

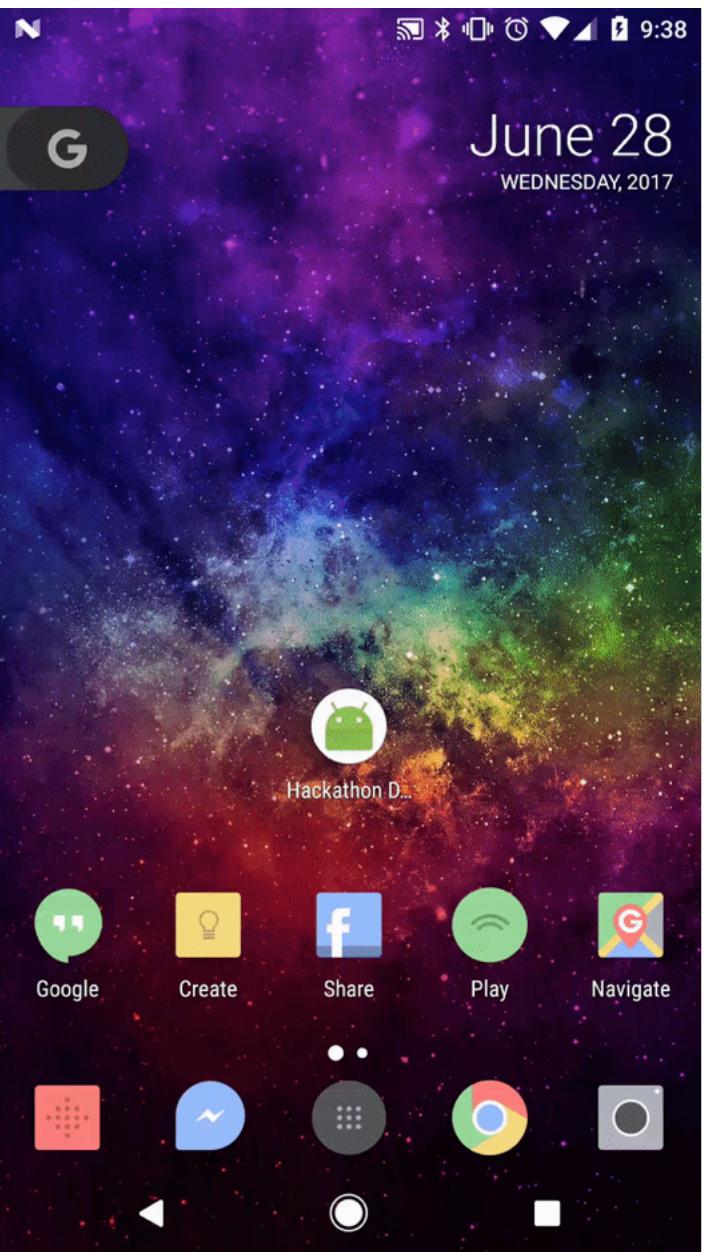
Intro To Android Application Development

Adam McNeilly - @AdamMc331

Android Studio & Repo

- <https://developer.android.com/studio/>
- <https://github.com/adammc331/hackathondemo>
- Includes Kotlin module

What We're Building



Why?

Why?

1. Learn how to put views on a screen.

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2. Learn how to interact with them (clicks, updating images)

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3. Learn how to navigate from one screen to another.

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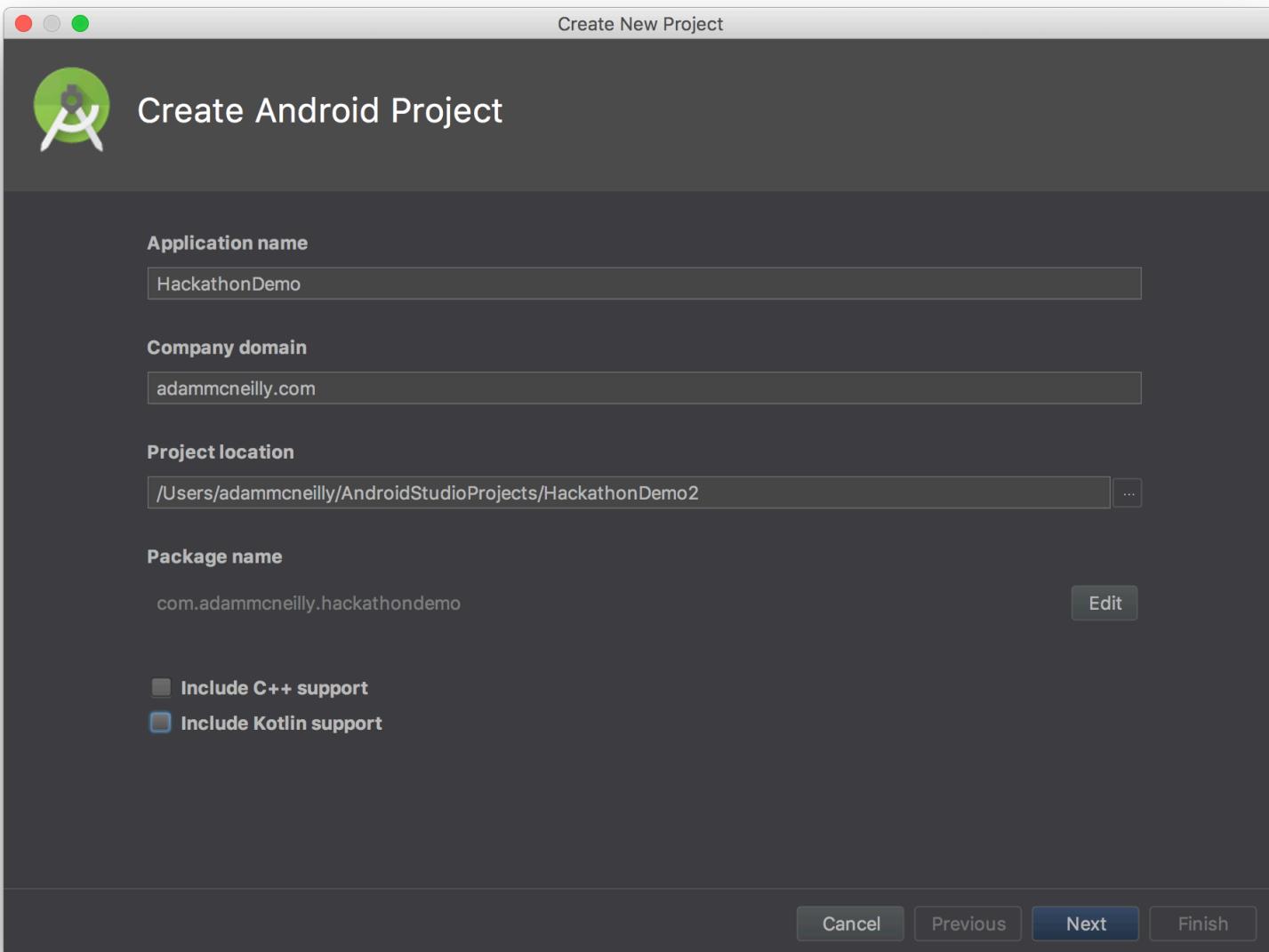
1. Learn how to put views on a screen.
2. Learn how to interact with them (clicks, updating images)
3. Learn how to navigate from one screen to another.
4. Learn how to display a list.

