

**CPET 565/499**  
**Mobile Computing Systems**  
**Lecture 6**  
**Highlights of Android Example Codes**

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A Specialty Course for Purdue University's M.S. in Technology  
Graduate Program

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**Text Book: Android Applications**  
**Development in 24 Hours**

Hour 2: Understanding an Android Activity

- A Class - MainActivity
  - onCreate():
  - a Button
  - a EditText field
- Starting (Launching) one activity from another
  - Activity A <=> Activity B
  - intent-filter
  - Stack (Back Stack)

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## Text Book: Android Applications Development in 24 Hours

Hour 2: Understanding an Android Activity

### Listing 2.1 Starting ActivityB from Button Click (ActivityA.java)

```
public class ActivityA extends Activity {
    TextView t;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_a_layout);
        Button b = (Button)findViewById(R.id.button1);
        t = (TextView) findViewById (R.id.textView1);
        b.setOnClickListener(new OnClickListener() {
            public void onClick(View v) {
                Intent intent = new Intent(ActivityA.this, ActivityB.class);
                startActivity(intent);
            }
        });
    }
}
```

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## Text Book: Android Applications Development in 24 Hours

Hour 2: Understanding an Android Activity

### Listing 2.3 ActivityB Starting Activity A (ActivityB.java)

```
public class ActivityA extends Activity {
    TextView t;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_a_layout);
        Textview t = (TextView) findViewById (R.id.textView1);
        t.setText t = ("This is Activity B");
        Button b = (Button)findViewById(R.id.button1);
        b.setOnClickListener(new OnClickListener() {
            public void onClick(View v) {
                Intent intent = new Intent(ActivityB.this, ActivityA.class);
                startActivity(intent);
            }
        });
    }
}
```

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## Android Applications Development in 24

### Hours: Hour 2 Understanding an Android Activity

#### Passing Information Between Activities

- Using “Extra” data: Strings, Integers, Boolean
- Using “Bundle”: More complex data types
- **Listing 2.6 Adding data to an intent**

```
.... Button b = (Button)findViewById(R.id.button1);
    t = (TextView) findViewById (R.id.textView1);
    b.setOnClickListener(new OnClickListener() {
        public void onClick(View v) {
            Intent intent = new Intent(ActivityA.this, ActivityB.class);
            intent.setFlags(Intent.FLAG_ACTIVITY_NEW_TASK|Intent.FLAG_ACTIVITY_CLEAR_TOP);
            Bundle b = new Bundle();           b.putString("greeting", "Hello");
            intent.putExtra("greetingBundle", b); intent.putExtra("message", "World!");
            intent.putExtra("showAll", true);   intent.putExtra("numItems", 5);
            startActivity(intent); } });
```

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## Android Applications Development in 24

### Hours: Hour 2 Understanding an Android Activity

#### Passing Information Between Activities

- **Listing 2.7 Accessing Extra Data from an intent (ActivityB.java)**

```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_b_layout);
    TextView t = (TextView)findViewById(R.id.textView1);
    Intent intent = getIntent(); ....
    Bundle bundle = intent.getBundleExtra("greetingBundle");
    String greeting = bundle.getString("greeting");
    String message = intent.getStringExtra("message");
    Boolean showAll = intent.getBooleanExtra("showAll", false);
    int numItems = intent.getIntExtra("numItems", 0);
    t.setText("This is Activity B: " + greeting + " "
        + message + " " + showAll + " " + numItems);
}
}
```

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## Android Applications Development in 24

**Hours:** Hour 2 Understanding an Android Activity

Returning a Result: Using startActivityForResult

- Handle result and any data, An app that upload photos...

**Listing 2.8 Starting Code for Activity C (one EditText, two buttons, ActivityC.java)**

```
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_c_layout);
    final EditText e = (EditText)findViewById(R.id.editText1);
    Button send = (Button)findViewById(R.id.button1);
    send.setOnClickListener(new OnClickListener() {
        public void onClick(View v) {
            // add send button code here } });
    Button cancel = (Button)findViewById(R.id.button2);
    cancel.setOnClickListener(new OnClickListener() {
        public void onClick(View v) {
            // add cancel button code here } });
}
```

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## Android Applications Development in 24

**Hours:** Hour 2 Understanding an Android Activity

Returning a Result: Using startActivityForResult

- Handle result and any data, An app that upload photos...

**Listing 2.9 Returning Result from an Activity (ActivityC.java)**

```
send.setOnClickListener(new OnClickListener() {
    public void onClick(View v) {
        Intent result = new Intent();
        result.putExtra("Data", e.getText().toString());
        setResult (Activity.RESULT_OK, result);
        finish();
    }
});
```

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## Android Applications Development in 24

### Hours: Hour 2 Understanding an Android Activity

#### Understanding and Using Intents

- **Pass data to an activity, request a result from an activity**
  - Explicit intents – refers by class name
- **Implicit intents (specify action to take, not the activity to take):**
  - Retrieve an image from the file system; Take a picture with camera
- **Using Intents to launch other applications: Launching**
  - The built-in web browser and supplying a URL  
Uri address = Uri.parse("http://developer.android.com/");  
Intent androidDocs = new Intent(Intent.ACTION\_VIEW, address);  
startActivity(androidDocs);

## Android Applications Development in 24

### Hours: Hour 2 Understanding an Android Activity

#### Understanding and Using Intents

- **Using Intents to launch other applications: Launching**
  - The built-in web browser and supplying a URL
  - The web browser and supply a search string
  - The built-in phone dialer app and supplying a phone number
  - Built-in Map app and supplying a location
  - Google Street View and supplying a location
  - Built-in camera app in still or video mode
  - Ringtone picker
  - Recording a sound

# Summary