

ICP10

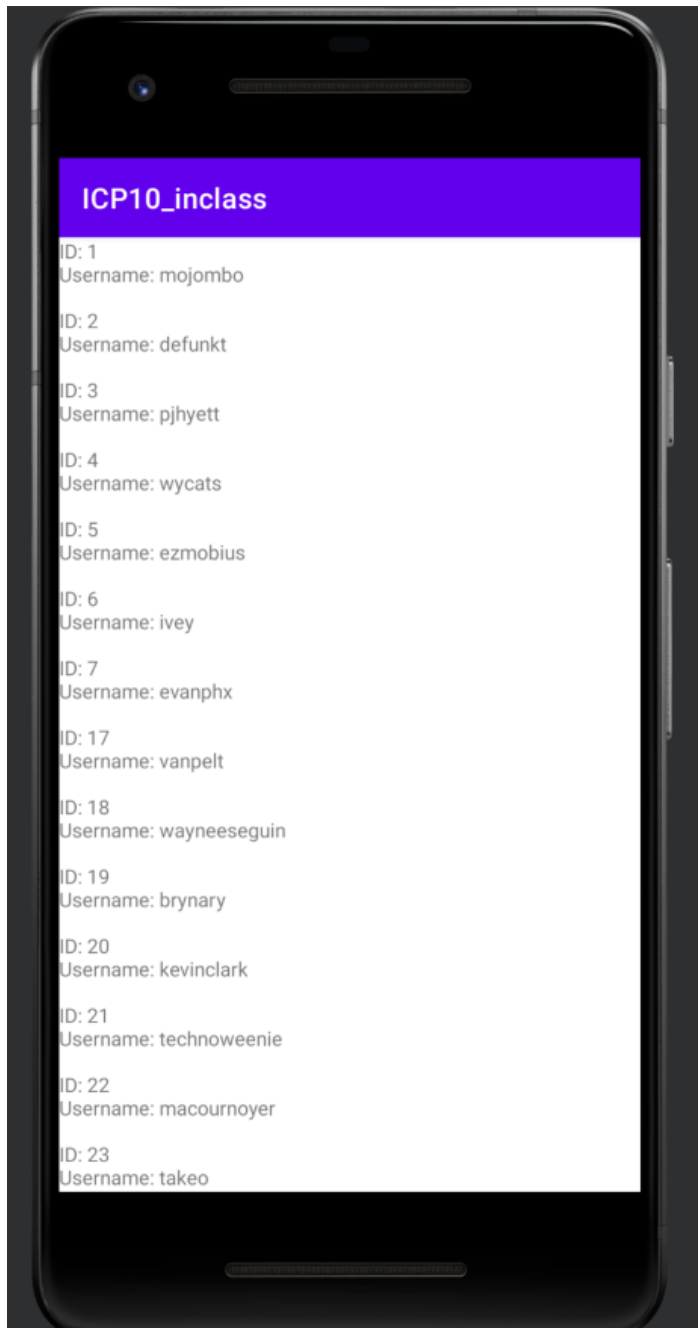
Keenan Flynn – kpfxn8@umsystem.edu – <https://github.com/kfly2fly/Web-Mobile-Spring-2022>
Jasmine Naraine- jnytc@umstyem.edu -<https://github.com/JNaraine/490-Mobile>

In this ICP, we followed along in class to create a simple app that pulled data from the GitHub API. This app pulls GitHub user information from the API and displays it to our end user. The GitHub information was retrieved using a Restful API. The Restful API uses HTTP requests to get information from the internet.

To get this information from the internet, we had to first enable internet connections in our Android App. We built an ApiCollection interface that stores our GET request in the form of a getData() method. The Retrofit library was then used to turn this HTTP API into a valid Java interface by using a JSON converter. The JSON object acts as a data structure where specific pieces of information can be looked up through keys. We specify the keys that we want to show the user in a User class. This class will allow us to create a list of objects that store only the information we want.

When we successfully receive data from GitHub, the data is stored in a list of User objects. This list is then parsed and formatted. The formatted data is then appended to the view so that the user will see the information. For example, the user UserName and their ID. Because the data is long, we need to make sure the Android app can scroll so we add a NestedScrollView around the TextView. On failure, the app will make a Toast text that says the Data load has failed. If we did not have this failure method, the app would freeze and we would not be able to understand why.

User view



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">

    <androidx.core.widget.NestedScrollView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        tools:ignore="MissingConstraints">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:id="@+id/textView"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintLeft_toLeftOf="parent"
            app:layout_constraintRight_toRightOf="parent"
            app:layout_constraintTop_toTopOf="parent" />

    </androidx.core.widget.NestedScrollView>

</androidx.constraintlayout.widget.ConstraintLayout>
```

User.java

```
package com.example.icp10_inclass;

import com.google.gson.annotations.SerializedName;

public class user {

    private int id;

    @SerializedName("login")
    private String username;

    public int getId() {
        return id;
    }

    public String getUsername() {
        return username;
    }

}
```

ApiCollections.java

```
package com.example.icp10_inclass;

import java.util.List;

import retrofit2.Call;
import retrofit2.http.GET;

public interface ApiCollections {

    @GET("users")
    Call<List<user>> getData();

}
```

MainActivity.java (pt 1)

```

package com.example.icp10_inclass;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.TextView;
import android.widget.Toast;

import java.util.List;

import retrofit2.Call;
import retrofit2.Callback;
import retrofit2.Response;
import retrofit2.Retrofit;
import retrofit2.converter.gson.GsonConverterFactory;

public class MainActivity extends AppCompatActivity {

    TextView textView;

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

        textView = findViewById(R.id.textview);

        Retrofit retrofit = new Retrofit.Builder()
            .baseUrl("https://api.github.com/")
            .addConverterFactory(GsonConverterFactory.create())
            .build();

        ApiCollections apiCollections = retrofit.create(ApiCollections.class);

        Call<List<user>> usersCall = apiCollections.getData();
    }
}

```

MainActivity.java (pt 2)

```
usersCall.enqueue(new Callback<List<user>>() {  
    @Override  
    public void onResponse(Call<List<user>> call, Response<List<user>> response) {  
        if (response.isSuccessful()) {  
            List<user> users = response.body();  
            for (user user: users) {  
                String data = "";  
                data += "ID: " + user.getId() + "\n";  
                data += "Username: " + user.getUsername() + "\n\n";  
  
                textView.append(data);  
            }  
        }  
    }  
});  
  
@Override  
public void onFailure(Call<List<user>> call, Throwable t) {  
    Toast.makeText(context, MainActivity.this, text: "Data Failed", Toast.LENGTH_SHORT);  
}  
});  
}
```