Live Coding?

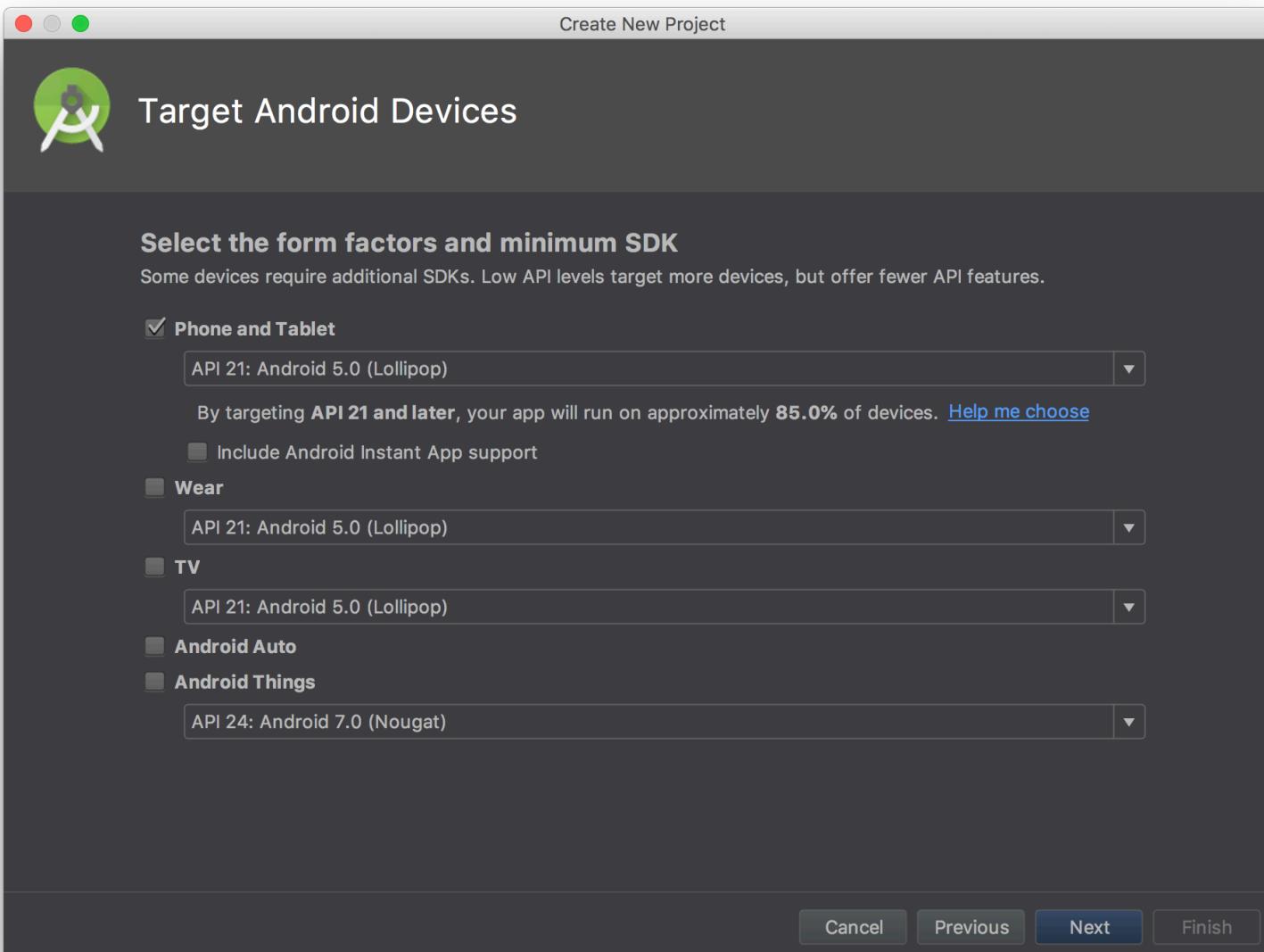
Landing Page



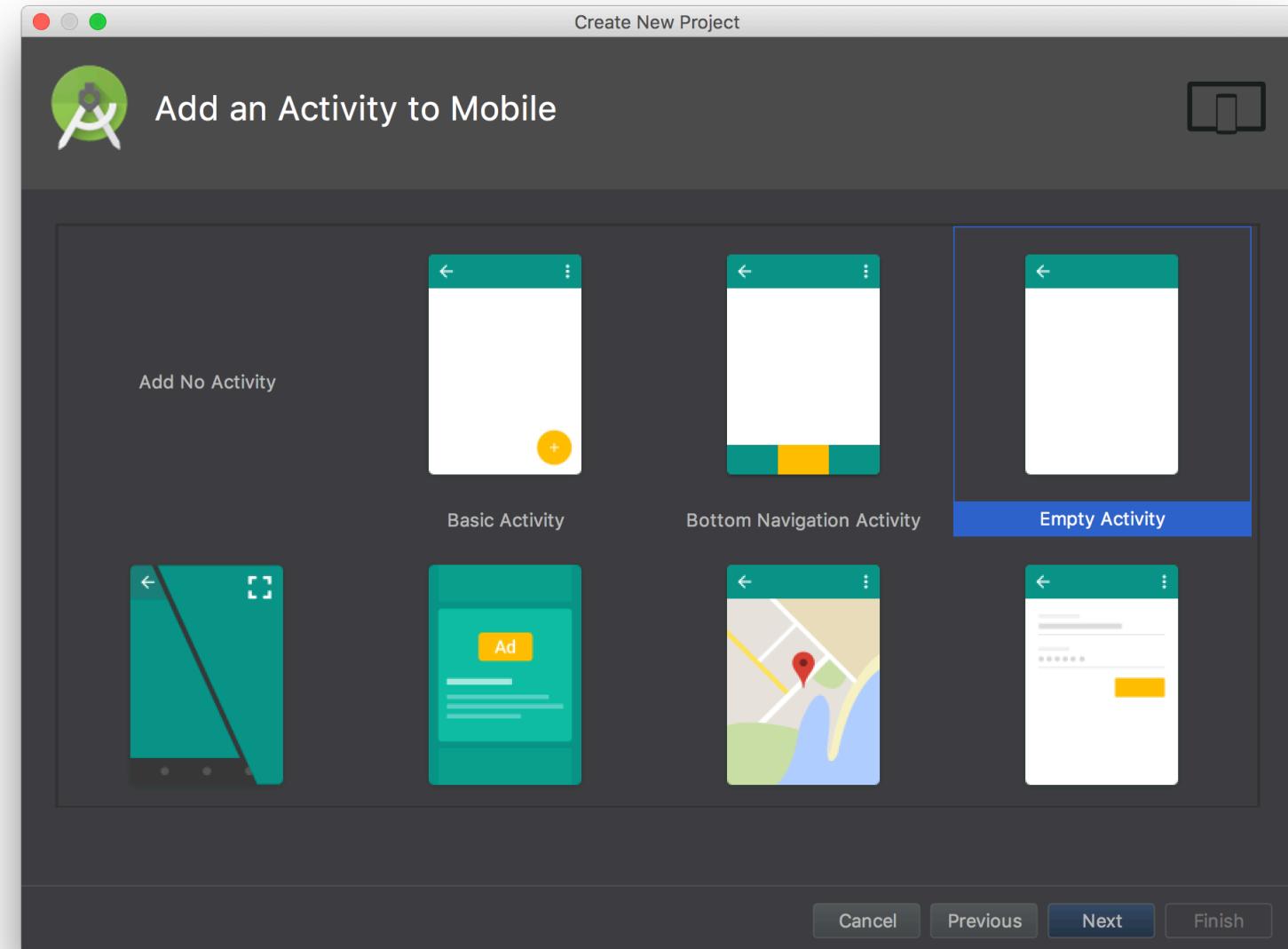
Project Setup



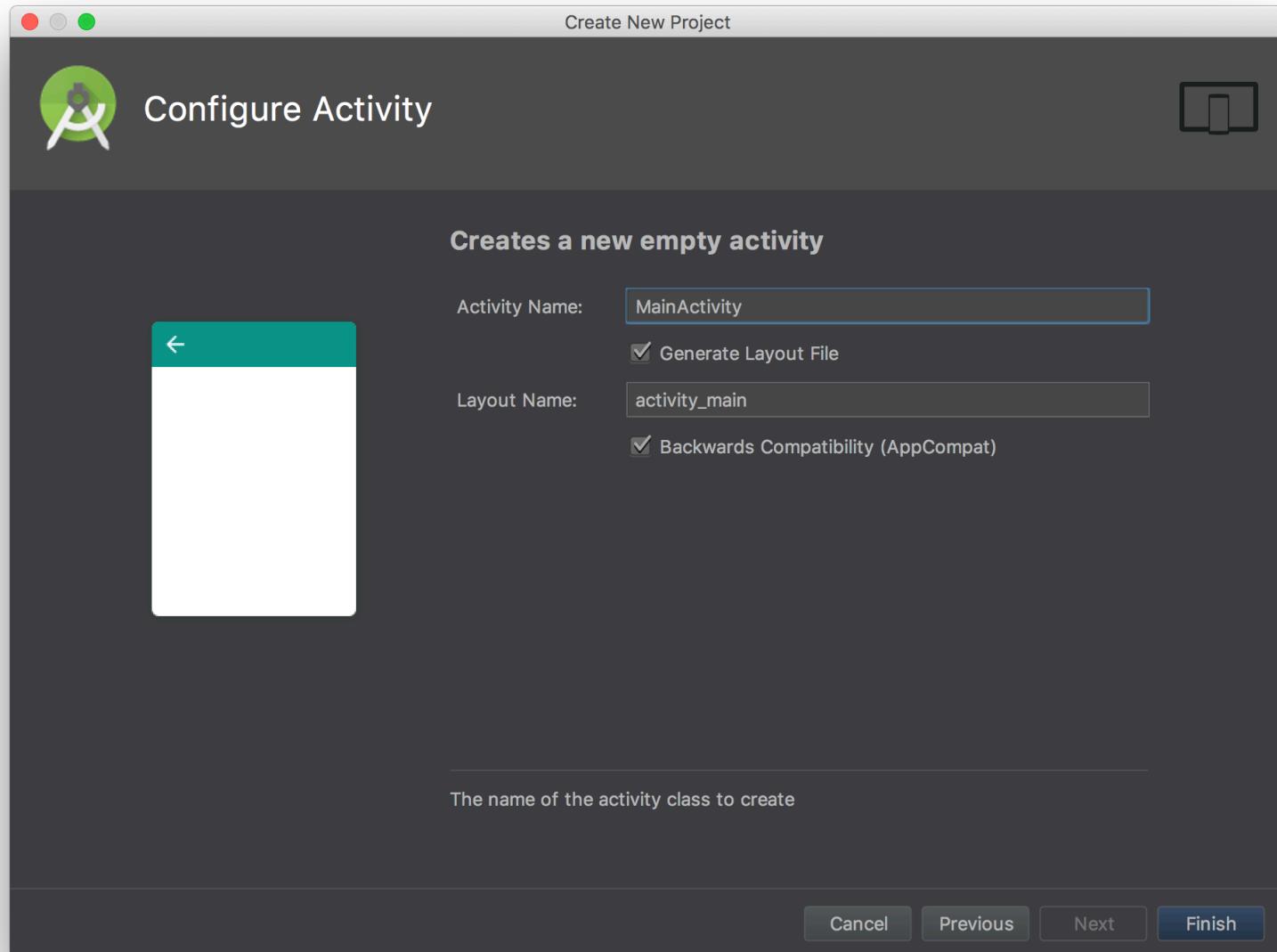
Version Support



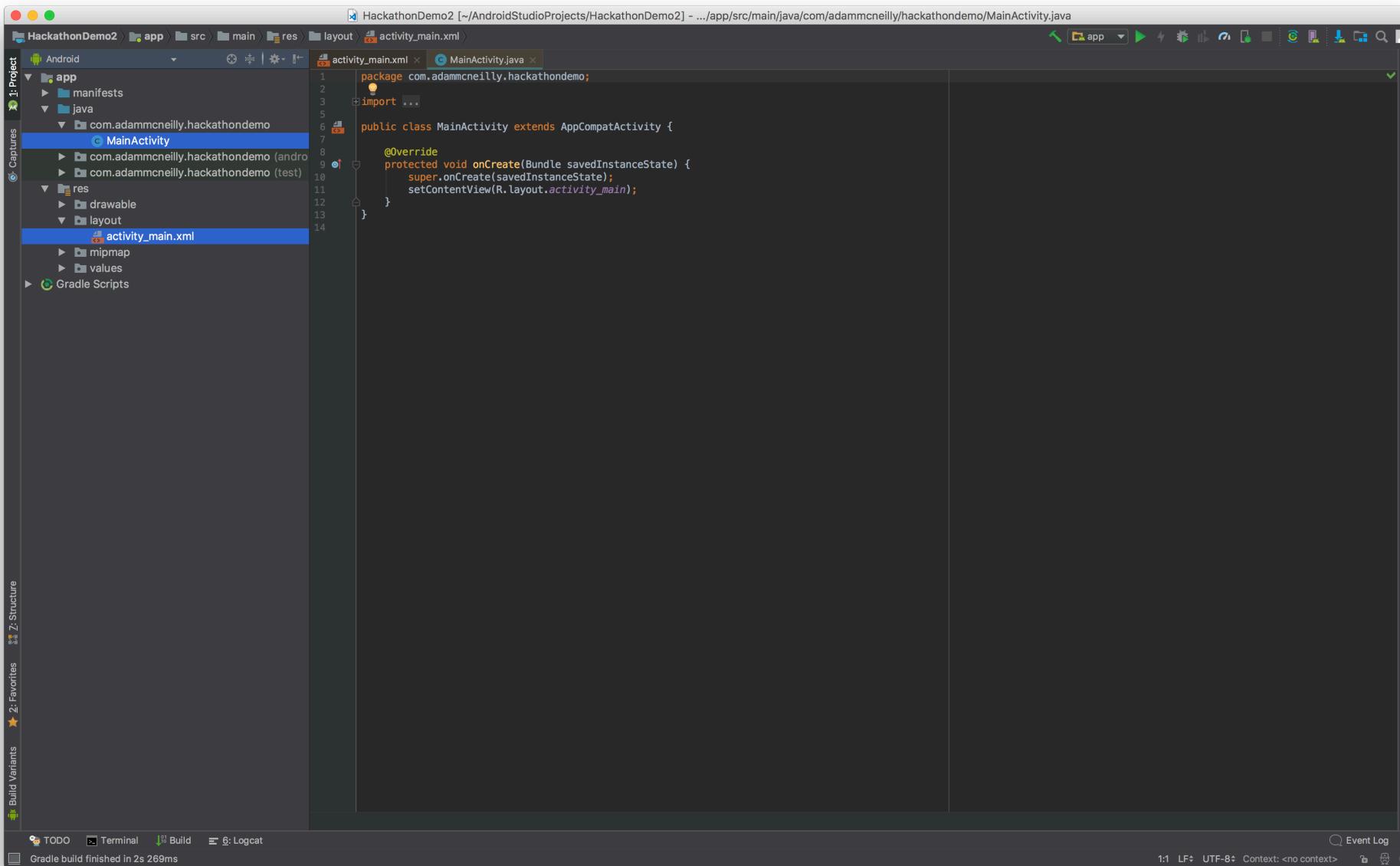
