# ANDROID STUDIO- JAVA

In android studio

Help -> Keymap reference – download it and reference

# Log

1. Import Log

import android.util.Log;

1. Declare a variable for string

private static final String *TAG* = "MY STRING";

1. Display message

Log.*i*(*TAG*, "onCreate");

Complete code

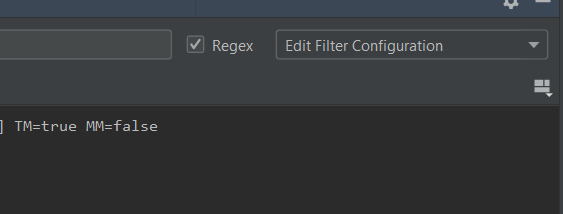
package com.example.a1helloworld;  
  
import androidx.appcompat.app.AppCompatActivity;  
import android.util.Log;  
  
import android.os.Bundle;  
  
public class MainActivity extends AppCompatActivity {  
  
 private static final String *TAG* = "MY STRING";  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 Log.*i*(*TAG*, "onCreate");  
 }  
}

# Life Cycle

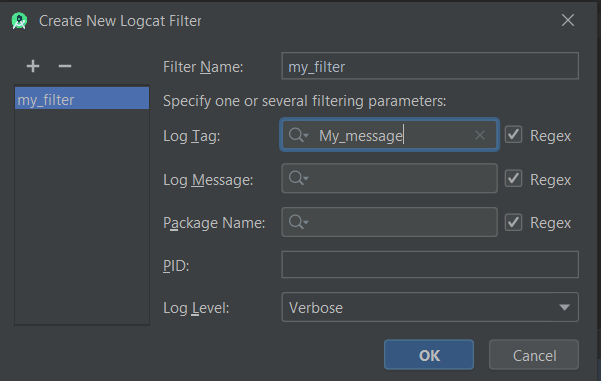
1. In AppCompatActivity -> Cntrl + O
2. Search onStart method

package com.example.a1helloworld;  
  
import androidx.appcompat.app.AppCompatActivity;  
import android.util.Log;  
  
import android.os.Bundle;  
  
public class MainActivity extends AppCompatActivity {  
  
 private static final String *TAG* = " My\_message";  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 Log.*i*(*TAG*, "onCreate");  
 }  
  
 @Override  
 protected void onStart() {  
 super.onStart();  
 Log.*i*(*TAG*, "onStart");  
 }  
  
 @Override  
 protected void onResume() {  
 super.onResume();  
  
 Log.*i*(*TAG*, "onResume");  
 }  
  
 @Override  
 protected void onPause() {  
 super.onPause();  
 Log.*i*(*TAG*, "onPause");  
 }  
  
 @Override  
 protected void onStop() {  
 super.onStop();  
 Log.*i*(*TAG*, "onStop");  
 }  
  
 @Override  
 protected void onRestart() {  
 super.onRestart();  
 Log.*i*(*TAG*, "onRestart");  
 }  
}

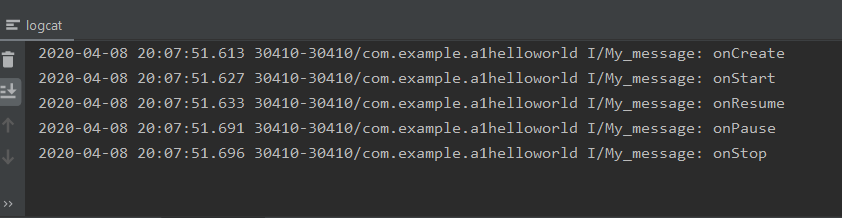
1. click logcat in bottom left corner of android studio
2. choose edit filter in options tag



1. create a filter



Output

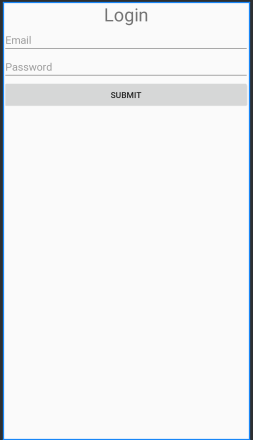


# Simple APP

<https://www.youtube.com/watch?v=Kpyf6s-vPxg&list=PLknSwrodgQ72X4sKpzf5vT8kY80HKcUSe&index=12>

## Create Login page UI

<?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"  
 android:orientation="vertical"  
 tools:context=".MainActivity">  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Login"  
 android:textAlignment="center"  
 android:textSize="30sp" />  
  
