# Design Patterns

MSc in Computer Science

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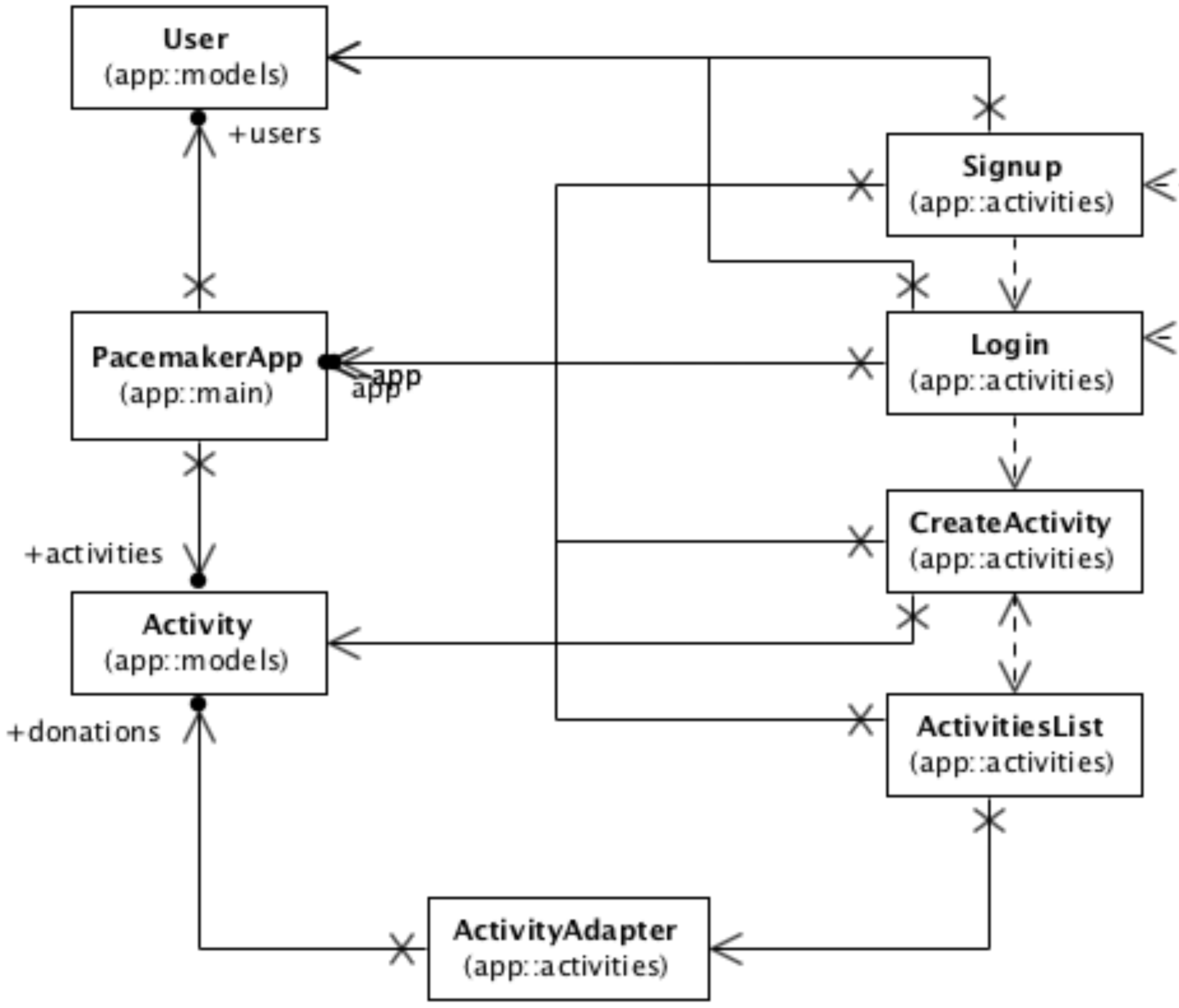
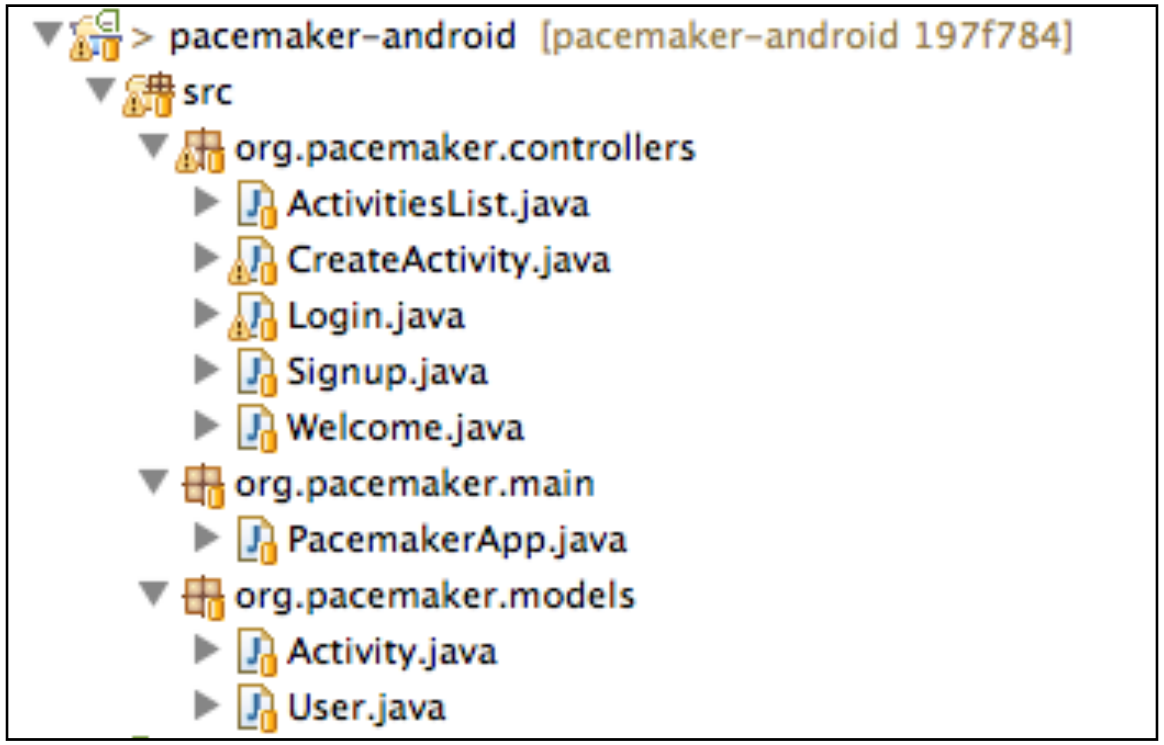
eLearning support unit