Template



Activity Naming



Project Created



Two Important Files To Start:

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- MainActivity.java

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- MainActivity.java
- activity_main.xml

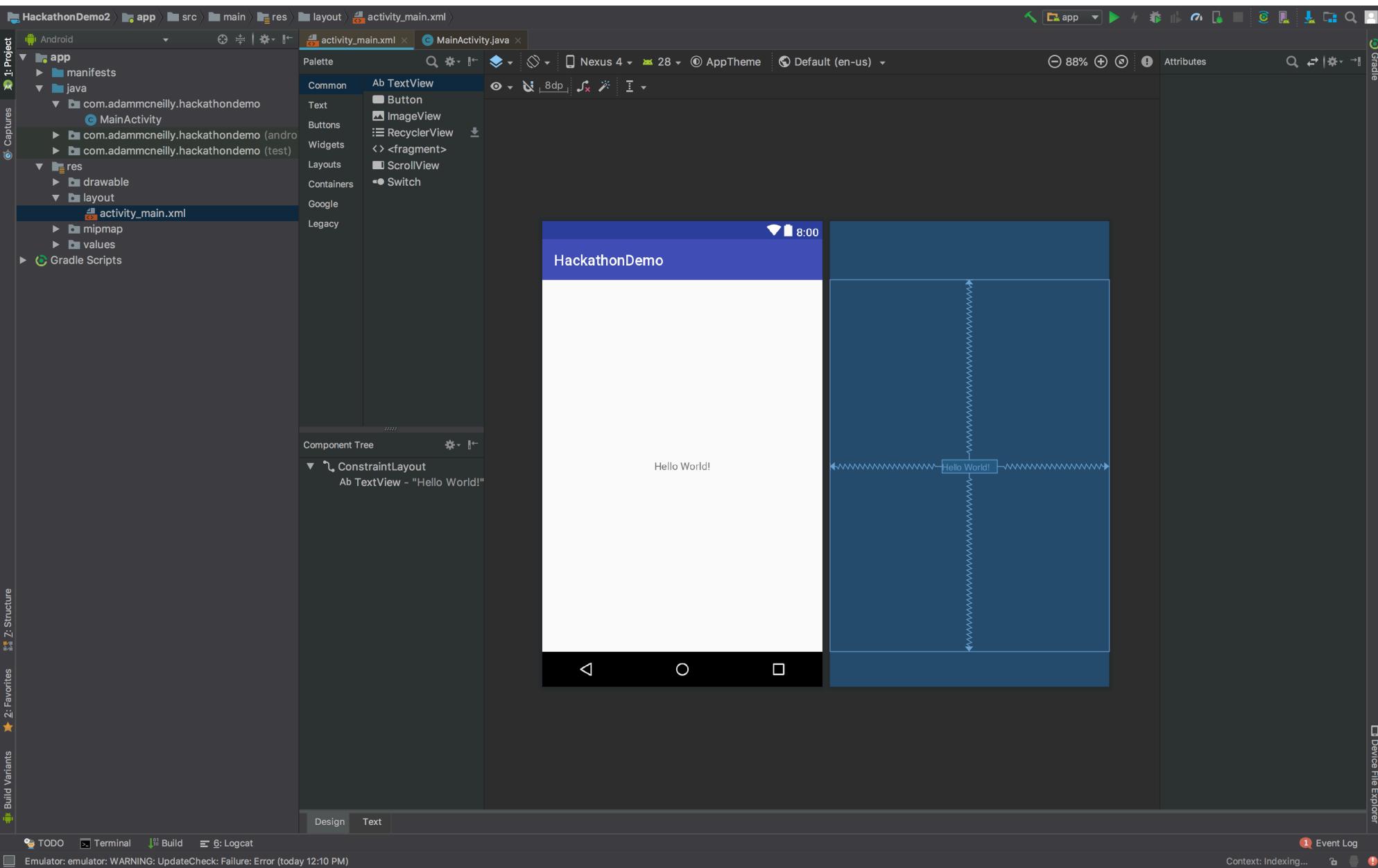
MainActivity.java

```
public class MainActivity extends AppCompatActivity {  
  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
    }  
}
```

