CS355

Mobile Application Development
การพัฒนาโปรแกรมประยุกต์สำหรับอุปกรณ์พกพา

Pakorn Leesutthipornchai, Ph.D.
Assistant Professor
ผศ.ดร.ปกรณ์ ลี้สุทธิพรชัย
pakornl@cs.tu.ac.th

COMPUTER SCIENCE
THAMMASAT UNIVERSITY
www.cs.tu.ac.th

MA08: Input Controls
การควบคุมข้อมูลรับเข้า

1

Input Controls

- ส่วนต่อประสานรับค่าจากผู้ใช้งาน application

- Android มีเครื่องมือให้ใช้งาน เพื่อรับค่าจากผู้ใช้
  - Button
  - Text Field (Text Box)
  - Checkbox
  - Radio Button
  - Toggle Button
  - Spinner
  - Picker
  - Rating Bar
  - Progress Bar

2

Button with Image


- ```
  <Button      android:layout_width="wrap_content"
               android:layout_height="wrap_content"
               android:text="@string/button_text"          />
  ```

- ```
  <ImageButton android:layout_width="wrap_content"
               android:layout_height="wrap_content"
               android:src="@drawable/button_icon"          />
  ```

- ```
  <Button      android:layout_width="wrap_content"
               android:layout_height="wrap_content"
               android:text="@string/button_text"
               android:drawableLeft="@drawable/button_icon"     />
  ```

3

Text Field (1)

1. ```
   <EditText   android:id="@+id/editText1"
   ```
2. ` android:layout_width="fill_parent"`
3. ` android:layout_height="wrap_content"`
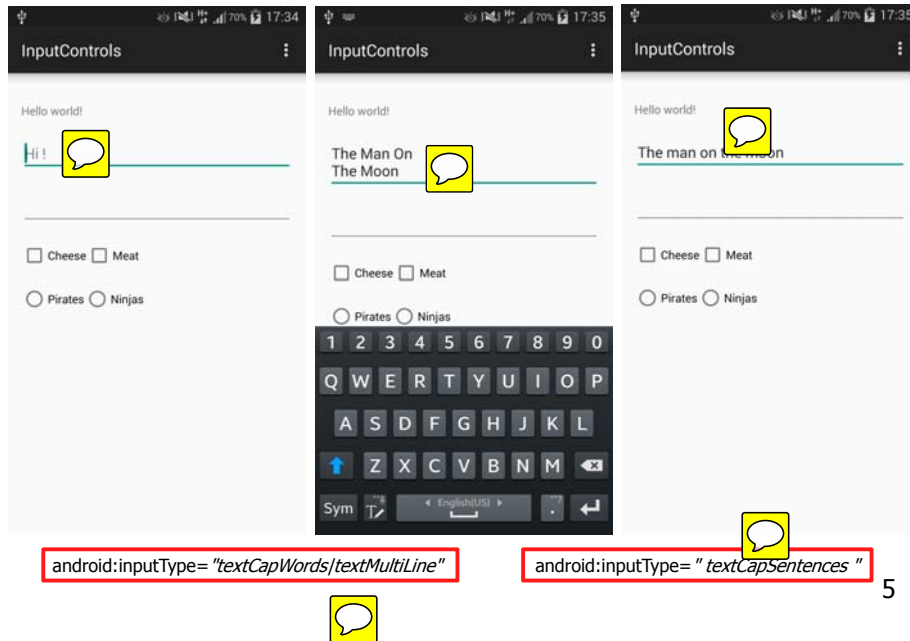4. ` android:hint="@string/hi"`
5. ` android:inputType="text" />`

- Input Type
  - text   : แสดง keyboard ปกติ
  - textEmailAddress : มี '@'
  - textUri   : มี '/'
  - number   : มีแต่ตัวเลข
  - phone   : key โทรศัพท์

Controlling Behavior
- textCapSentences
- textCapWords
- textPassword
- textMultiLine

Text Field (2)

android:inputType=*"textCapWords|textMultiLine"*

android:inputType=*" textCapSentences "*

Text Field with AutoComplete : Code


```
1.   @Override
2.   protected void onCreate(Bundle savedInstanceState) {
3.       super.onCreate(savedInstanceState);
4.       setContentView(R.layout.activity_main);
5.
6.       AutoCompleteTextView textView =
                   (AutoCompleteTextView) findViewById(R.id.autocompleteView);

7.       String[] countries = getResources().getStringArray(R.array.countries_array);

8.       ArrayAdapter<String> adapter = new ArrayAdapter<String>(this,
                       android.R.layout.simple_list_item_1,
                       countries);

9.       textView.setAdapter(adapter);
10.  }
```

Text Field with AutoComplete : Layout and strings.xml

res/values/activity_main.xml

```
<AutoCompleteTextView
    android:id="@+id/autocompleteView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="20dp" />
```

res/values/strings.xml

