Android Intent

Intent

- An intent is an abstract description of an operation to be performed.
- Intent to do something, or intent to go somewhere.
- Using Bundle to carry data.
- Reference
  - *http://developer.android.com/intl/zh-TW/reference/android/content/Intent.html#setClass(android.content.Context,%20java.lang.Class%3C?%3E)*

Intent API

- public Intent setClass(Context packageContext, Class<?> cls)
  - Set the class that intent to go.
  - packageContext : A Context of the application package implementing this class.
  - cls : The class name to set
- public Intent setClassName(String packageName, String className)
  - Same as above
  - packageName : The name of the package implementing the desired component.
  - className : The name of a class inside of the application package that will be used as the component for this Intent.
- public Intent putExtras(Bundle extras)
  - Add a set of extended data to the intent.
- public Bundle getExtras()
  - Retrieves a map of extended data from the intent.

We thank cllee for sharing his slides with us

Bundle

- A mapping from String values to various Parcelable types.
- A bundle to store data of various type.
- A set of put / get method to put in and get off data.
  - public void putString(String key, String value)
  - public String getString(String key)

We thank cllee for sharing his slides with us

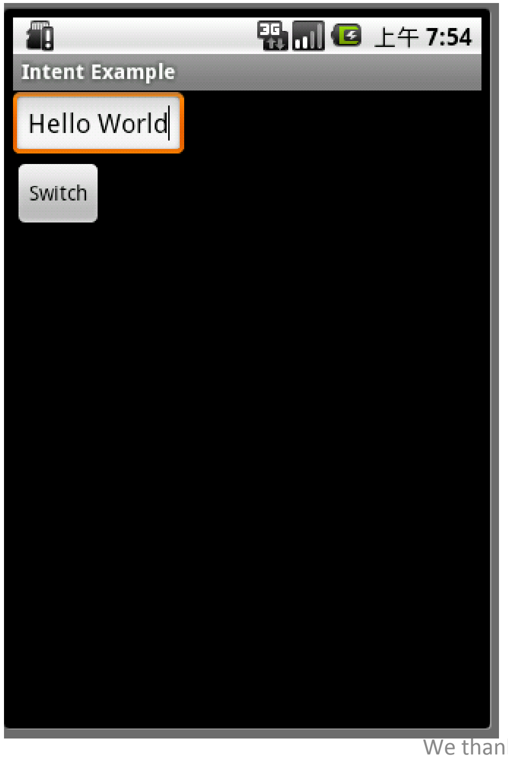
New Class and Layout

- New class
  - Select src → pkg → mouse right click → New → Class → Enter class name → finish
  - Use startActivity(Intent intent) to switch to another activity
- New layout
  - Select res → layout → mouse right click → New → Other… → Android → Android XML File → Enter xml file name(First letter of the name should be lowercase) → finish
  - Use setContentView(R.layout.layoutName) to set the activity layout

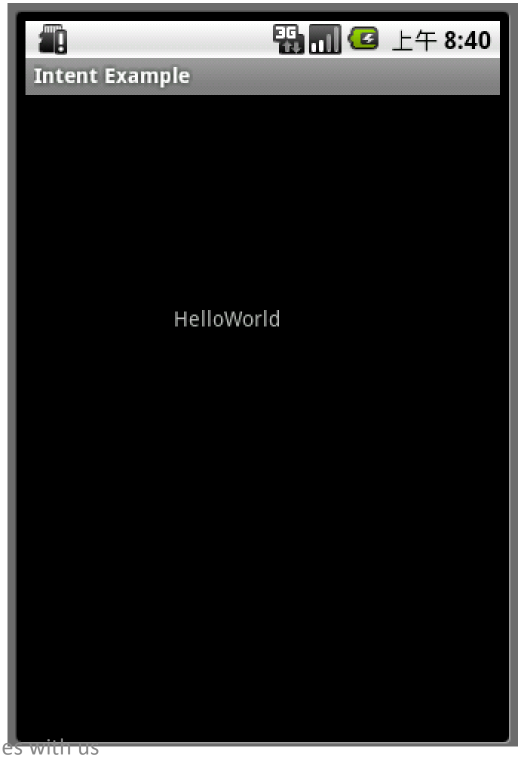
We thank cllee for sharing his slides with us

Example

- Edit text in Activity1 and press button to switch to activity2. Activity2 show the string typed in Activity1.