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activity_main.xml



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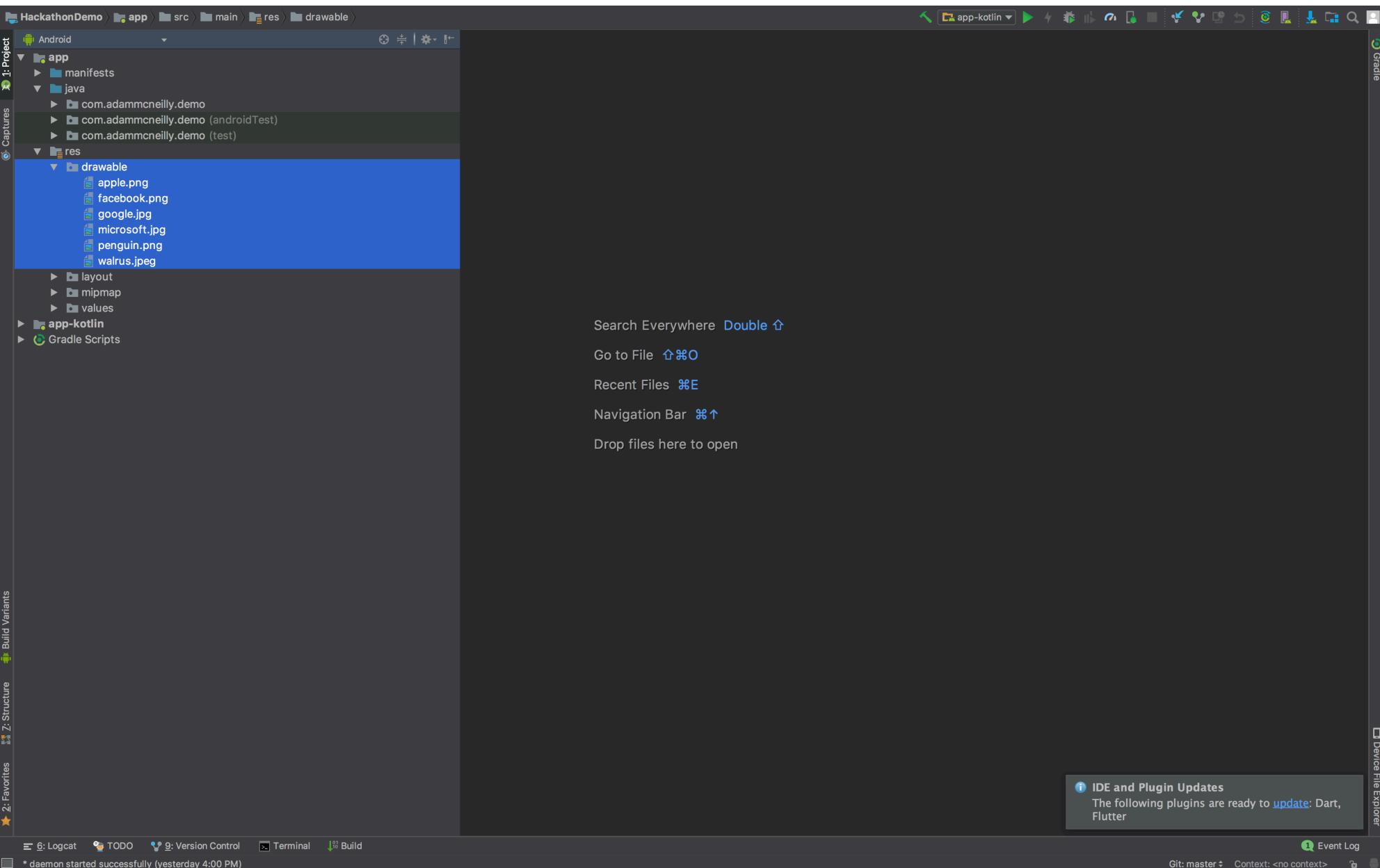
```
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</android.support.constraint.ConstraintLayout>
```

Setup Our App

Add Images



Define Our Layout

```
<LinearLayout 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:orientation="vertical"
    tools:context="com.adammcneilly.demo.MainActivity">

    <ImageView
        android:id="@+id/my_image_view"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:src="@drawable/penguin" />

    <Button
        android:id="@+id/my_button"
        android:text="CHANGE PICTURE"
        android:layout_width="wrap_content"
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</LinearLayout>
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</LinearLayout>
```