# Pacemaker V4

# Pacemaker V4 (end of Lab06a)

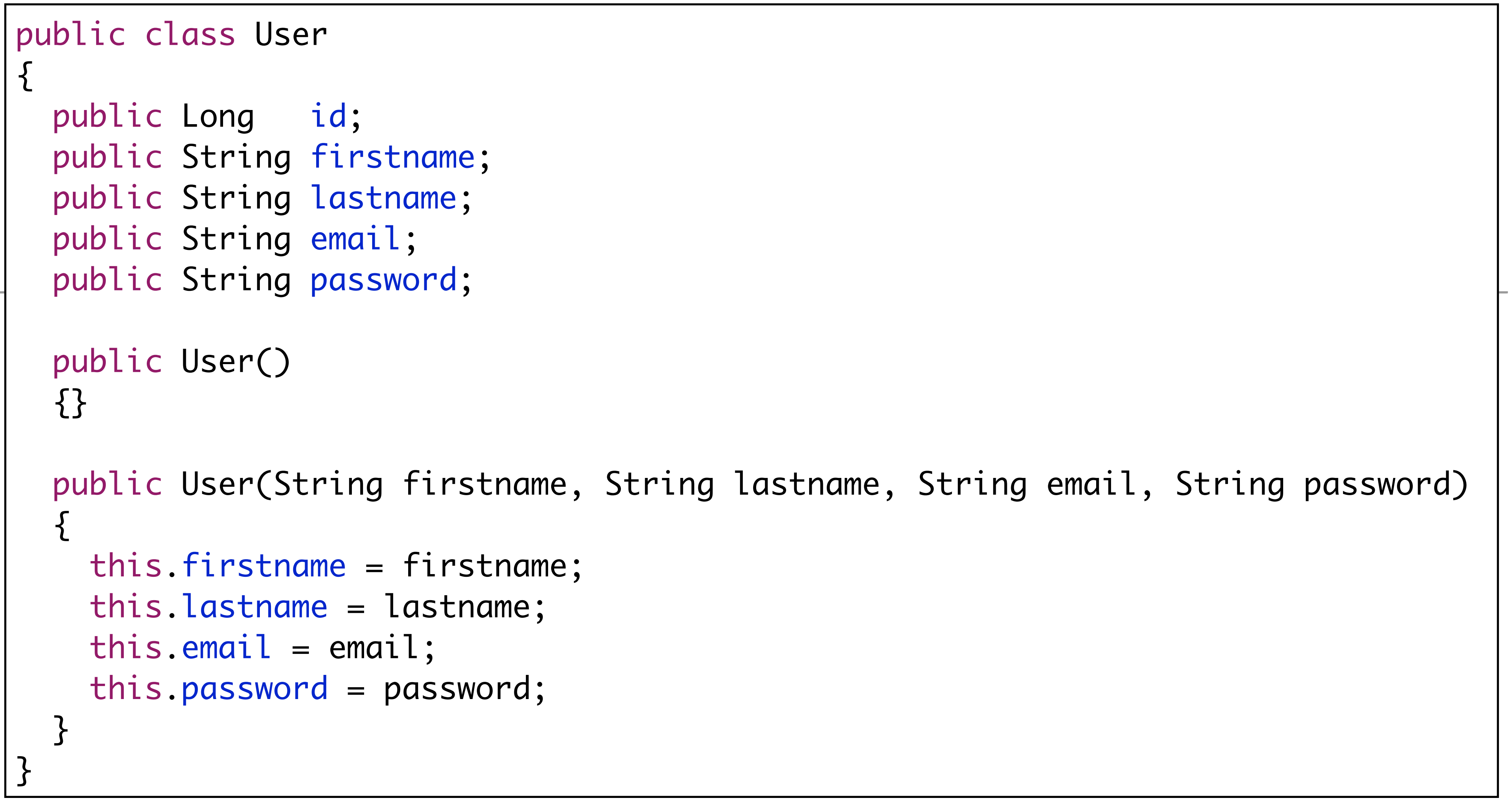
- Standalone version (no service access)



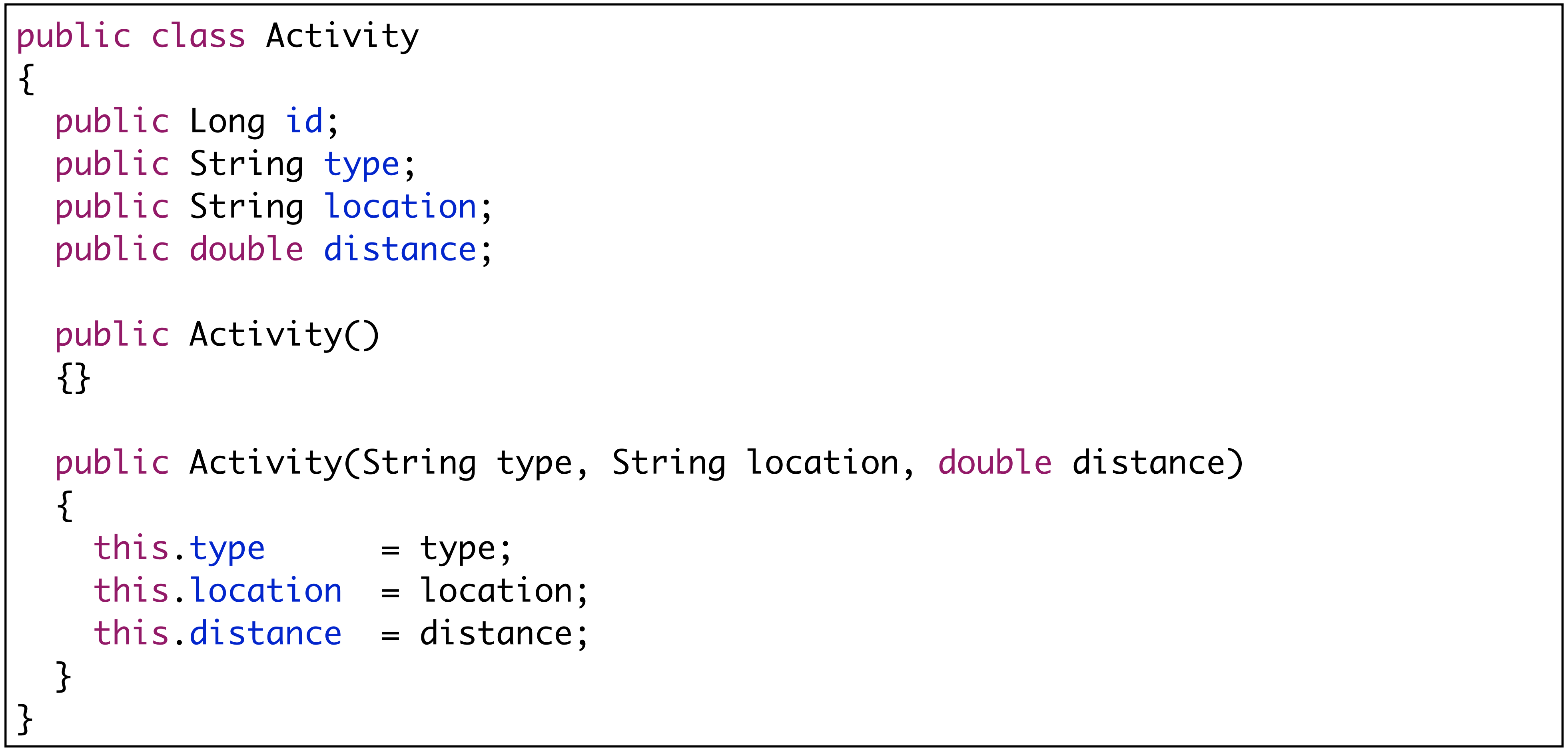


```
▼ > pacemaker-android [pacemaker-android 197f784]
  ▼ src
    ▼ org.pacemaker.controllers
      ▶ ActivitiesList.java
      ▶ CreateActivity.java
      ▶ Login.java
      ▶ Signup.java
      ▶ Welcome.java
    ▼ org.pacemaker.main
      ▶ PacemakerApp.java
    ▼ org.pacemaker.models
      ▶ Activity.java
      ▶ User.java
```