Hello World



HelloWorld

We thank cllee for sharing his slides with us

IntentEx.java

```
package tw.nthu.cs241001;

import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;

public class IntentEx extends Activity {
  /** Called when the activity is first created. */

  Button myButton ;
  EditText myEdit ;

  public void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.main);
    myButton = (Button) findViewById(R.id.RButton);
    myEdit = (EditText) findViewById(R.id.REditText);
    //set onClickListerner
    myButton.setOnClickListener( event ) ;
  }
  private OnClickListener event = new OnClickListener(){
   public void onClick(View v){
      // new intent and set the class which intent to
     Intent intent = new Intent();
     intent.setClassName( "tw.nthu.cs241001" ,
       IntentExTo.class.getName());
     //new bundle and put the string in
     Bundle bundle = new Bundle();
     bundle.putString("StrKey",myEdit.getText().toString());
     //assign the bundle to the intent
     intent.putExtras(bundle);
     //switch to another activity
     startActivity(intent);
   }
  };
}
```

IntentExTo.java

```
package tw.nthu.cs241001;

import android.app.Activity;
import android.os.Bundle;
import android.widget.TextView;

public class IntentExTo extends Activity {

  TextView myText ;

  public void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     // loaded mylayout to this activity
     setContentView(R.layout.mylayout);
```

```
        // get bundle of this intent from this activity
        Bundle bunde = this.getIntent().getExtras();
        // get string from the bundle
        String str = bunde.getString("StrKey");
        // set TextView text to str
        myText =(TextView)findViewById(R.id.RText);
        myText.setText(str) ;
    }
}
```