Update Our Activity

```
public class MainActivity extends AppCompatActivity {
    private boolean showPenguin = true;

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

        // Get the view references
        final ImageView myImageView = findViewById(R.id.my_image_view);
        final Button myButton = findViewById(R.id.my_button);

        // Set a click listener on the button to toggle the image
        myButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Toggle the state
                showPenguin = !showPenguin;

                // Display corresponding image
                int resource = showPenguin ? R.drawable.penguin : R.drawable.walrus;
                myImageView.setImageResource(resource);
            }
        });
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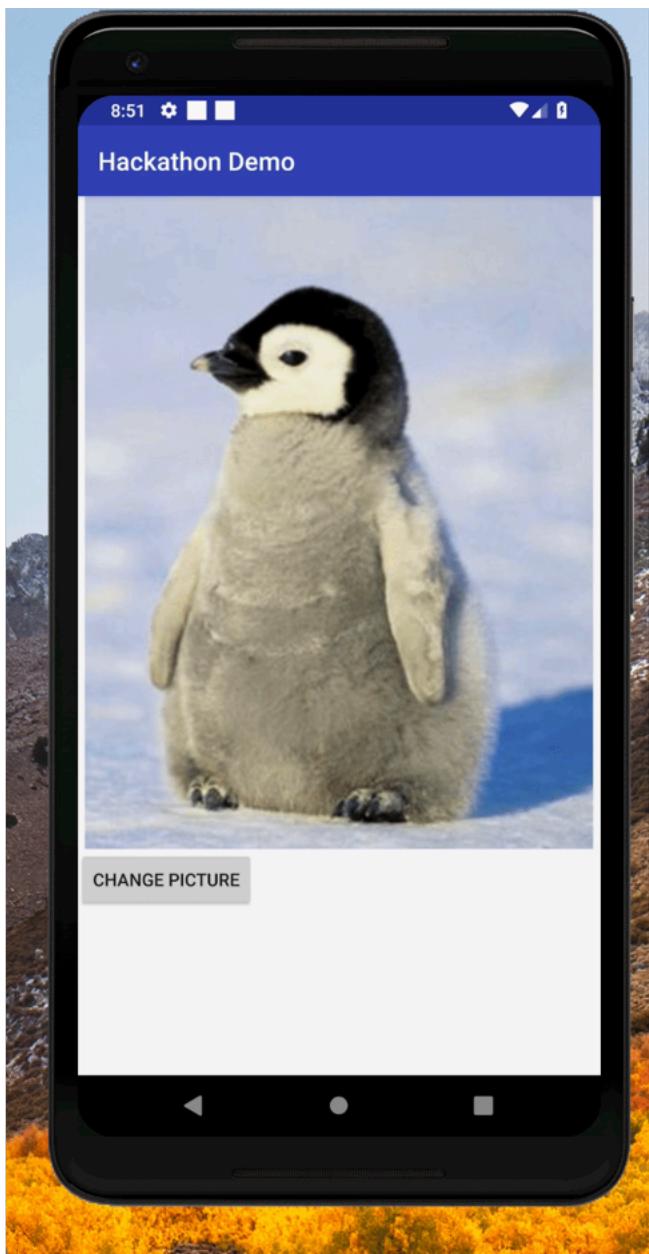
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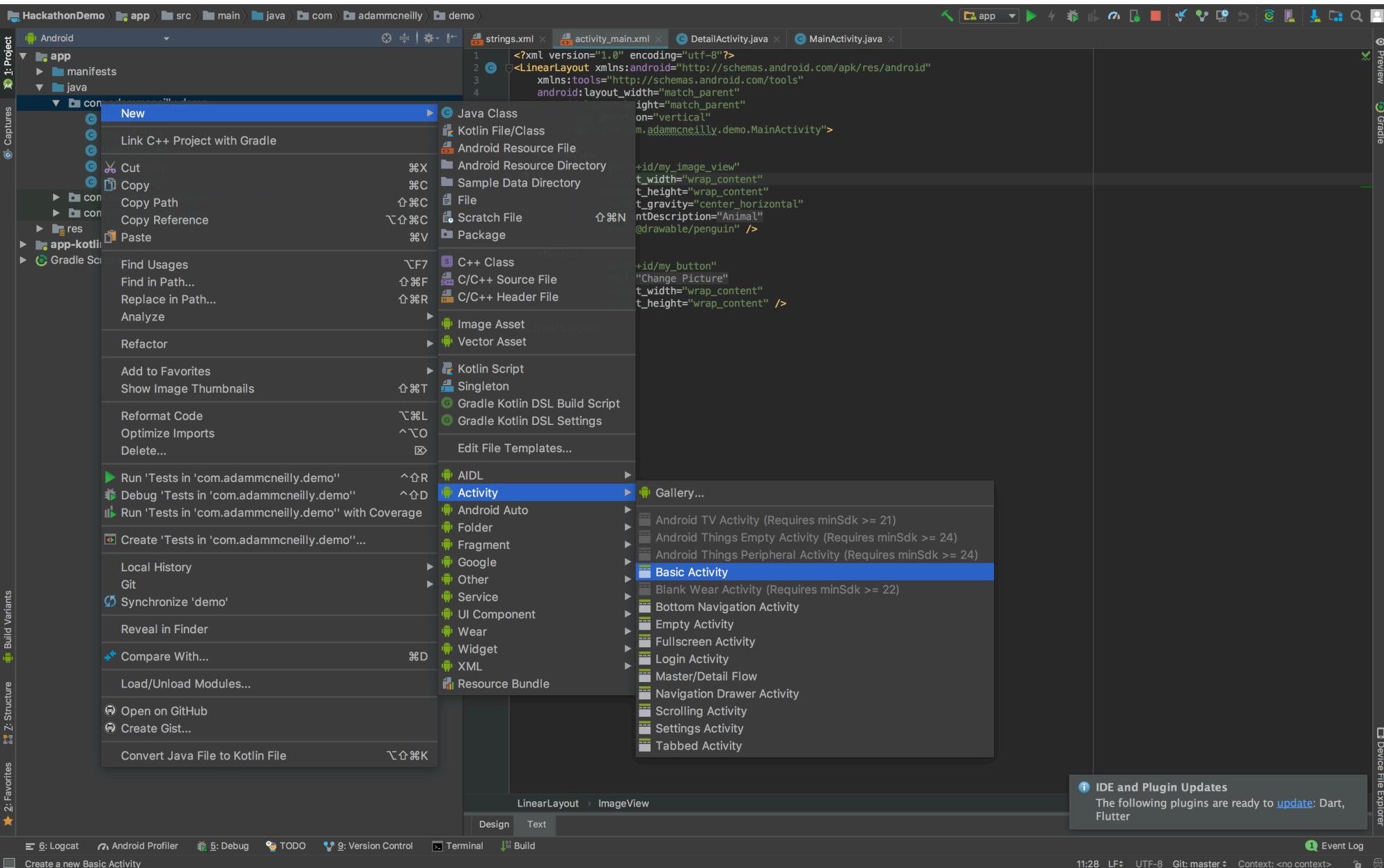
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        myButton.setOnClickListener(new View.OnClickListener() {
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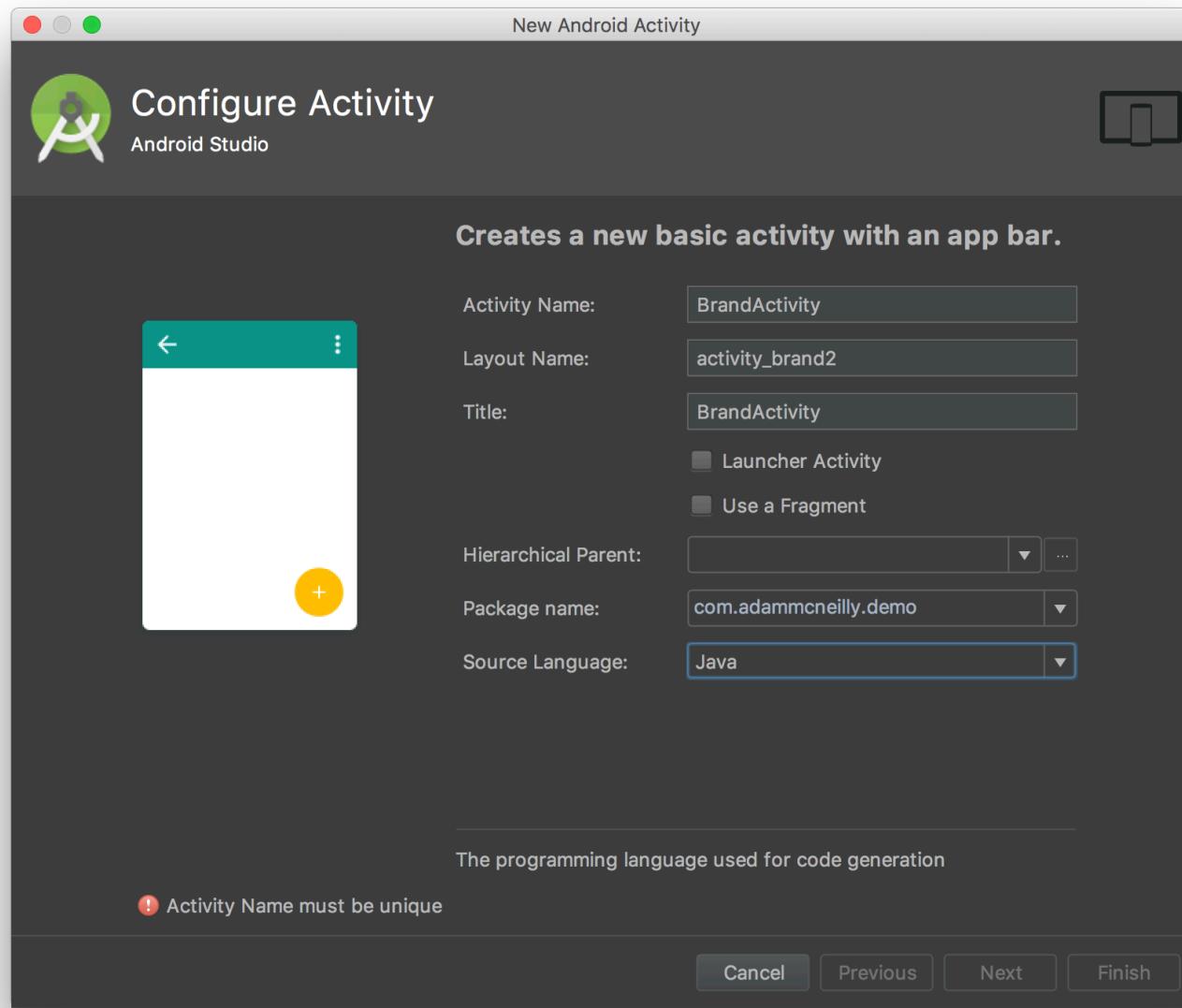
Progress



New Activity



New Activity



activity_brand.xml