# Model

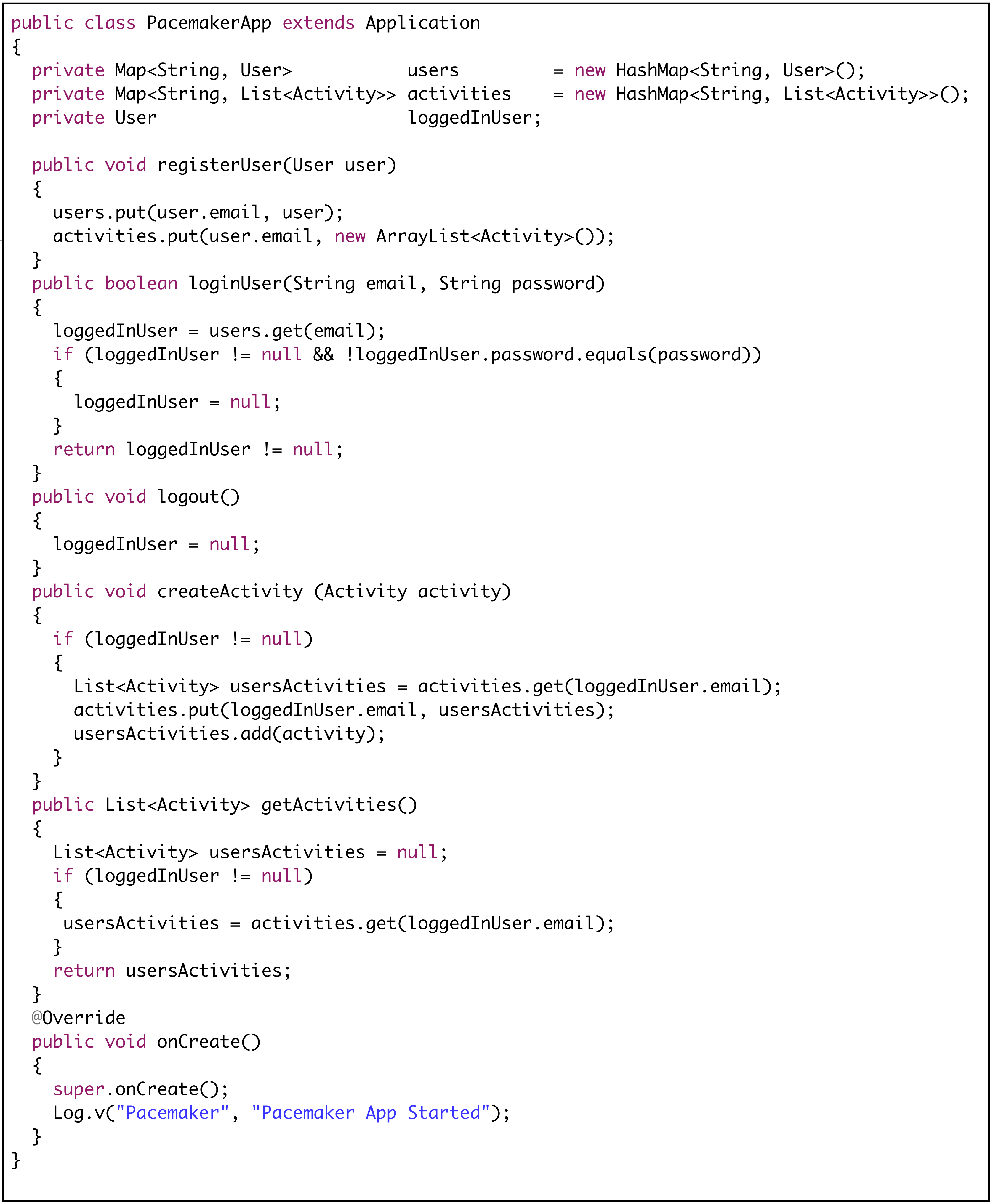


```
public class User
{
  public Long   id;
  public String firstname;
  public String lastname;
  public String email;
  public String password;

  public User()
  {}

  public User(String firstname, String lastname, String email, String password)
  {
    this.firstname = firstname;
    this.lastname = lastname;
    this.email = email;
    this.password = password;
  }
}
```

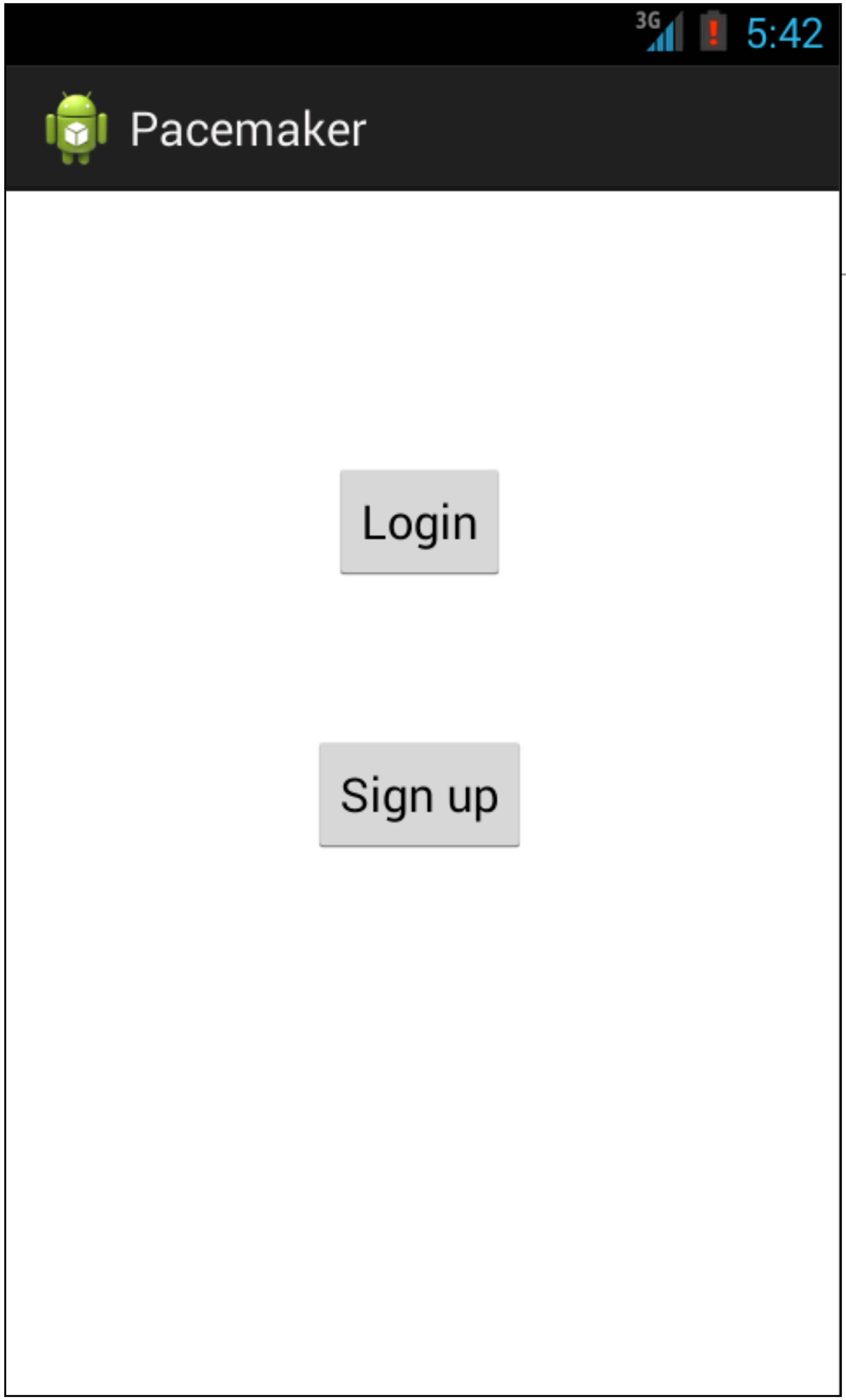


```
public class Activity
{
  public Long id;
  public String type;
  public String location;
  public double distance;

  public Activity()
  {}

  public Activity(String type, String location, double distance)
  {
    this.type      = type;
    this.location  = location;
    this.distance  = distance;
  }
}
```