AndroidManifest.xml

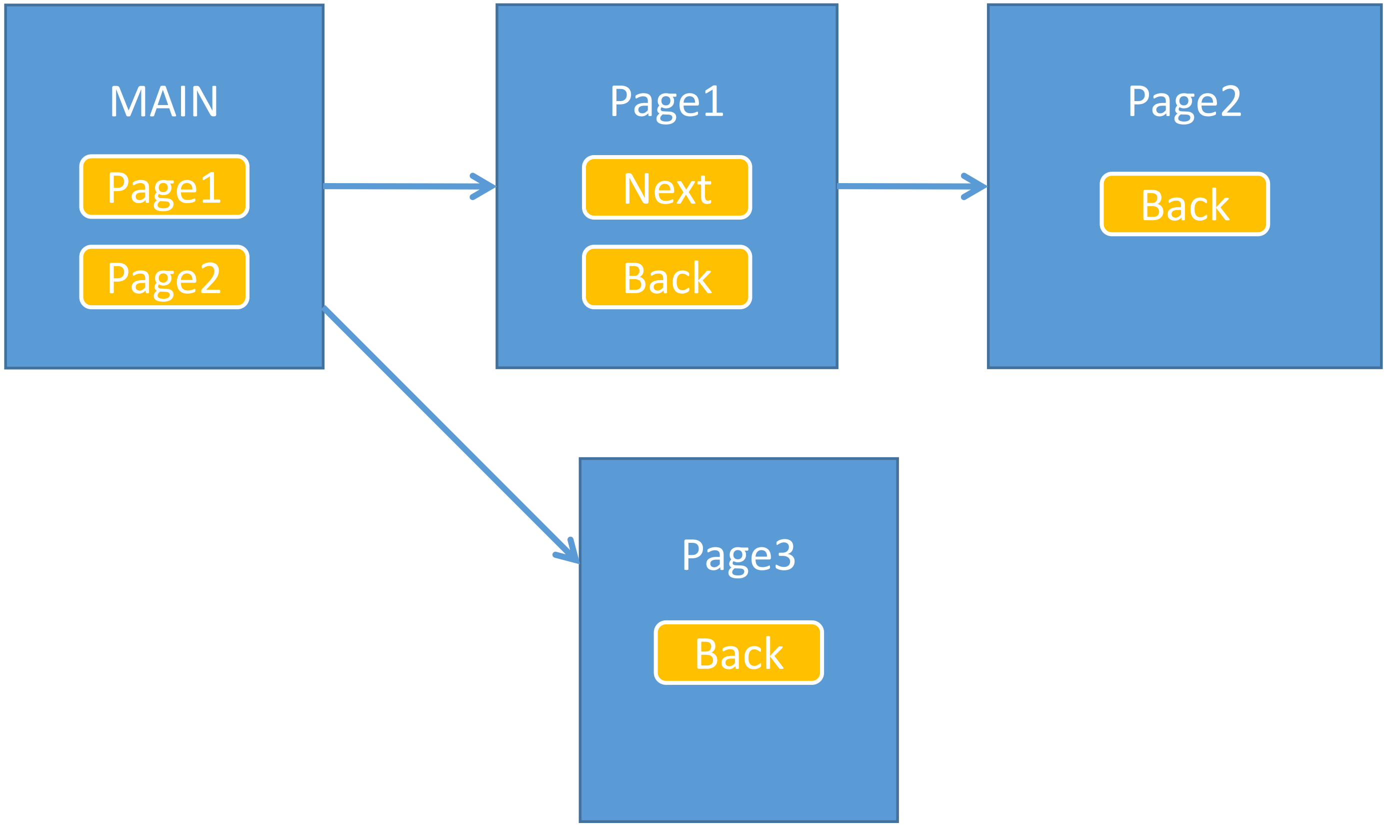
- Add an activity label of new activity

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   package="tw.nthu.cs241001"
   android:versionCode="1"
   android:versionName="1.0">
  <application android:icon="@drawable/icon" android:label="@string/app_name">
    <activity android:name=".IntentEx"
         android:label="@string/app_name">
      <intent-filter>
