# CSE2216 Application Development Lab

Lab 3: Events & Intents

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- Recap
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### 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/constr

aintlayout/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

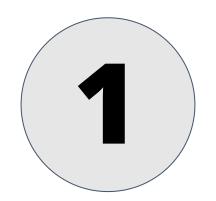
**Using Values Spinner in activity\_main.xml**: android:entries="@array/string\_array\_name"

### Reading selection in MainActivity.java:

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

### Event management

3 concepts



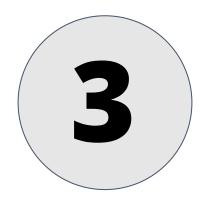
### **Event Listeners**

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**

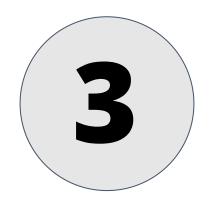
```
<activity android:name=".MainActivity" ... >
```

. . .

</activity>

# 2 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 Media

Camera Note

Calendar Call

Contact Search

**Email** Settings

File Text Message

Map 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(<u>"mailto:</u>"));
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.DESCRIPTION, "DESCRIPTION") // Description
 .putExtra(Intent.EXTRA EMAIL, "fooInviteeOne@gmail.com,fooInviteeTwo@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?

You can find me at

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