 <EditText  
 android:id="@+id/editTextEmail"  
 android:layout\_below="@+id/textView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:ems="10"  
 android:hint="Email"  
 android:inputType="textEmailAddress" />  
 <EditText  
 android:id="@+id/editTextPass"  
 android:layout\_below="@+id/editTextEmail"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:ems="10"  
 android:hint="Password"  
 android:inputType="numberPassword" />  
 <Button  
 android:id="@+id/submitBtn"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Submit"  
 android:layout\_below="@+id/editTextPass"  
 />  
</RelativeLayout>



# Create UI using java

<https://www.youtube.com/watch?v=Z8hiM9LEANU&list=PLknSwrodgQ72X4sKpzf5vT8kY80HKcUSe&index=13>

1. import

import android.app.Activity;  
  
import android.os.Bundle;  
import android.widget.RelativeLayout;  
import android.widget.Button;

1. initialize object

public class MainActivity extends Activity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
   
 RelativeLayout myRelLayout = new RelativeLayout(this);  
 Button myBtn = new Button(this);  
 }  
}

complete code

package com.example.a2ui;  
  
import android.app.Activity;  
  
import android.os.Bundle;  
import android.widget.RelativeLayout;  
import android.widget.Button;  
  
public class MainActivity extends Activity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
  
  
 RelativeLayout myRelLayout = new RelativeLayout(this);  
 Button myBtn = new Button(this);  
 myRelLayout.addView(myBtn);  
 setContentView(myRelLayout);  
 }  
}

## Add properties to widget

<https://www.youtube.com/watch?v=9YCXCMzEMpo&list=PLknSwrodgQ72X4sKpzf5vT8kY80HKcUSe&index=14>

1. import color

complete code

package com.example.a2ui;  
  
import android.app.Activity;  
  
import android.os.Bundle;  
import android.widget.RelativeLayout;  
import android.widget.Button;  
import android.graphics.Color;  
  
public class MainActivity extends Activity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
  
  
 RelativeLayout myRelLayout = new RelativeLayout(this);  
 myRelLayout.setBackgroundColor(Color.*BLUE*);  
 Button myBtn = new Button(this);  
 myBtn.setBackgroundColor(Color.*GREEN*);  
 myBtn.setText("Click me");  
 myRelLayout.addView(myBtn);  
 setContentView(myRelLayout);  
 }  
}

1. add params

RelativeLayout.LayoutParams btnDetails = new RelativeLayout.LayoutParams(  
 RelativeLayout.LayoutParams.*WRAP\_CONTENT*,  
 RelativeLayout.LayoutParams.*WRAP\_CONTENT*);  
btnDetails.addRule(RelativeLayout.*CENTER\_HORIZONTAL*);  
btnDetails.addRule(RelativeLayout.*CENTER\_VERTICAL*);  
  
myRelLayout.addView(myBtn, btnDetails);

Complete code

package com.example.a2ui;  
  
import android.app.Activity;  
  
import android.os.Bundle;  
import android.widget.RelativeLayout;  
import android.widget.Button;  
import android.graphics.Color;  
  
public class MainActivity extends Activity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
  
  
 RelativeLayout myRelLayout = new RelativeLayout(this);  
 myRelLayout.setBackgroundColor(Color.*BLUE*);  
 Button myBtn = new Button(this);  
 myBtn.setBackgroundColor(Color.*GREEN*);  
 myBtn.setText("Click me");  
  
 setContentView(myRelLayout);  
  
 RelativeLayout.LayoutParams btnDetails = new RelativeLayout.LayoutParams(  
 RelativeLayout.LayoutParams.*WRAP\_CONTENT*,  
 RelativeLayout.LayoutParams.*WRAP\_CONTENT* );  
 btnDetails.addRule(RelativeLayout.*CENTER\_HORIZONTAL*);  
 btnDetails.addRule(RelativeLayout.*CENTER\_VERTICAL*);  
  
 myRelLayout.addView(myBtn, btnDetails);  
 }  
}

1. create edit text

package com.example.a2ui;  
  
import android.app.Activity;  
  
import android.os.Bundle;  
import android.widget.EditText;  
import android.widget.RelativeLayout;  
import android.widget.Button;  
import android.graphics.Color;  
import android.widget.EditText;  
  
public class MainActivity extends Activity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
  
  
 RelativeLayout myRelLayout = new RelativeLayout(this);  
 myRelLayout.setBackgroundColor(Color.*BLUE*);  
 Button myBtn = new Button(this);  
 myBtn.setBackgroundColor(Color.*GREEN*);  
 myBtn.setText("Click me");  
  
 setContentView(myRelLayout);  
  