        <action android:name="android.intent.action.MAIN" />
        <category android:name="android.intent.category.LAUNCHER" />
      </intent-filter>
    </activity>
   <activity android:name="IntentExTo"></activity>
  </application>
</manifest>
```

Example2

Switch Intents

Intent Switch



We thank cllee for sharing his slides with us

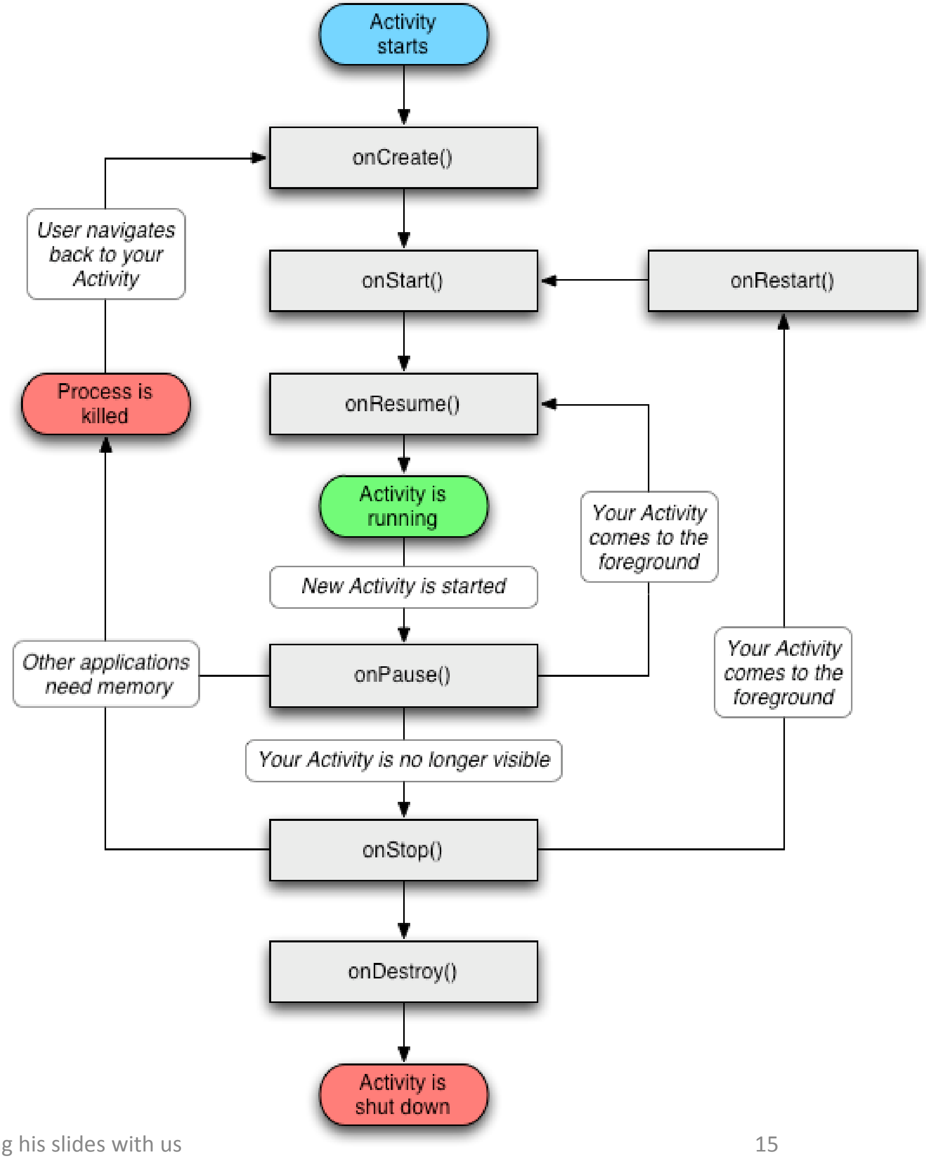
LifeCycleDemo.java