```
<LinearLayout 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="com.adammcneilly.demo.BrandActivity">

    <android.support.v7.widget.RecyclerView
        android:id="@+id/brand_list"
        android:layout_width="match_parent"
        android:layout_height="match_parent"/>

</LinearLayout>
```

activity_brand.xml

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<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
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    android:layout_width="match_parent"
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RecyclerView Steps

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2. Create a layout file for the list item.
3. Create a RecyclerView.Adapter

Define A Brand

```
public class Brand {  
    private String name;  
    private int logoResource;  
  
    public Brand(String name, int logoResource) {  
        this.name = name;  
        this.logoResource = logoResource;  
    }  
  
    public String getName() {  
        return name;  
    }  
  
    public int getLogoResource() {  
        return logoResource;  
    }  
}
```

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```

list_item_brand.xml

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    xmlns:tools="http://schemas.android.com/tools"  
    android:orientation="horizontal">  
  
    <ImageView  
        android:id="@+id/brand_image"  
        android:layout_width="64dp"  
        android:layout_height="64dp"  
        tools:src="@drawable/apple"  
        android:padding="8dp" />  
  
    <TextView  
        android:id="@+id/brand_name"  
        android:layout_width="wrap_content"  
        android:layout_height="match_parent"  
        tools:text="Apple"  
        android:gravity="center"  
        android:textSize="24sp" />  
  
</LinearLayout>
```

list_item_brand.xml

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
    android:layout_width="match_parent"  
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</LinearLayout>
```

ViewHolder

```
public class BrandAdapter {  
    // ...  
  
    public class BrandViewHolder extends RecyclerView.ViewHolder {  
        private ImageView logo;  
        private TextView name;  
  
        public BrandViewHolder(View view) {  
            super(view);  
  
            // Get view references  
            logo = view.findViewById(R.id.brand_image);  
            name = view.findViewById(R.id.brand_name);  
        }  
  
        public void bindBrand(Brand item) {  
            logo.setImageResource(item.getLogoResource());  
            name.setText(item.getName());  
        }  
    }  
}
```

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            name.setText(item.getName());  
        }  
    }  
}
```

Adapter

```
public class BrandAdapter extends RecyclerView.Adapter<BrandAdapter.BrandViewHolder> {
    private List<Brand> brands;

    public BrandAdapter(List<Brand> brands) {
        this.brands = brands;
    }

    @NonNull
    @Override
    public BrandViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType) {
        Context context = parent.getContext();
        View view = LayoutInflater.from(context).inflate(R.layout.list_item_brand, parent, false);
        return new BrandViewHolder(view);
    }

    @Override
    public void onBindViewHolder(@NonNull BrandViewHolder holder, int position) {
        Brand item = brands.get(position);
        holder.bindBrand(item);
    }

    @Override
    public int getItemCount() {
        return brands.size();
    }

    public class BrandViewHolder extends RecyclerView.ViewHolder {
        // ...
    }
}
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Setup RecyclerView

```
public class BrandActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_brand);

        List<Brand> brandList = getSampleBrands();
        BrandAdapter adapter = new BrandAdapter(brandList);
        LinearLayoutManager linearLayoutManager = new LinearLayoutManager(this);

        // Setup RecyclerView
        RecyclerView recyclerView = findViewById(R.id.brand_list);
        recyclerView.setLayoutManager(linearLayoutManager);
        recyclerView.setAdapter(adapter);
    }

    private List<Brand> getSampleBrands() {
        List<Brand> brandList = new ArrayList<>();
        brandList.add(new Brand("Apple", R.drawable.apple));
        brandList.add(new Brand("Facebook", R.drawable.facebook));
        brandList.add(new Brand("Google", R.drawable.google));
        brandList.add(new Brand("Microsoft", R.drawable.microsoft));
        return brandList;
    }
}
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        brandList.add(new Brand("Facebook", R.drawable.facebook));
        brandList.add(new Brand("Google", R.drawable.google));
        brandList.add(new Brand("Microsoft", R.drawable.microsoft));
        return brandList;
    }
}
```

Setup RecyclerView

```
public class BrandActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_brand);

        List<Brand> brandList = getSampleBrands();
        BrandAdapter adapter = new BrandAdapter(brandList);
        LinearLayoutManager linearLayoutManager = new LinearLayoutManager(this);

        // Setup RecyclerView
        RecyclerView recyclerView = findViewById(R.id.brand_list);
        recyclerView.setLayoutManager(linearLayoutManager);
        recyclerView.setAdapter(adapter);
    }

    private List<Brand> getSampleBrands() {
        List<Brand> brandList = new ArrayList<>();
        brandList.add(new Brand("Apple", R.drawable.apple));
        brandList.add(new Brand("Facebook", R.drawable.facebook));
        brandList.add(new Brand("Google", R.drawable.google));
        brandList.add(new Brand("Microsoft", R.drawable.microsoft));
        return brandList;
    }
}
```

Launch Brand Activity

```
public class MainActivity extends AppCompatActivity {
    // ...

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

        // ...

        // Set a long click listener on the button to start our brand activity
        myButton.setOnLongClickListener(new View.OnLongClickListener() {
            @Override
            public boolean onLongClick(View v) {
                startBrandActivity();
                return true;
            }
        });
    }

    private void startBrandActivity() {
        Intent intent = new Intent(MainActivity.this, BrandActivity.class);
        startActivity(intent);
    }
}
```

Launch Brand Activity

```
public class MainActivity extends AppCompatActivity {
    // ...