```
1.   <string-array name="countries_array">
2.       <item>Afghanistan</item>
3.       <item>Albania</item>
4.       <item>Algeria</item>
5.       <item>American Samoa</item>
6.       <item>Andorra</item>
7.       <item>Angola</item>
8.       <item>Anguilla</item>
9.       <item>Antarctica</item>
10.  </string-array>
```
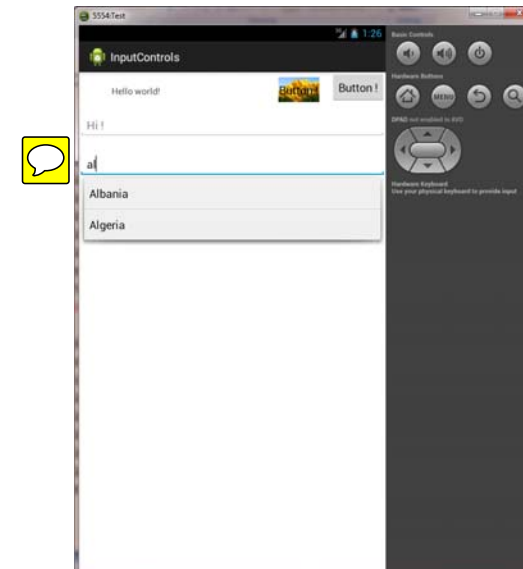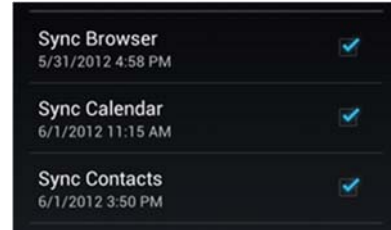

Text Field with AutoComplete

Checkbox : Code

```
1.  public void onCheckboxClicked(View view) {
2.          // Is the view now checked?
3.          boolean checked = ((CheckBox) view).isChecked();
4.          final TextView txtView=(TextView)findViewById(R.id.textView);
5.
6.          switch(view.getId()) {
7.              case R.id.checkbox_meat:
8.                  if (checked){
9.                    txtView.setText(" Meat ");
10.                 }else{
11.                   txtView.setText(" No Meat ");
12.                 }
13.                 break;
14.             case R.id.checkbox_cheese:
15.                 if (checked){
16.                   txtView.setText(" Cheese ");
17.                 }else{
18.                   txtView.setText(" No Cheese ");
19.                 }
20.                 break;
21.         }
22. }
```


Sync Browser
5/31/2012 4:58 PM

Sync Calendar
6/1/2012 11:15 AM

Sync Contacts
6/1/2012 3:50 PM

9

## Checkbox : Layout

```
1.  <CheckBox
2.          android:id="@+id/checkbox_cheese"
3.          android:layout_width="wrap_content"
4.          android:layout_height="wrap_content"
5.          android:onClick="onCheckboxClicked"
6.          android:text="@string/cheese" />

7.  <CheckBox
8.          android:id="@+id/checkbox_meat"
9.          android:layout_width="wrap_content"
10.         android:layout_height="wrap_content"
11.         android:onClick="onCheckboxClicked"
12.         android:text="@string/meat" />
```

10

Checkbox (1)
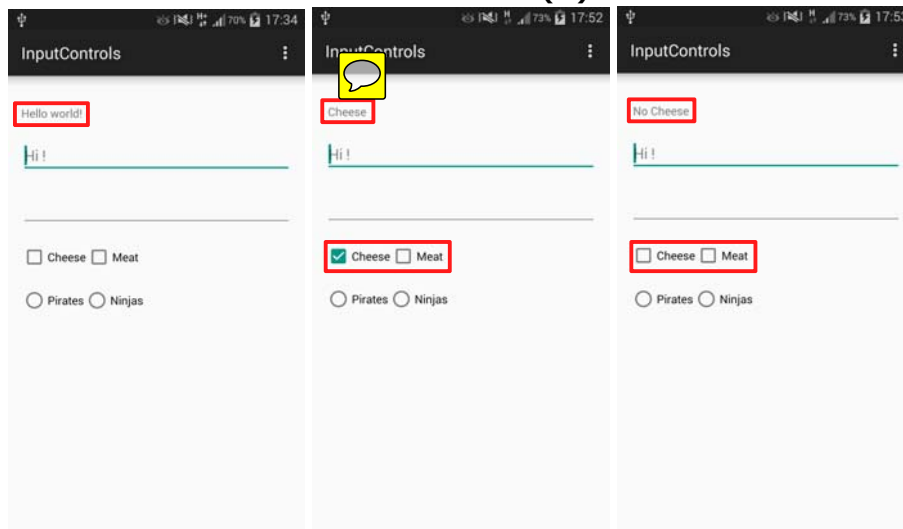
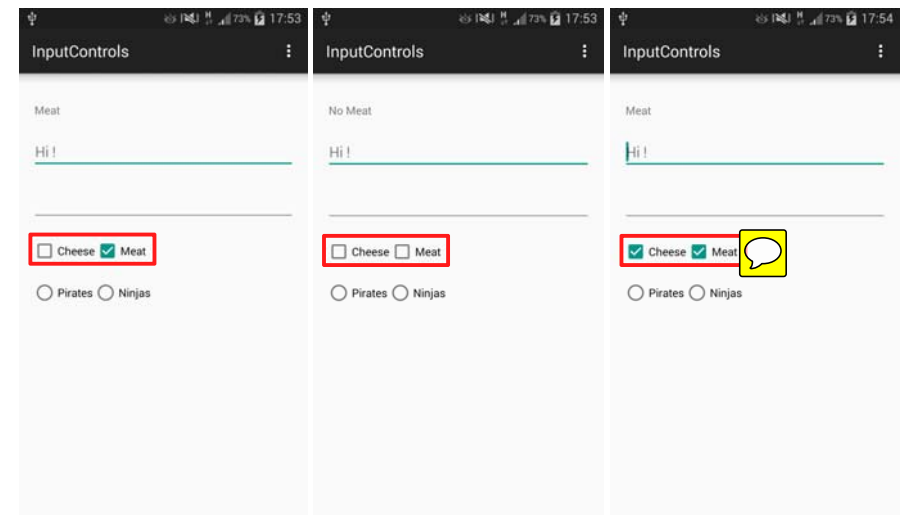เริ่มต้น   Select "Cheese"   Deselect "Cheese"

11

Checkbox (2)

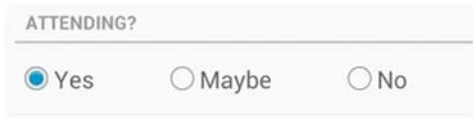Select "Meat"   Deselect "Meat"   Select both
                                                "Cheese" and "Meat"

12

Radio Button : Code