```java
private OnClickListener event1 = new OnClickListener(){
            public void onClick(View v){
                   Intent intent = new Intent();
                   intent.setClassName( "tw.nthu.cs.cs241001" ,
                                  Page1.class.getName());
                   startActivity(intent);
            }
    };
    private OnClickListener event2 = new OnClickListener(){
            public void onClick(View v){
                   Intent intent = new Intent();
                   intent.setClassName( "tw.nthu.cs.cs241001" ,
                                  Page3.class.getName());
                   startActivity(intent);
            }
     };
     public void onPause()
     {
          Toast.makeText(
                          this,
                          "onPause",
                          Toast.LENGTH_SHORT).show() ;
         super.onPause();
     }
```

We thank cllee for sharing his slides with us

LifeCycle

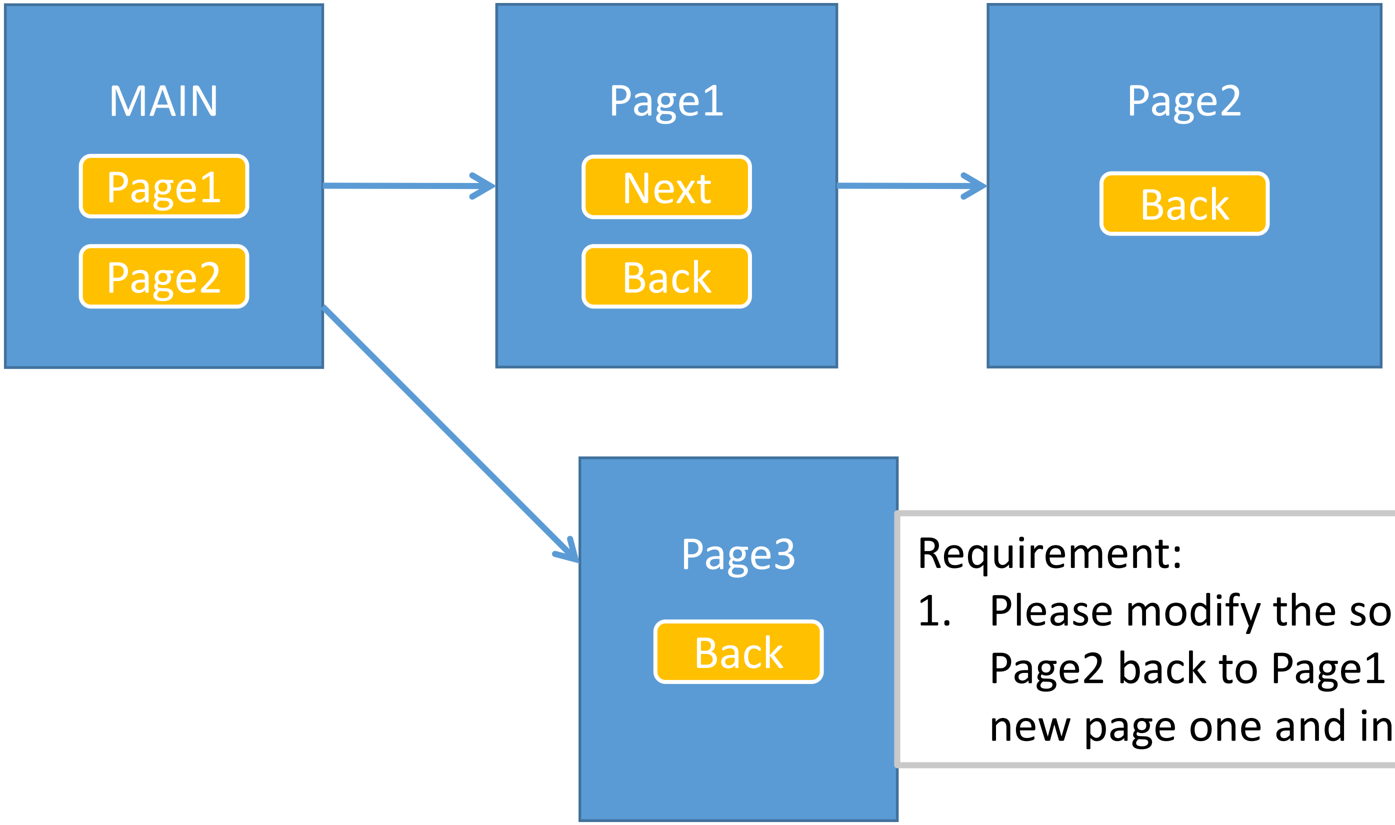
- Normal
  - onCreate->OnStart ->OnResume
- Switch to another activity
  - onPause(1) -> onCreate(2) -> onStart(2) - onResume(2) -> onStop(1)
- Click “back”
  - onPause -> onStop -> onDestroy


Activity starts
onCreate()
User navigates back to your Activity
onStart()
onRestart()
Process is killed
onResume()
Activity is running
Your Activity comes to the foreground
New Activity is started
Other applications need memory
onPause()
Your Activity comes to the foreground
Your Activity is no longer visible
onStop()
onDestroy()
Activity is shut down

Page1.java

