

CSE2216

Application Development Lab

Lab 3 : Events & Intents

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Contents

- Recap
- Event Management
- Manifests
- Intents - Explicit vs Implicit

Recap

- Activity vs Layout
- Designing Layouts
- XML Syntax
- [Views](#) - TextView, EditText, ImageView, Button

LinearLayout

- `Android:orientation = "vertical"`
- Width/height : 200dp vs `wrap_content` vs `match_parent`
- Evenly spacing out children : `layout_weight =1` and `height = 0dp`

ConstraintLayout

<https://developer.android.com/reference/androidx/constraintlayout/widget/ConstraintLayout>

Placing Resources

- Layout files in **res > layout > activity_name.xml**
- Drawable xml/images inside **res> drawable** folder
- Strings in **res > values> strings.xml**
- Colors in **res>values>colors.xml**

Spinner (Dropdown)

Adding Values in strings.xml

```
<string-array name="string_array_name">  
  <item>string_value1</item>  
  <item>string_value2</item>  
  <item>string_value3</item>  
  ...  
</string-array>
```

Drag & Drop a spinner from the design tab : Containers > Spinner

Using Values Spinner in activity_main.xml : android:entries="@array/string_array_name"

Reading selection in MainActivity.java:

```
Spinner gender = findViewById(R.id.spinner);  
String.valueOf(gender.getSelectedItem())
```

Event management

3 concepts



Event Listeners

How will I know something happened ?



Event Handlers

How to handle the event



Register Event Listener

Which handler for which event

Common Events

- `onClick`
- `onLongClick`
- `onFocusChange`
- `onKey`
- `onTouch`

Practice Task

Part 1 :

- Add an **EditText** to Enter Number of Guests
- Add 2 **buttons** on both side of that EditText - Increment & Decrement

Part 2:

- Add **EditText** to enter Budget for per participant
- Add a “Calculate” **Button** below
- Add a **TextView** “sum”.
- When clicked on Calculate button, show result in “sum” TextView

MANIFEST

App Components, Permissions &
Device Compatibility



App Components

```
<activity android:name=".MainActivity" ... >
```

```
...
```

```
</activity>
```



Permissions

```
<uses-permission  
android:name="android.permission.SEND_SMS"/>
```




Device Compatibility

```
<uses-feature  
  android:name="android.hardware.sensor.compass"  
  android:required="true" />
```

Intents

Explicit vs Implicit

Explicit Intent

Starting a new activity:

```
ok.setOnClickListener(new View.OnClickListener() {  
    public void onClick(View v) {  
        Intent i = new Intent(MainActivity.this,SecondActivity.class);  
        startActivity(i);  
    }  
});
```

14 Implicit Intents

<https://developer.android.com/guide/components/intents-common>

Alarm

Camera

Calendar

Contact

Email

File

Map

Media

Note

Call

Search

Settings

Text Message

Web Browser

Mail Intent

```
mailButton.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        Intent intent = new Intent(Intent.ACTION_SENDTO);  
        intent.setData(Uri.parse("mailto:")); // only email apps should handle this  
        intent.putExtra(Intent.EXTRA_EMAIL, new String[] { "fahim@cse.green.edu.bd" });  
        intent.putExtra(Intent.EXTRA_SUBJECT, "Clicked by Fahim");  
        intent.putExtra(Intent.EXTRA_TEXT, "We want to contact you");  
  
        //intent.setData(Uri.parse("mailto:fahim@cse.green.edu.bd"));  
        if(intent.resolveActivity(getPackageManager())!=null)  
        {  
            startActivity(intent);  
        }  
        else{  
            Toast.makeText(MainActivity.this, "fahim@cse.green.edu.bd", Toast.LENGTH_SHORT).show();  
        }  
    }  
});
```

Mail Intent (Zoomed In)

```
Intent intent = new Intent(Intent.ACTION_SENDTO);
intent.setData(Uri.parse("mailto:"));
intent.putExtra(Intent.EXTRA_SUBJECT, "Order for "+name);
Intent.putExtra(Intent.EXTRA_TEXT, price);
If(intent.resolveActivity(getPackageManager())!=null){
    startActivity(intent);
}
```

Calendar Intent

<https://itnext.io/android-calendar-intent-8536232ecb38>

```
val insertCalendarIntent = Intent(Intent.ACTION_INSERT)
    .setData(CalendarContract.Events.CONTENT_URI)
    ;.putExtra(CalendarContract.Events.TITLE, "TITLE") // Simple title
    .putExtra(CalendarContract.EXTRA_EVENT_ALL_DAY, false)
    .putExtra(CalendarContract.EXTRA_EVENT_BEGIN_TIME,startCalendarInstance) // Only date part is considered when ALL_DAY is
true; Same as DTSTART
    .putExtra(CalendarContract.EXTRA_EVENT_END_TIME,endTimeInMillis) // Only date part is considered when ALL_DAY is true
    .putExtra(CalendarContract.Events.EVENT_LOCATION, "Hong Kong")
    .putExtra(CalendarContract.Events.DESCRPTION, "DESCRIPTION") // Description
    .putExtra(Intent.EXTRA_EMAIL, "foolInviteeOne@gmail.com,foolInviteeTwo@gmail.com")

startActivity(insertCalendarIntent)
```

Bonus Task

Add a new EditText when + is clicked.

Hide it when - is clicked.

Tasks for Next Week

Arrays vs ArrayList

HashMap

Project Proposal

Thanks!



Any questions?

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