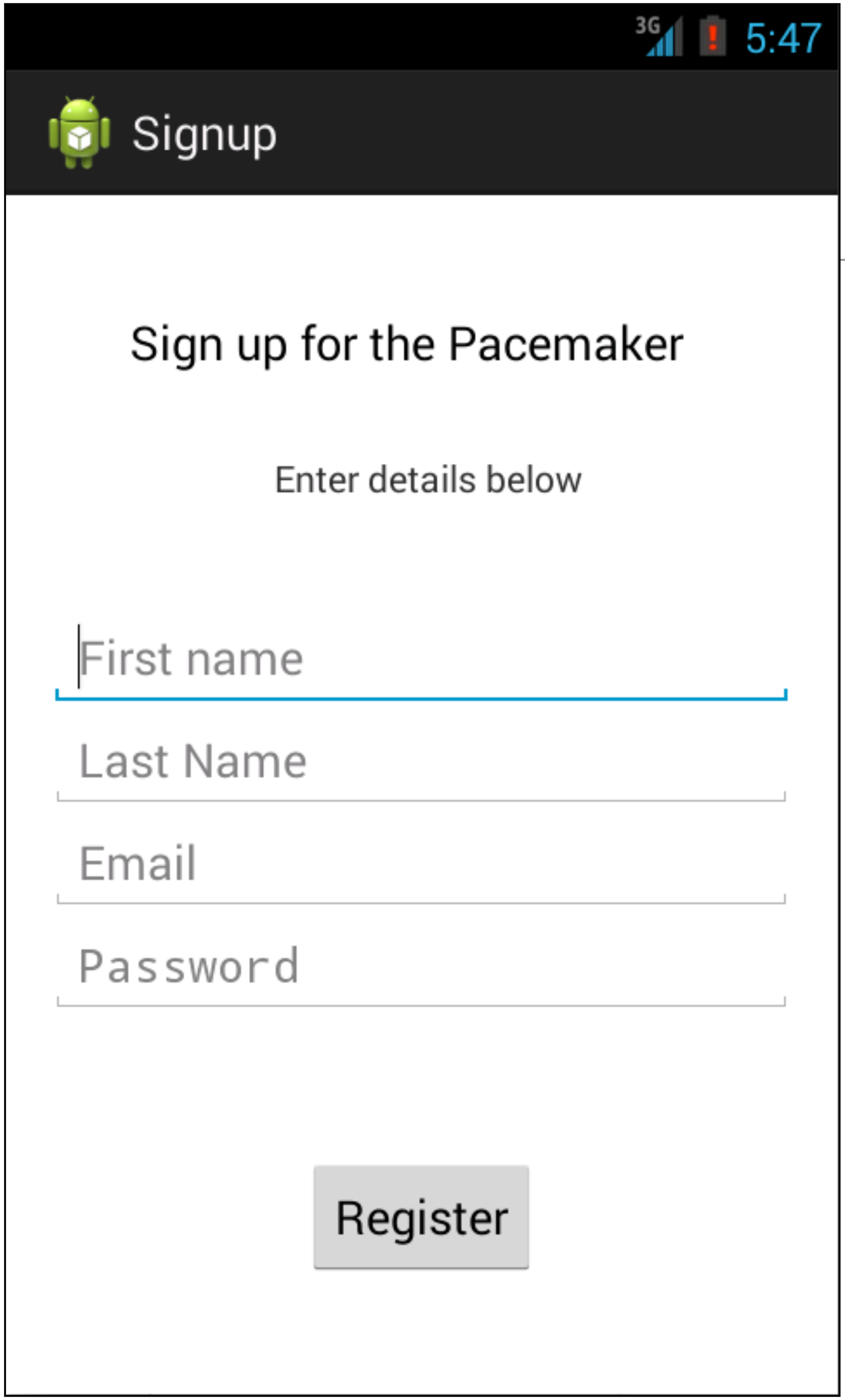
# App

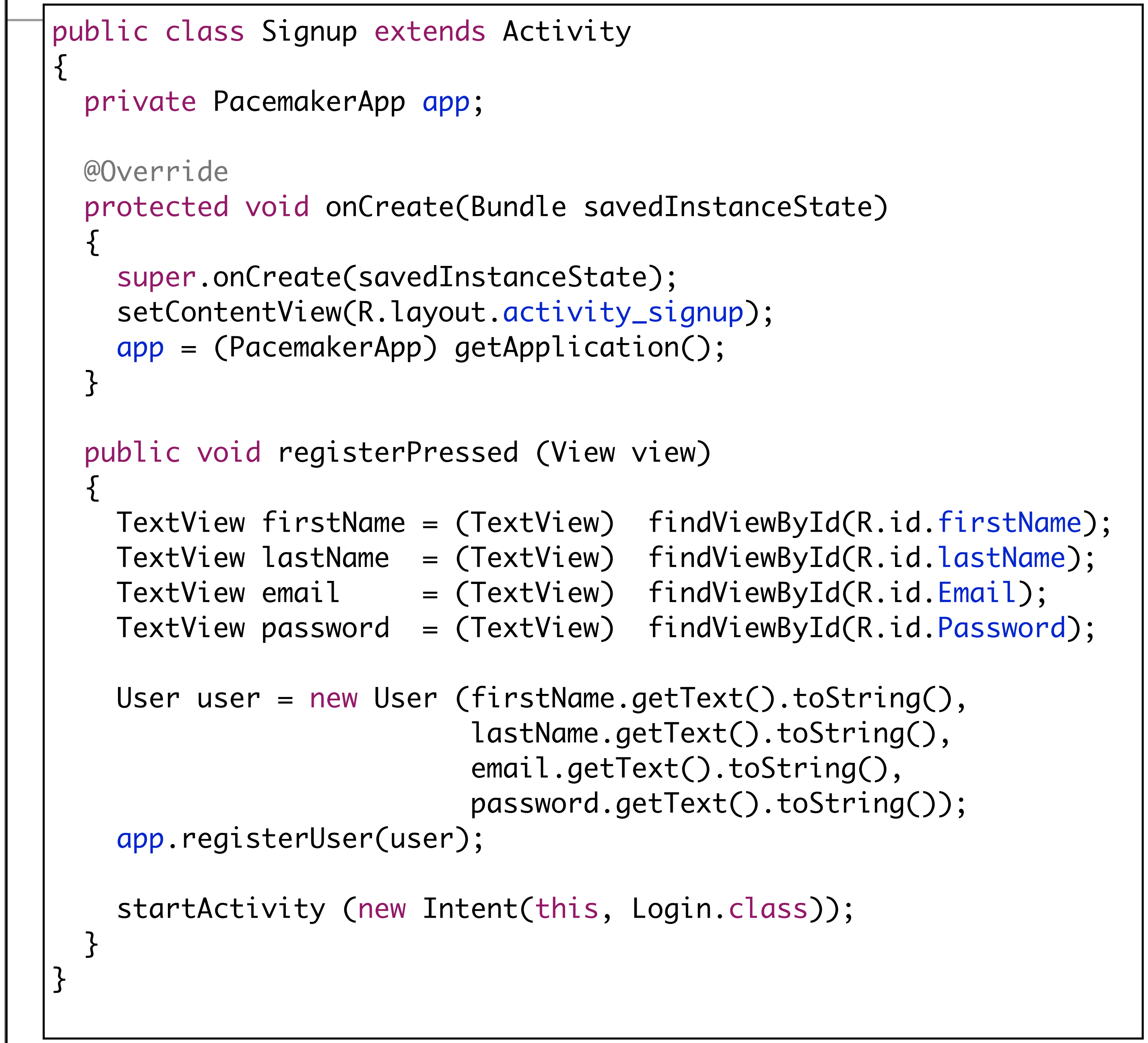


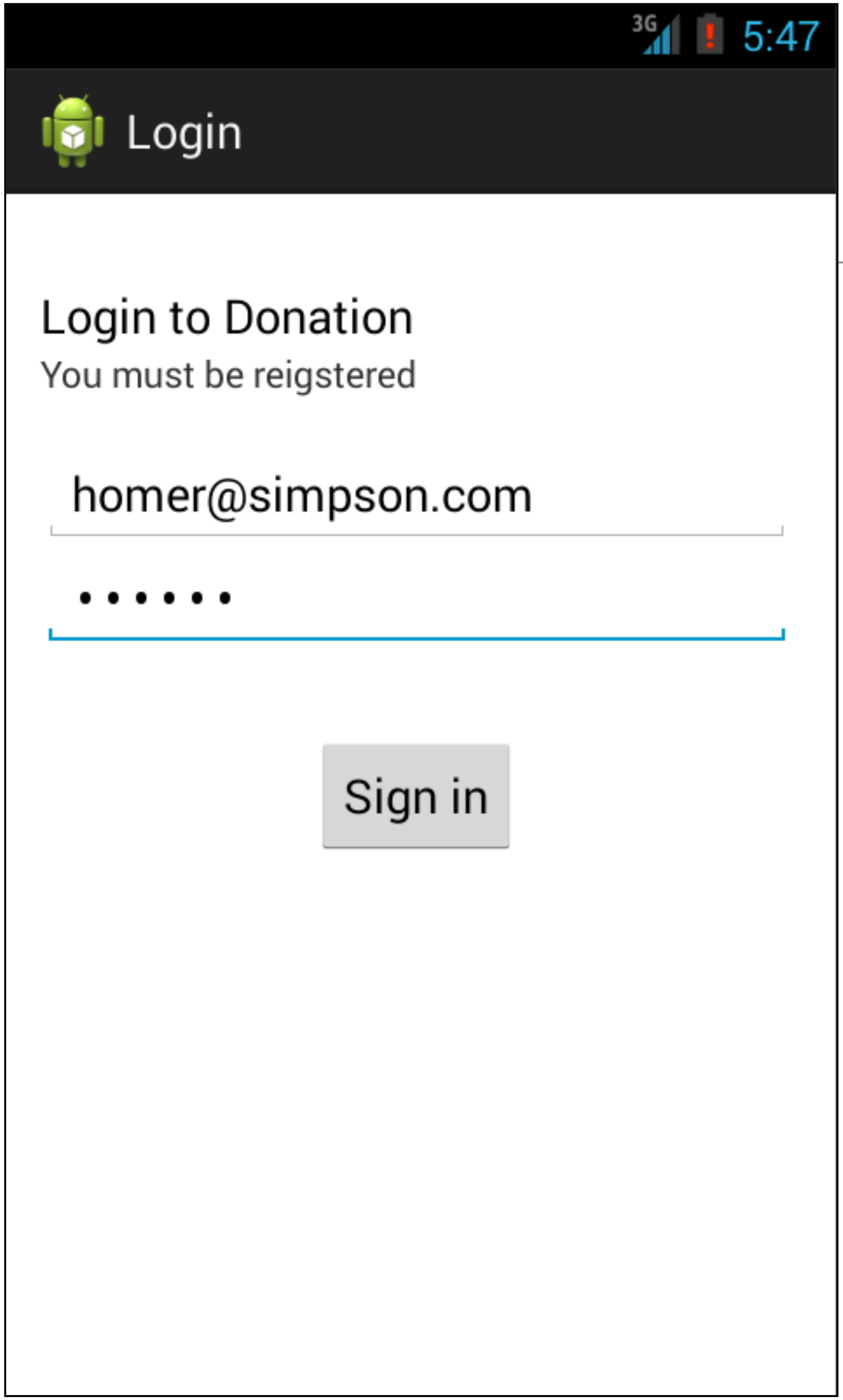
```java
public class PacemakerApp extends Application
{
  private Map<String, User>           users         = new HashMap<String, User>();
  private Map<String, List<Activity>> activities    = new HashMap<String, List<Activity>>();
  private User                        loggedInUser;

  public void registerUser(User user)
  {
    users.put(user.email, user);
    activities.put(user.email, new ArrayList<Activity>());
  }
  public boolean loginUser(String email, String password)
  {
    loggedInUser = users.get(email);
    if (loggedInUser != null && !loggedInUser.password.equals(password))
    {
      loggedInUser = null;
    }
    return loggedInUser != null;
  }
  public void logout()
  {
    loggedInUser = null;
  }
  public void createActivity (Activity activity)
  {
    if (loggedInUser != null)
    {
      List<Activity> usersActivities = activities.get(loggedInUser.email);
      activities.put(loggedInUser.email, usersActivities);
      usersActivities.add(activity);
    }
  }
  public List<Activity> getActivities()
  {
    List<Activity> usersActivities = null;
    if (loggedInUser != null)
    {
     usersActivities = activities.get(loggedInUser.email);
    }
    return usersActivities;
  }
  @Override
  public void onCreate()
  {
    super.onCreate();
    Log.v("Pacemaker", "Pacemaker App Started");
  }
}
```



```
public class Welcome extends Activity
{
  PacemakerApp app;

  @Override
  public void onCreate(Bundle savedInstanceState)
  {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_welcome);
    app = (PacemakerApp) getApplication();
  }

  public void loginPressed (View view)
  {
    startActivity (new Intent(this, Login.class));
  }

  public void signupPressed (View view)
  {
    startActivity (new Intent(this, Signup.class));
  }
}
```




```java
public class Signup extends Activity
{
  private PacemakerApp app;

  @Override
  protected void onCreate(Bundle savedInstanceState)
  {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_signup);
    app = (PacemakerApp) getApplication();
  }

  public void registerPressed (View view)
  {
    TextView firstName = (TextView)  findViewById(R.id.firstName);
    TextView lastName  = (TextView)  findViewById(R.id.lastName);
    TextView email     = (TextView)  findViewById(R.id.Email);
    TextView password  = (TextView)  findViewById(R.id.Password);

    User user = new User (firstName.getText().toString(),
                          lastName.getText().toString(),
                          email.getText().toString(),
                          password.getText().toString());
    app.registerUser(user);

    startActivity (new Intent(this, Login.class));
  }
}
```