```
public class Page1 extends Activity{
        public Button myButton1;
        public Button myButton2;
        public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.page1);
        myButton1 = (Button)findViewById(R.id.Button02);
        myButton2 = (Button)findViewById(R.id.Button03);
        myButton1.setOnClickListener(event1);
        myButton2.setOnClickListener(event2);
    }
    private OnClickListener event1 = new OnClickListener(){
            public void onClick(View v){
                   Intent intent = new Intent();
                   intent.setClassName( "tw.nthu.cs.cs241001" ,
Page2.class.getName());
                   startActivity(intent);
                   finish();
            }
    };
    private OnClickListener event2 = new OnClickListener(){
            public void onClick(View v){
                    finish();
            }
    };
}
```

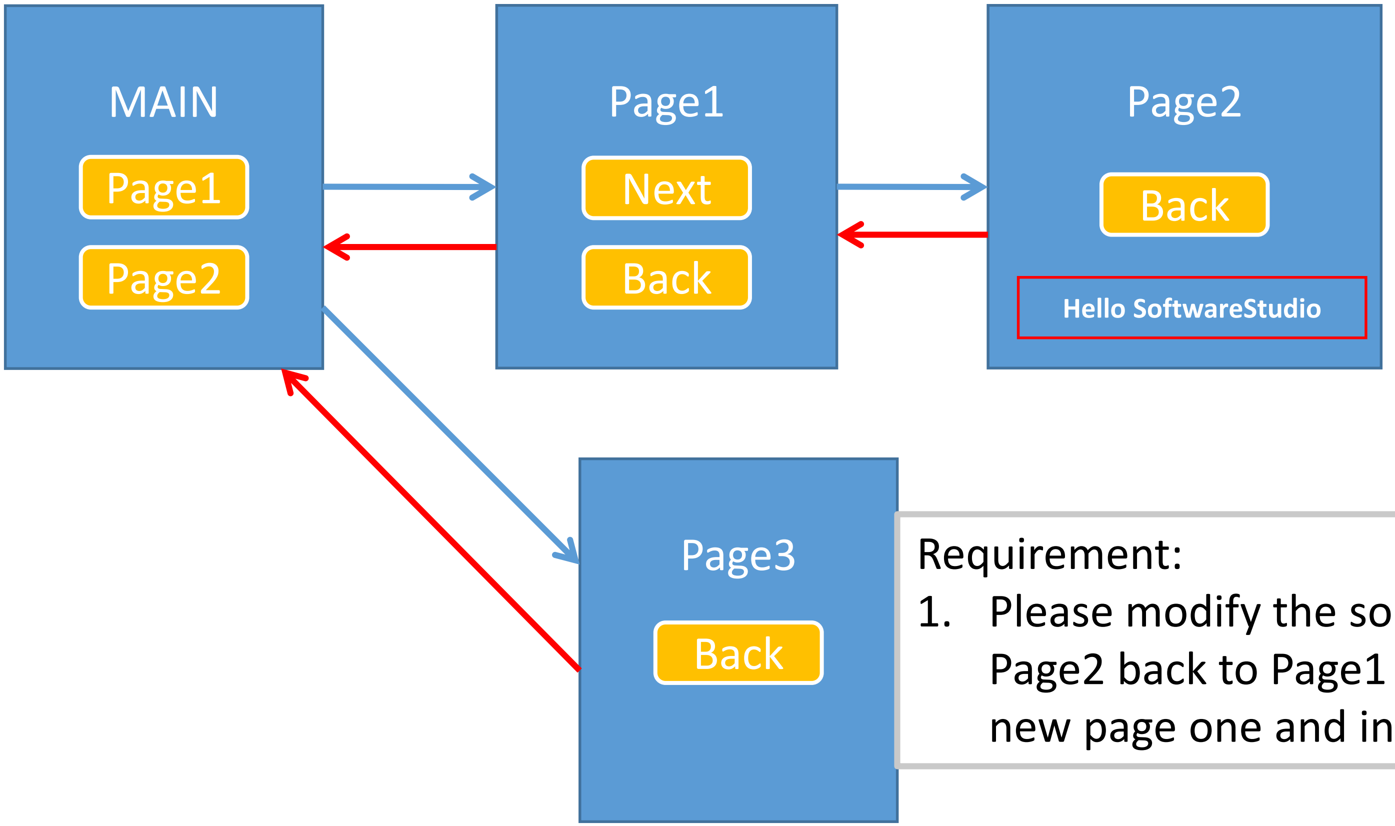
Try it!



Requirement:

1. Please modify the source code to let Page2 back to Page1 (not to create a new page one and intent to it)

Try it!



Requirement:

1. Please modify the source code to let Page2 back to Page1 (not to create a new page one and intent to it)

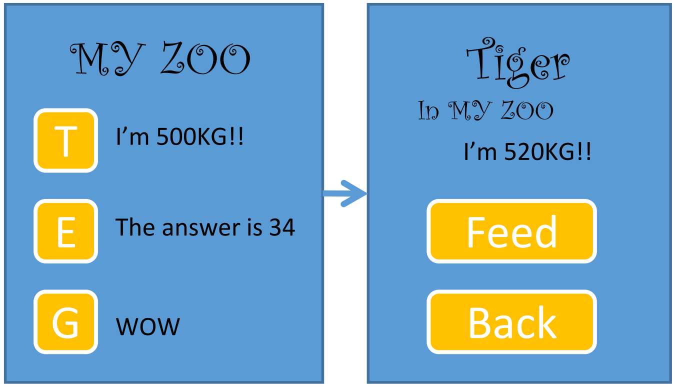
Lab Requirement

- The Zoo
  - Create your zoo contains three kinds of animals with different skills
  - The application name should be XXX Zoo (named it by yourself)
- Basic Requirement(Score A)
  - Main page
    - Title
    - Three buttons represent three kinds of animals
      - Elephant, Tiger and Giraffe
    - Text to describe the states of the animals
      - Elephant : The last result of the computation it did