 RelativeLayout.LayoutParams btnDetails = new RelativeLayout.LayoutParams(  
 RelativeLayout.LayoutParams.*WRAP\_CONTENT*,  
 RelativeLayout.LayoutParams.*WRAP\_CONTENT* );  
 btnDetails.addRule(RelativeLayout.*CENTER\_HORIZONTAL*);  
 btnDetails.addRule(RelativeLayout.*CENTER\_VERTICAL*);  
  
 myRelLayout.addView(myBtn, btnDetails);  
  
 EditText username = new EditText(this);  
  
 myBtn.setId(1);  
 username.setId(2);  
 RelativeLayout.LayoutParams usernameDetails = new RelativeLayout.LayoutParams(  
 RelativeLayout.LayoutParams.*WRAP\_CONTENT*,  
 RelativeLayout.LayoutParams.*WRAP\_CONTENT* );  
  
 usernameDetails.addRule(RelativeLayout.*ABOVE*, myBtn.getId());  
 usernameDetails.addRule(RelativeLayout.*CENTER\_HORIZONTAL*);  
 usernameDetails.setMargins(0,0,0,50);  
 myRelLayout.addView(username, usernameDetails);  
 }  
}

## DIP to pixels

<https://www.youtube.com/watch?v=Fw6pnAyQECE&list=PLknSwrodgQ72X4sKpzf5vT8kY80HKcUSe&index=16>

1. import

import android.content.res.Resources;  
import android.util.TypedValue;

1. calculate pixel

Resources r = getResources();  
int px = (int) TypedValue.*applyDimension*(TypedValue.*COMPLEX\_UNIT\_DIP*, 200, r.getDisplayMetrics());  
username.setWidth(px);

Complete code

package com.example.a2ui;  
  
import android.app.Activity;  
  
import android.os.Bundle;  
import android.widget.EditText;  
import android.widget.RelativeLayout;  
import android.widget.Button;  
import android.graphics.Color;  
import android.content.res.Resources;  
import android.util.TypedValue;  
  
public class MainActivity extends Activity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
  
  
 RelativeLayout myRelLayout = new RelativeLayout(this);  
 myRelLayout.setBackgroundColor(Color.*BLUE*);  
 Button myBtn = new Button(this);  
 myBtn.setBackgroundColor(Color.*GREEN*);  
 myBtn.setText("Click me");  
  
 setContentView(myRelLayout);  
  
 RelativeLayout.LayoutParams btnDetails = new RelativeLayout.LayoutParams(  
 RelativeLayout.LayoutParams.*WRAP\_CONTENT*,  
 RelativeLayout.LayoutParams.*WRAP\_CONTENT* );  
 btnDetails.addRule(RelativeLayout.*CENTER\_HORIZONTAL*);  
 btnDetails.addRule(RelativeLayout.*CENTER\_VERTICAL*);  
  
 myRelLayout.addView(myBtn, btnDetails);  
  
 EditText username = new EditText(this);  
  
 myBtn.setId(1);  
 username.setId(2);  
 RelativeLayout.LayoutParams usernameDetails = new RelativeLayout.LayoutParams(  
 RelativeLayout.LayoutParams.*WRAP\_CONTENT*,  
 RelativeLayout.LayoutParams.*WRAP\_CONTENT* );  
  
 Resources r = getResources();  
 int px = (int) TypedValue.*applyDimension*(TypedValue.*COMPLEX\_UNIT\_DIP*, 200, r.getDisplayMetrics());  
 username.setWidth(px);  
  
 usernameDetails.addRule(RelativeLayout.*ABOVE*, myBtn.getId());  
 usernameDetails.addRule(RelativeLayout.*CENTER\_HORIZONTAL*);  
 usernameDetails.setMargins(0,0,0,50);  
 myRelLayout.addView(username, usernameDetails);  
  
  
 }  
}

## Grid layout

<https://www.youtube.com/watch?v=DAcqmiPcXds&list=PLknSwrodgQ72X4sKpzf5vT8kY80HKcUSe&index=17>

## Event Handler

<https://www.youtube.com/watch?v=DAcqmiPcXds&list=PLknSwrodgQ72X4sKpzf5vT8kY80HKcUSe&index=17>

### Event Listner and callback method

MainActivity.java

Button mybtn = (Button) findViewById(R.id.*button*);  
mybtn.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Toast.*makeText*(MainActivity.this, "Btn clicked...", Toast.*LENGTH\_SHORT*).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"  
 android:orientation="vertical"  
 tools:context=".MainActivity">  
  
 <Button  
 android:id="@+id/button"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_centerHorizontal="true"  
 android:layout\_centerVertical="true"  
 android:text="Button" />  
</RelativeLayout>