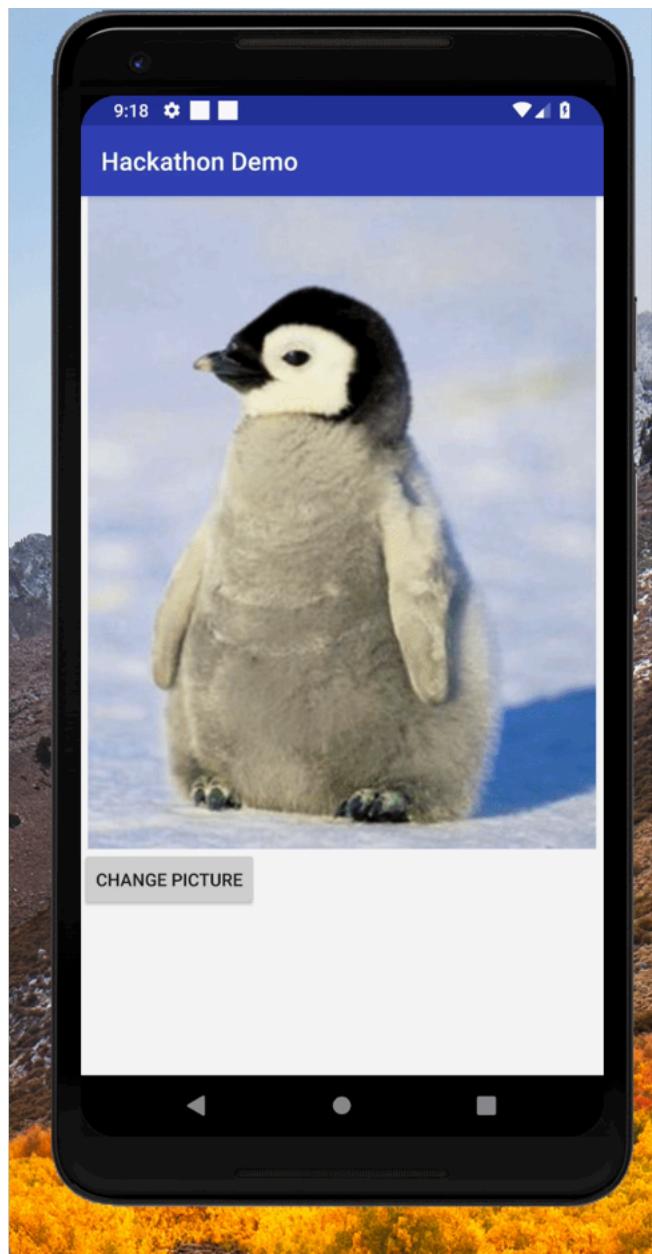
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        // ...

        // Set a long click listener on the button to start our brand activity
        myButton.setOnLongClickListener(new View.OnLongClickListener() {
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    private void startBrandActivity() {
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        startActivity(intent);
    }
}
```

Progress



Detail Activity

Detail Activity

- Follow same new activity steps as in the past.

Detail Activity

- Follow same new activity steps as in the past.
- Copy XML layout from `activity_main.xml` to `activity_detail.xml` for ease of demonstration.

Detail Activity

```
public class DetailActivity extends AppCompatActivity {
    public static final String BRAND_LOGO_KEY = "brandLogo";
    public static final String BRAND_NAME_KEY = "brandName";

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

        // Get View references
        ImageView imageView = findViewById(R.id.my_image_view);
        Button button = findViewById(R.id.my_button);

        // Get extras from intent
        int logoResource = getIntent().getIntExtra(BRAND_LOGO_KEY, R.drawable.apple);
        String name = getIntent().getStringExtra(BRAND_NAME_KEY);

        // Set values
        imageView.setImageResource(logoResource);
        button.setText(name);
    }
}
```

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        String name = getIntent().getStringExtra(BRAND_NAME_KEY);

        // Set values
        imageView.setImageResource(logoResource);
        button.setText(name);
    }
}
```

Launching Detail Activity

```
public class BrandAdapter extends RecyclerView.Adapter<BrandAdapter.BrandViewHolder> {
    // ...

    public class BrandViewHolder extends RecyclerView.ViewHolder implements View.OnClickListener {
        public BrandViewHolder(View view) {
            super(view);

            // .....

            // Set click listener to view
            view.setOnClickListener(this);
        }

        @Override
        public void onClick(View v) {
            // Get the brand
            Brand brand = brands.get(getAdapterPosition());

            // Build an intent
            Intent intent = new Intent(v.getContext(), DetailActivity.class);
            intent.putExtra(DetailActivity.BRAND_LOGO_KEY, brand.getLogoResource());
            intent.putExtra(DetailActivity.BRAND_NAME_KEY, brand.getName());

            // Launch activity
            v.getContext().startActivity(intent);
        }
    }
}
```

Launching Detail Activity

```
public class BrandAdapter extends RecyclerView.Adapter<BrandAdapter.BrandViewHolder> {
    // ...

    public class BrandViewHolder extends RecyclerView.ViewHolder implements View.OnClickListener {
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        }
    }
}
```

Launching Detail Activity

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public class BrandAdapter extends RecyclerView.Adapter<BrandAdapter.BrandViewHolder> {
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            // .....

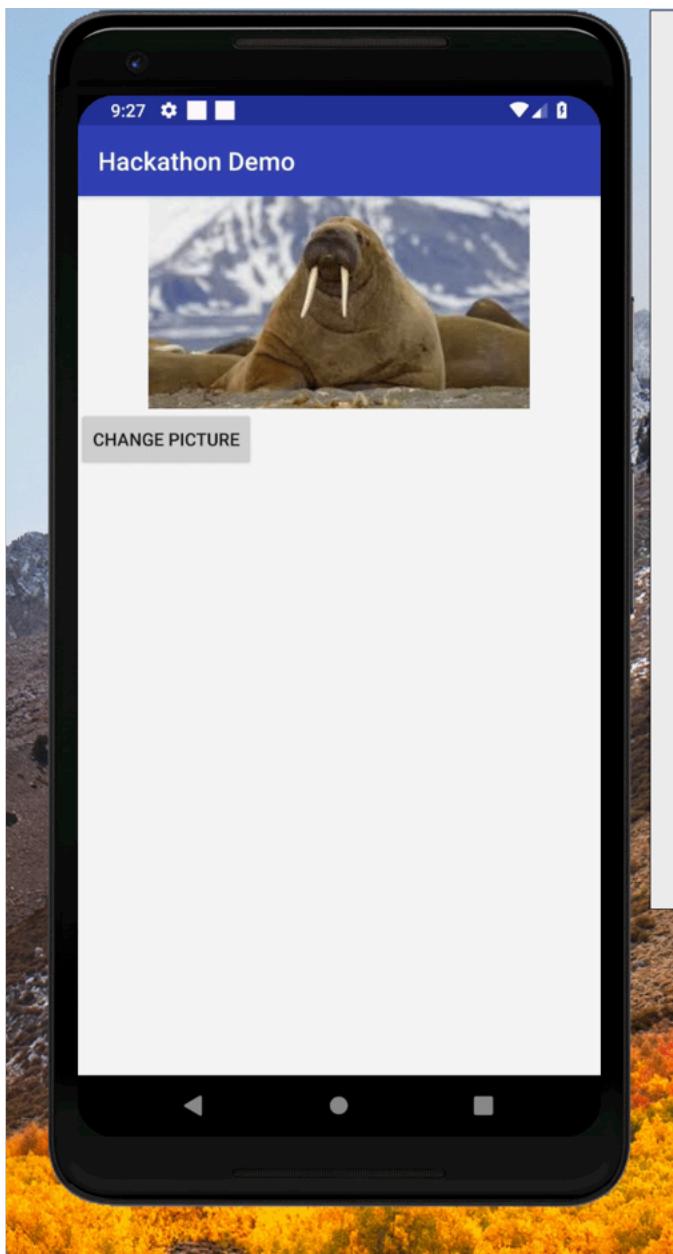
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            // Build an intent
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            v.getContext().startActivity(intent);
        }
    }
}
```

Complete!



@AdamMc331