      - Tiger : tiger’s weight
      - Giraffe : The last result of what it said

Lab Requirement

- Animal pages : click animal button and enter the animal page. Each animals has their own page
  - Elephant : Basic computation (+,-,*,/)
  - Tiger : You can feed the tiger and make it fat
  - Giraffe : Say a word to the giraffe and it will respond the reverse of the word to you (e.g. Tell it "Hello", it will respond "olleH")
- Each animal page should contain a back button to go back to main page
- A menu with three items
  - Introduction : Show a Toast message with some welcome message
  - Reset : reset the animal states to default value
  - Quit : Finish the application

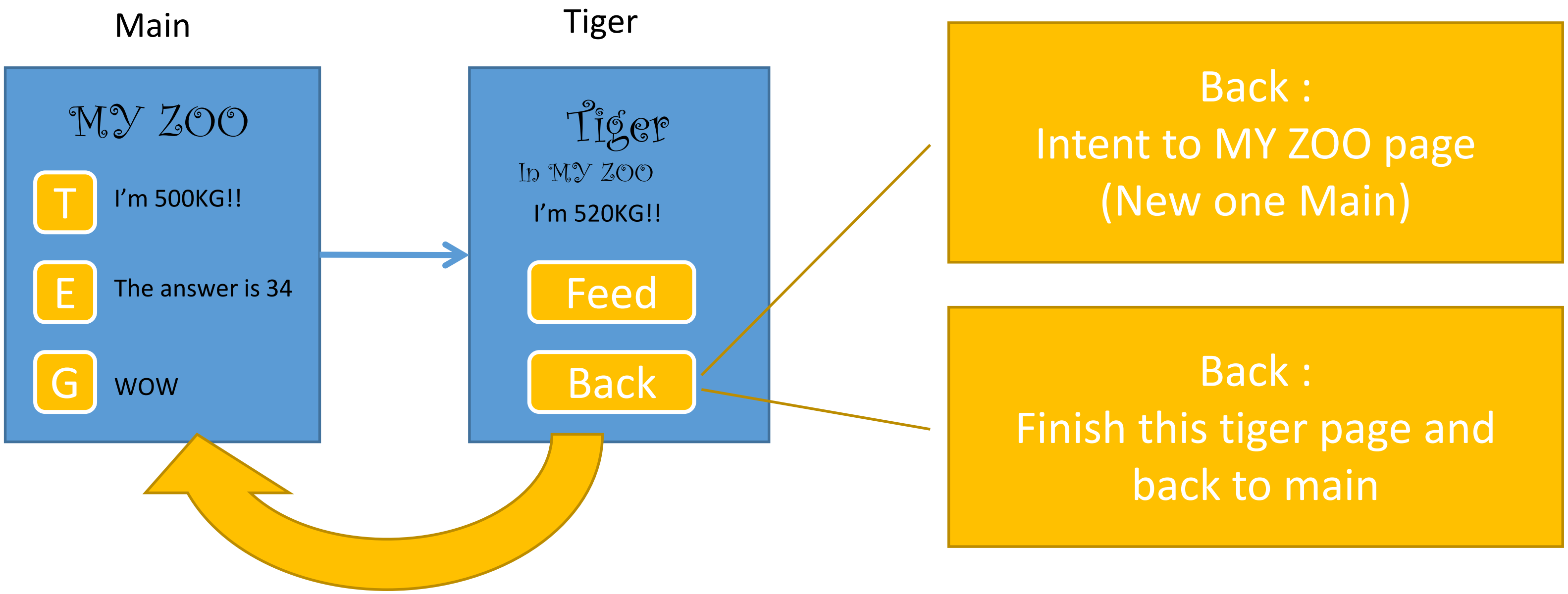
- Other(Score A+)
  - ImageButton
  - Different color and font size of the text
  - Make a good-looking UI
  - …



Main Page Tiger Page

We thank cllee for sharing his slides with us

ZOO



Back :
Intent to MY ZOO page
(New one Main)

Back :
Finish this tiger page and back to main

What is the difference?!

Useful Method

- **startActivityForResult** (Intent intent, int requestCode)
  - Launch an activity for which you would like a result when it finished.

- **setResult** (int resultCode)
  - Call this to set the result that your activity will return to its caller.

- **onActivityResult** (int requestCode, int resultCode, Intent data)
  - Called when an activity you launched exits, giving you the requestCode you started it with, the resultCode it returned, and any additional data from it.

- **Reference:** http://developer.android.com/reference/android/app/Activity.html