auth.AuthResult;  
**import** com.google.firebase.auth.FirebaseAuth;  
  
**import static** android.widget.Toast.*makeText*;  
  
**public class** LoginActivity **extends** AppCompatActivity **implements** View.OnClickListener {  
 Button **SignIn**;  
 EditText **Email**;  
 EditText **Password**;  
 TextView **textViewSignUp**;  
 FirebaseAuth **fa**;  
  
  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_login***);  
  
 **fa**=FirebaseAuth.*getInstance*();  
  
  
 **Email** = (EditText) findViewById(R.id.***Email***);  
 **Password** = (EditText) findViewById(R.id.***Password***);  
 **textViewSignUp** = (TextView) findViewById(R.id.***TextviewSignUp***);  
 **SignIn**=(Button)findViewById(R.id.***SignIn***);  
  
 **textViewSignUp**.setOnClickListener(**this**);  
 **SignIn**.setOnClickListener(**this**);  
  
  
 }  
 **public void** UserLogin() {  
 String mail = **Email**.getText().toString();  
 String pwd = **Password**.getText().toString();  
  
 **if** (mail.isEmpty()) {  
 **Email**.setError(**"Enter a valid Username"**);  
 **Email**.requestFocus();  
 **return**;  
 } **else if** (pwd.isEmpty()) {  
 **Password**.setError(**"Enter a valid Username"**);  
 **Password**.requestFocus();  
 **return**;  
 } **else if** (mail.isEmpty() && pwd.isEmpty()) {  
 *makeText*(LoginActivity.**this**, **"Fields are empty.."**, Toast.***LENGTH\_SHORT***).show();  
 **return**;  
 }  
 **fa**.signInWithEmailAndPassword(mail,pwd).addOnCompleteListener(**this**, **new** OnCompleteListener<AuthResult>() {  
 @Override  
 **public void** onComplete(@NonNull Task<AuthResult> task) {  
  
 **if**(task.isSuccessful())  
 {  
 *//start the profile activity* Toast.*makeText*(LoginActivity.**this**,**"Kindly do login to view our recepies"**,Toast.***LENGTH\_SHORT***).show();  
 finish();  
 }  
 **else** {  
 Toast.*makeText*(LoginActivity.**this**,**"Registration error "**,Toast.***LENGTH\_SHORT***).show();  
 }  
 }  
 });  
 }  
 @Override  
 **public void** onClick(View view) {  
 **if**(view== **SignIn**)  
 {  
 startActivity(**new** Intent(LoginActivity.**this**,Main1Activity.**class**));  
 finish();  
 }  
 **if**(view==**textViewSignUp**)  
 {  
  
 startActivity(**new** Intent(LoginActivity.**this**,MainActivity.**class**));  
 finish();  
 }  
 }  
}

**MAIN1ACTIVITY.JAVA**

**package** com.example.myapplication1;  
  
**import** androidx.appcompat.app.AppCompatActivity;  
  
**import** android.os.Bundle;  
**import** android.widget.EditText;  
**import** android.widget.ExpandableListAdapter;  
**import** android.widget.ExpandableListView;  
**import** android.widget.Toast;  
**import** android.content.Intent;  
  
**import** com.google.firebase.auth.FirebaseAuth;  
  
**import** com.google.firebase.auth.FirebaseUser;  
  
**import** java.util.ArrayList;  
**import** java.util.HashMap;  
**import** java.util.List;  
**import** java.util.Map;  
  
**public class** Main1Activity **extends** AppCompatActivity {  
 ExpandableListView **elv**;  
 Expandmenuadadapter **exa**;  
 ArrayList<String> **Listcat**;  
 Map<String,ArrayList<String >> **mapchild**;  
  
  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_main1***);  
**mapchild**=**new** HashMap<>();  
**elv**=(ExpandableListView)findViewById(R.id.***elv***);  
**Listcat**=**new** ArrayList<>();  
  
collectdata();  
 Toast.*makeText*(Main1Activity.**this**,**"Welcome to the introduction of food recipes.."**,Toast.***LENGTH\_SHORT***).show();  
 }  
 **public void** collectdata()  
 {  
 ArrayList<String> menu=**new** ArrayList<>();  
 ArrayList<String> menu1=**new** ArrayList<>();  
 ArrayList<String> menu2=**new** ArrayList<>();  
 **Listcat**.add(**"Category"**);  
  