Login to Donation

You must be reigstered

homer@simpson.com

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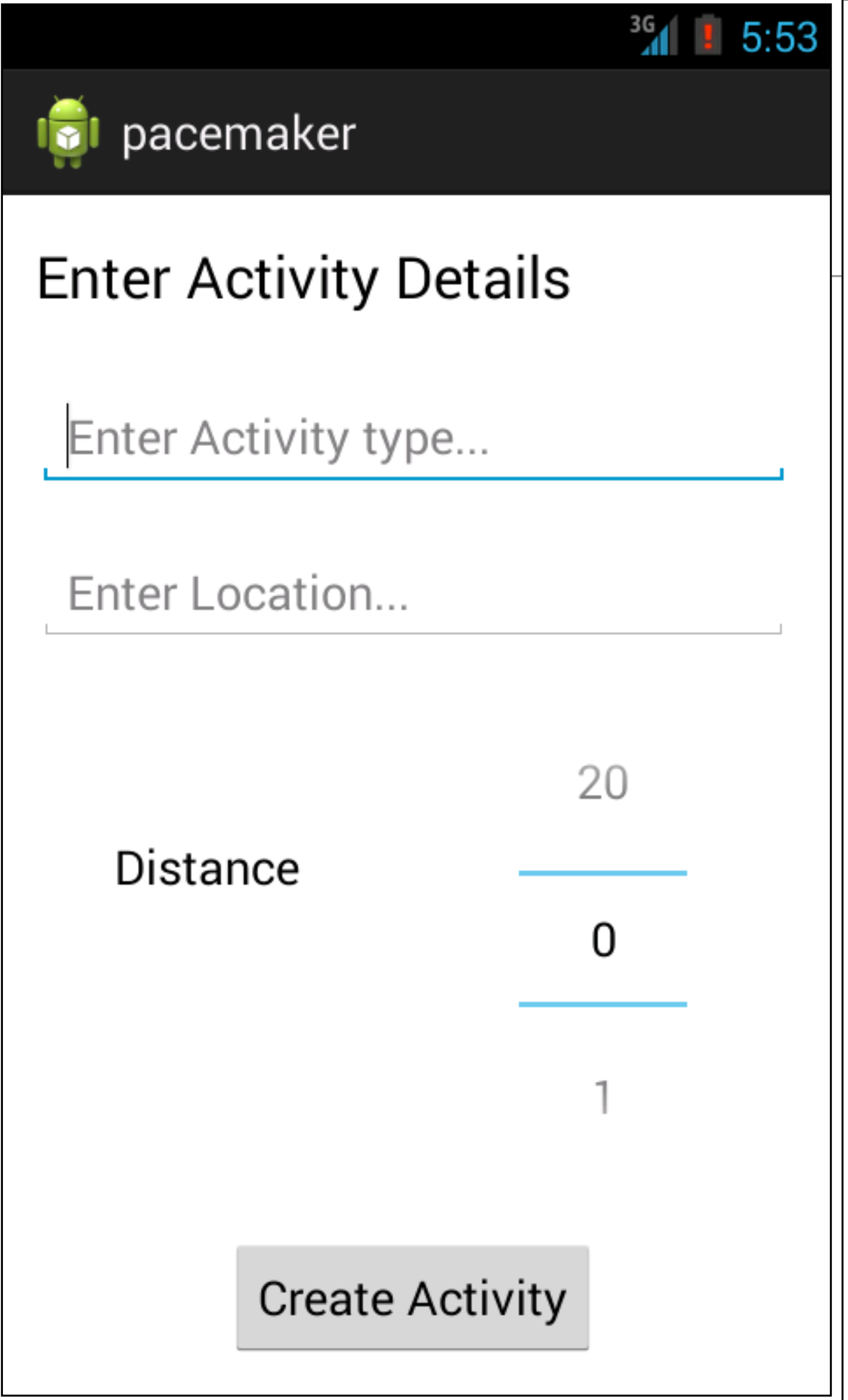
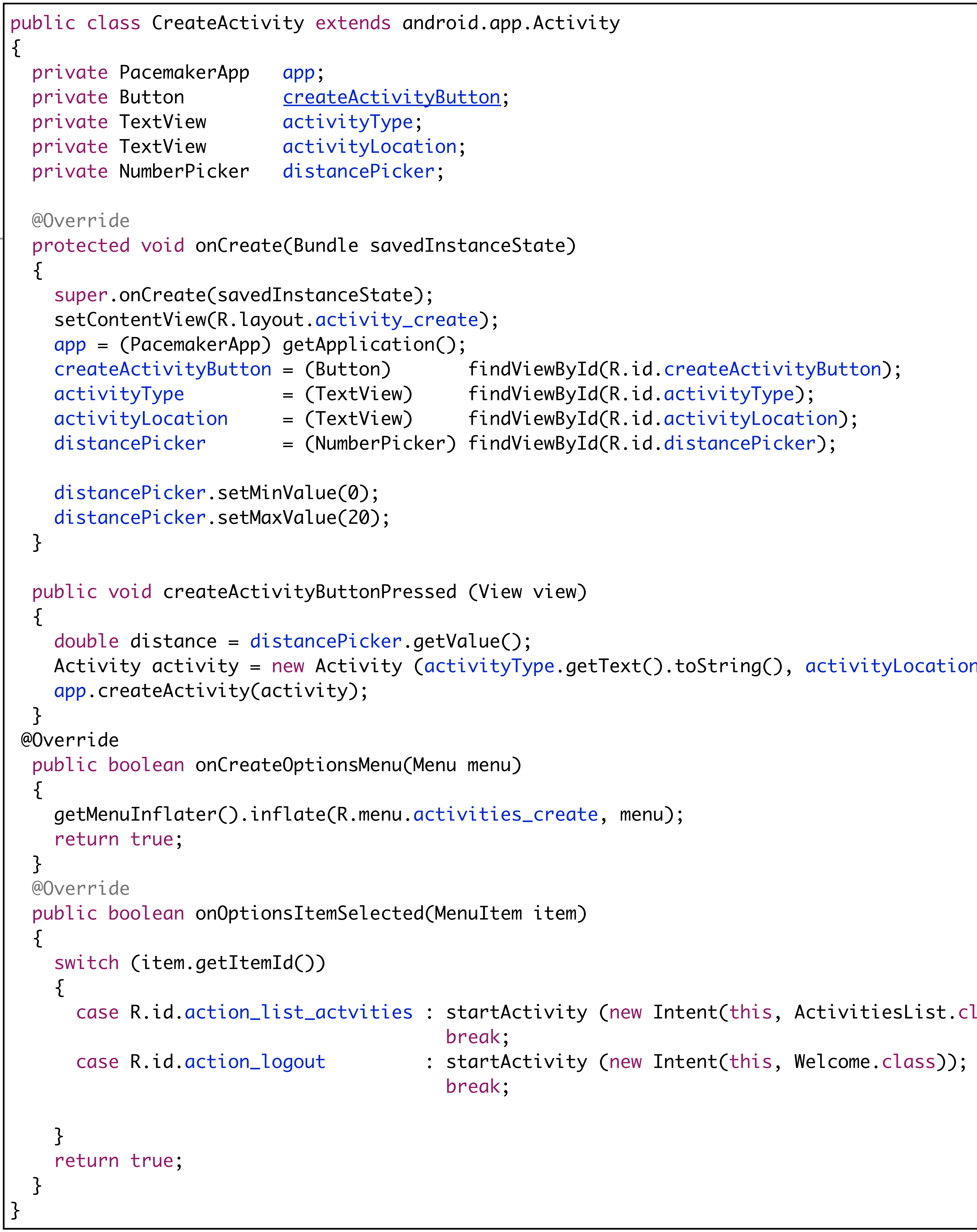
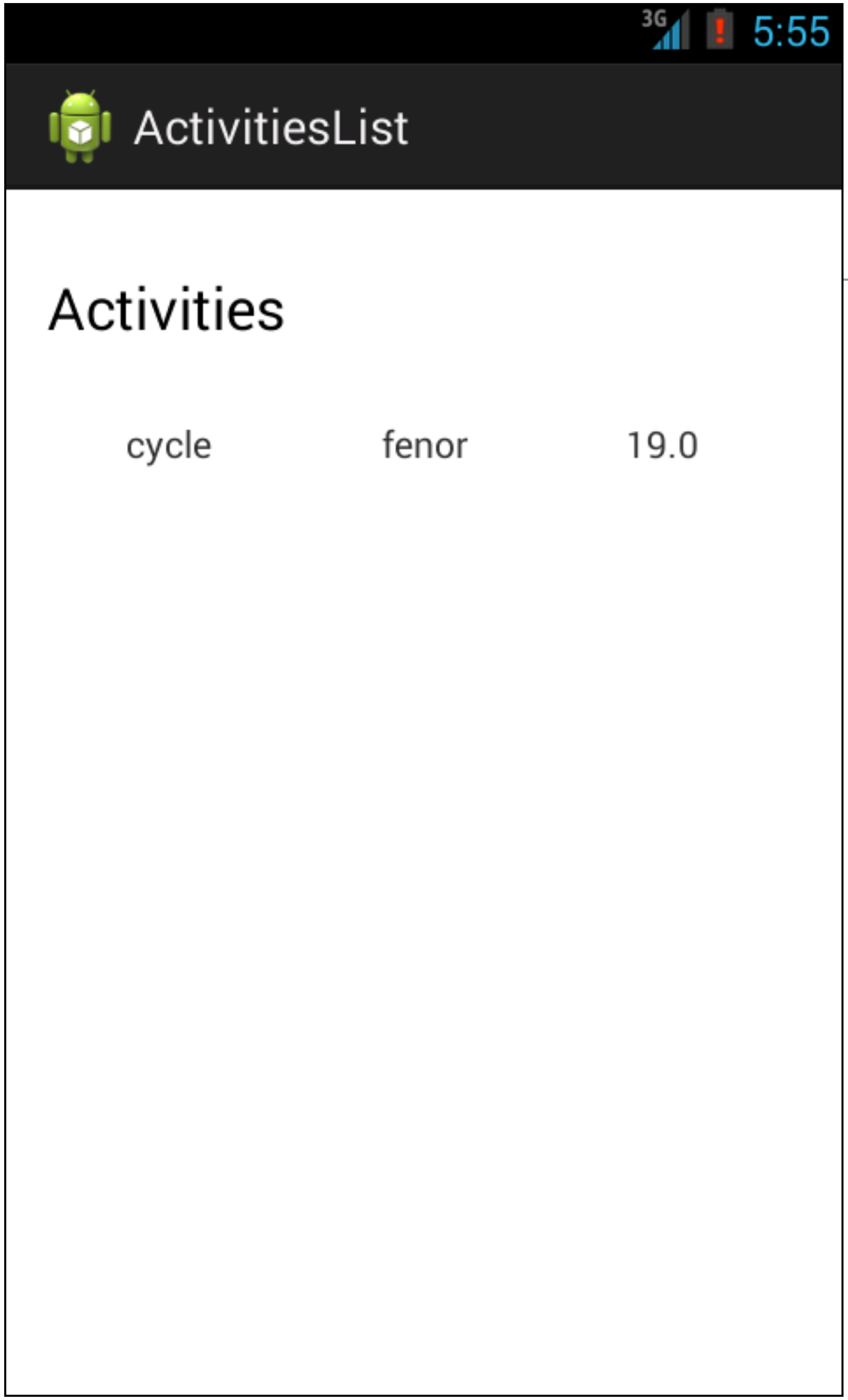
```java
public class Login extends Activity
{
  PacemakerApp app;

  @Override
  protected void onCreate(Bundle savedInstanceState)
  {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_login);
  }

  public void signinPressed (View view)
  {
    app = (PacemakerApp) getApplication();

    TextView email     = (TextView)  findViewById(R.id.loginEmail);
    TextView password  = (TextView)  findViewById(R.id.loginPassword);

    boolean loggedIn = app.loginUser(email.getText().toString(),
                                     password.getText().toString());
    if (loggedIn)
    {
      startActivity (new Intent(this, CreateActivity.class));
    }
    else
    {
      Toast toast = Toast.makeText(this, "Invalid Credentials",
                                              Toast.LENGTH_SHORT);
      toast.show();
    }
  }
}
```





```
public class CreateActivity extends android.app.Activity
{
  private PacemakerApp   app;
  private Button         createActivityButton;
  private TextView       activityType;
  private TextView       activityLocation;
  private NumberPicker   distancePicker;

  @Override
  protected void onCreate(Bundle savedInstanceState)
  {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_create);
    app = (PacemakerApp) getApplication();
    createActivityButton = (Button)       findViewById(R.id.createActivityButton);
    activityType         = (TextView)     findViewById(R.id.activityType);
    activityLocation     = (TextView)     findViewById(R.id.activityLocation);
    distancePicker       = (NumberPicker) findViewById(R.id.distancePicker);

    distancePicker.setMinValue(0);
    distancePicker.setMaxValue(20);
  }

  public void createActivityButtonPressed (View view)
  {
    double distance = distancePicker.getValue();
    Activity activity = new Activity (activityType.getText().toString(), activityLocation
    app.createActivity(activity);
  }
 @Override
  public boolean onCreateOptionsMenu(Menu menu)
  {
    getMenuInflater().inflate(R.menu.activities_create, menu);
    return true;
  }
  @Override
  public boolean onOptionsItemSelected(MenuItem item)
  {
    switch (item.getItemId())
    {
      case R.id.action_list_actvities : startActivity (new Intent(this, ActivitiesList.cl
                                        break;
      case R.id.action_logout         : startActivity (new Intent(this, Welcome.class));
                                        break;

    }
    return true;
  }
}
```