 **mapchild**.put(**Listcat**.get(0),menu);  
 **Listcat**.add(**"VEG"**);  
 menu1.add(**"IDIYAPPAM"**);  
 menu1.add(**"KUZHIPANIYARAM"**);  
  
 **mapchild**.put(**Listcat**.get(1),menu1);  
  
 **Listcat**.add(**"NON-VEG"**);  
 menu2.add(**"FISH"**);  
 menu2.add(**"CHICKEN"**);  
 menu2.add(**"MUTTON"**);  
  
 **mapchild**.put(**Listcat**.get(2),menu2);  
  
  
 **exa**=**new** Expandmenuadadapter(**this**, **mapchild**, **Listcat**);  
 **elv**.setAdapter(**exa**);  
  
 }  
}

**ExpandMenuAdapter.Java**

**package** com.example.myapplication1;  
  
**import** android.view.LayoutInflater;  
**import** android.view.View;  
**import** android.view.ViewGroup;  
**import** android.widget.BaseExpandableListAdapter;  
  
**import** java.util.ArrayList;  
**import** android.content.Context;  
**import** android.widget.TextView;  
  
**import** java.util.Map;  
  
  
**public class** Expandmenuadadapter **extends** BaseExpandableListAdapter {  
 ArrayList<String> **Listcat**;  
 Context **context**;  
 Map<String,ArrayList<String >> **mapchild**;  
 TextView **tvgroup**,**tvchild**;  
  
 **public** Expandmenuadadapter (Context context,Map<String,ArrayList<String>> mapchild,ArrayList<String>Listcat){  
 **this**.**context**=context;  
 **this**.**Listcat**=Listcat;  
 **this**.**mapchild**=mapchild;  
 }  
 @Override  
 **public int** getGroupCount() {  
 **return Listcat**.size();  
 }  
  
 @Override  
 **public int** getChildrenCount(**int** groupPosition) {  
 **return mapchild**.get(**Listcat**.get(groupPosition)).size();  
 }  
  
 @Override  
 **public** Object getGroup(**int** groupPosition) {  
 **return Listcat**.get(groupPosition);  
 }  
  
 @Override  
 **public** Object getChild(**int** groupPosition, **int** childPosition) {  
 **return mapchild**.get(**Listcat**.get(groupPosition)).get(childPosition);  
 }  
  
 @Override  
 **public long** getGroupId(**int** groupPosition) {  
 **return** 0;  
 }  
  
 @Override  
 **public long** getChildId(**int** groupPosition, **int** childPosition) {  
 **return** 0;  
 }  
  
 @Override  
 **public boolean** hasStableIds() {  
 **return false**;  
 }  
  
 @Override  
 **public** View getGroupView(**int** groupPosition, **boolean** isExpanded, View convertView, ViewGroup parent) {  
 String Titlecat=(String)getGroup(groupPosition);  
 convertView= LayoutInflater.*from*(**context**).inflate(R.layout.***elv\_group***,**null**);  
 TextView tvgroup=(TextView)convertView.findViewById(R.id.***tvgroup***);  
 tvgroup.setText(Titlecat);  
 **return** convertView;  
 }  
  
 @Override  
 **public** View getChildView(**int** groupPosition, **int** childPosition, **boolean** isLastChild, View convertView, ViewGroup parent) {  
 String item=(String) getChild(groupPosition, childPosition);  
 convertView= LayoutInflater.*from*(**context**).inflate(R.layout.***elv\_child***,**null**);  
 TextView tvchild=(TextView)convertView.findViewById(R.id.***tvchild***);  
 tvchild.setText(item);  
 **return** convertView;  
 }  
  
 @Override  
 **public boolean** isChildSelectable(**int** groupPosition, **int** childPosition) {  
 **return false**;  
 }  
}