5:55

ActivitiesList

Activities

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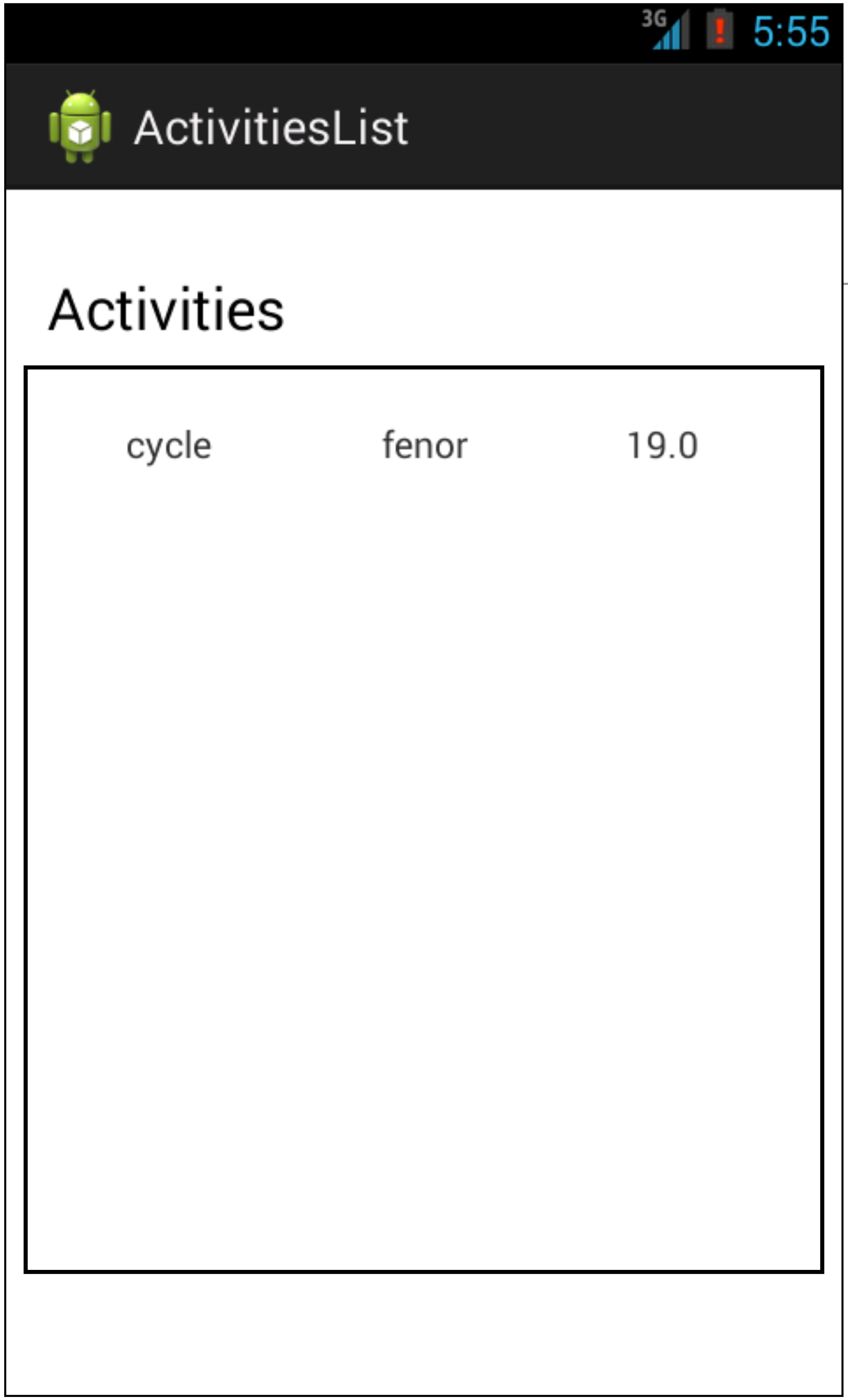
```
public class ActivitiesList extends  android.app.Activity
{
  private PacemakerApp app;
  private ListView     activitiesListView;

  @Override
  protected void onCreate(Bundle savedInstanceState)
  {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activities_list);

    app = (PacemakerApp) getApplication();

    activitiesListView = (ListView) findViewById(R.id.activitiesListView);

    List<Activity> activities  = app.getActivities();

    ActivityAdapter activitiesAdapter = new ActivityAdapter(this,  activities);
    activitiesListView.setAdapter(activitiesAdapter);
    activitiesAdapter.notifyDataSetChanged();
  }

  @Override
  public boolean onCreateOptionsMenu(Menu menu)
  {
    getMenuInflater().inflate(R.menu.activities_list, menu);
    return true;
  }

  @Override
  public boolean onOptionsItemSelected(MenuItem item)
  {
    switch (item.getItemId())
    {
      case R.id.action_create_actvities : startActivity (new Intent(this, CreateActivity.c
                                          break;
      case R.id.action_logout           : startActivity (new Intent(this, Welcome.class));
                                          break;
    }
    return true;
  }
}
```



ActivitiesList

Activities

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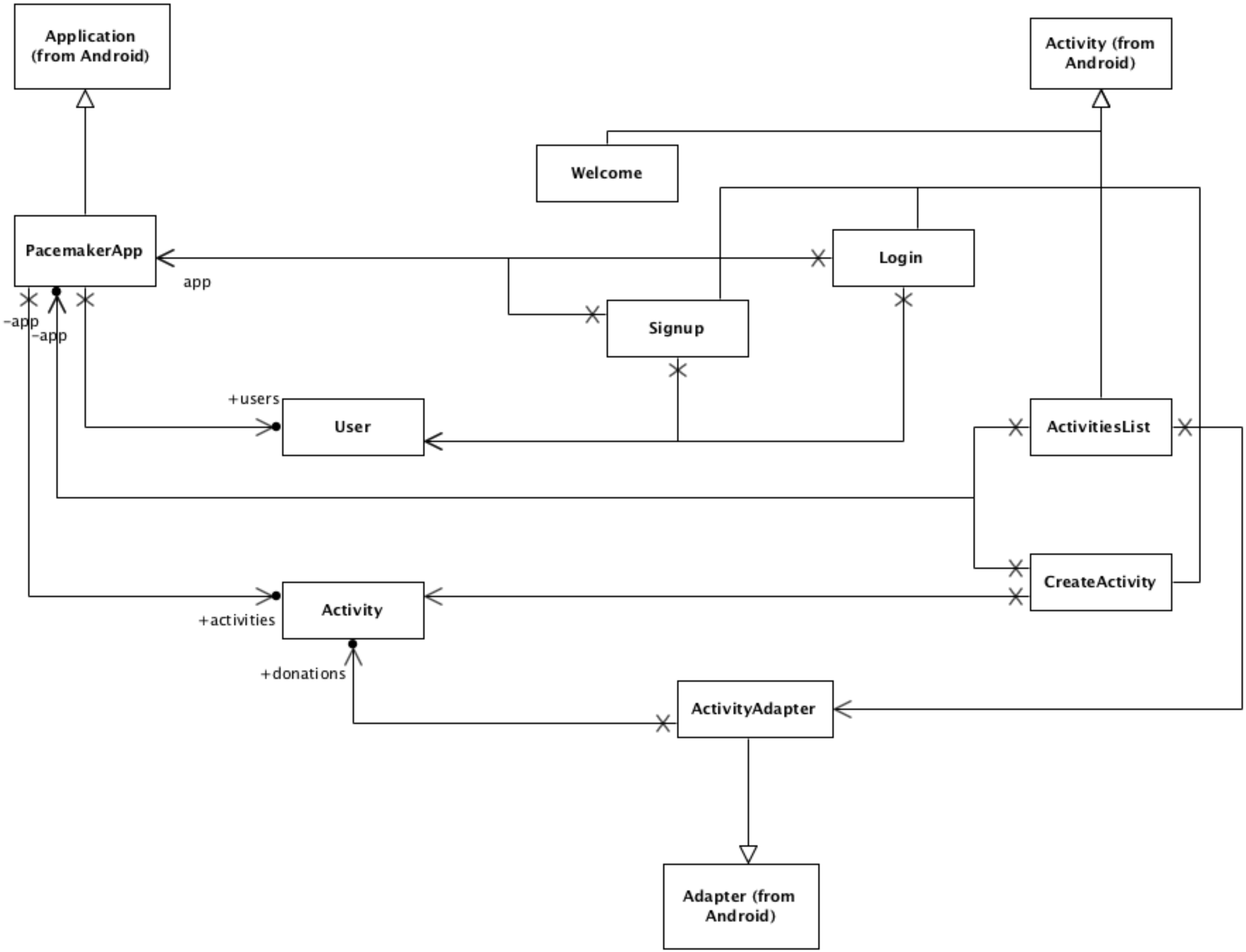
```
class ActivityAdapter extends ArrayAdapter<Activity>
{
  private Context        context;
  public  List<Activity> activities;

  public ActivityAdapter(Context context, List<Activity> activities)
  {
    super(context, R.layout.activity_row_layout, activities);
    this.context    = context;
    this.activities = activities;
  }

  @Override
  public View getView(int position, View convertView, ViewGroup parent)
  {
    LayoutInflater inflater = (LayoutInflater) context.getSystemService(Context.LAYOUT_INF

    View     view      = inflater.inflate(R.layout.activity_row_layout, parent, false);
    Activity activity  = activities.get(position);
    TextView type      = (TextView) view.findViewById(R.id.type);
    TextView location  = (TextView) view.findViewById(R.id.location);
    TextView distance  = (TextView) view.findViewById(R.id.distance);

    type.setText(activity.type);
    location.setText(activity.location);
    distance.setText("" + activity.distance);
    return view;
  }

  @Override
  public int getCount()
  {
    return activities.size();
  }
}
```


Application (from Android)
Activity (from Android)
Welcome
PacemakerApp
app
Login
Signup
-app
-app
+users
User
ActivitiesList
CreateActivity
Activity
+activities
+donations
ActivityAdapter
Adapter (from Android)

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