```
1.  public void onRadioButtonClicked(View view) {
2.      // Is the button now checked?
3.      boolean checked = ((RadioButton) view).isChecked();
4.      final TextView txtView=(TextView)findViewById(R.id.textView);
5.
6.      // Check which radio button was clicked
7.      switch(view.getId()) {
8.          case R.id.radio_pirates:
9.              if (checked)
10.                 txtView.setText(" Pirates ! ");
11.             break;
12.         case R.id.radio_ninjas:
13.             if (checked)
14.                 txtView.setText(" Ninjas ! ");
15.             break;
16.     }
17. }// end
```

13

## Radio Button : Layout

```
1.  <RadioGroup
2.      android:layout_width="match_parent"
3.      android:layout_height="wrap_content"
4.      android:orientation="horizontal"
5.      android:layout_marginTop="20dp" >
6.      <RadioButton
7.          android:id="@+id/radio_pirates"
8.          android:layout_width="wrap_content"
9.          android:layout_height="wrap_content"
10.         android:onClick="onRadioButtonClicked"
11.         android:text="@string/pirates" />
12.     <RadioButton
13.         android:id="@+id/radio_ninjas"
14.         android:layout_width="wrap_content"
15.         android:layout_height="wrap_content"
16.         android:onClick="onRadioButtonClicked"
17.         android:text="@string/ninjas" />
18. </RadioGroup>
```

14

Radio Button
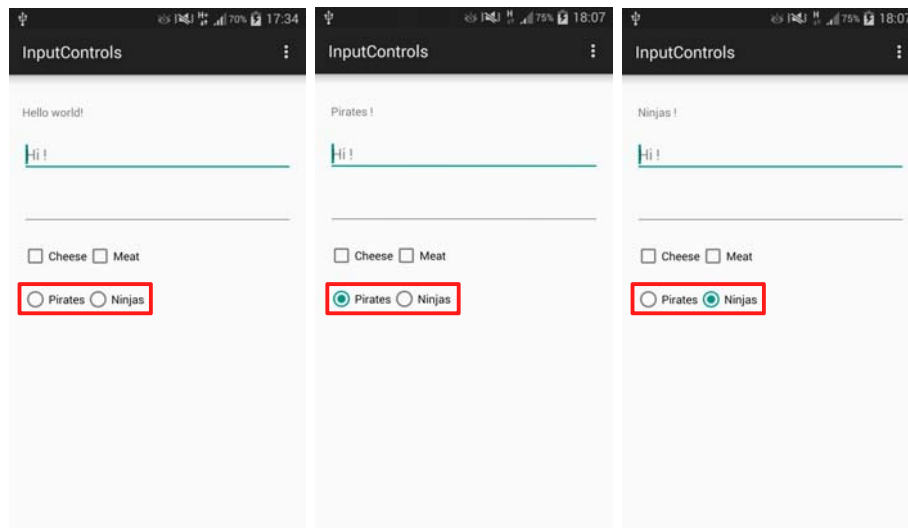
เริ่มต้น   Select "Pirates"   Select "Ninjas"

15

Toggle Button : Code (1)


```
1.  protected void onCreate(Bundle savedInstanceState) {
2.      super.onCreate(savedInstanceState);
3.      setContentView(R.layout.activity_main);
4.      ToggleButton toggle = (ToggleButton) findViewById(R.id.toggleButton1);
5.      toggle.setOnCheckedChangeListener(new
6.          CompoundButton.OnCheckedChangeListener() {
7.          public void onCheckedChanged(CompoundButton buttonView,
8.                                       boolean isChecked) {
9.              TextView text1 =(TextView)findViewById(R.id.textView);
10.             if (isChecked) {
11.                 text1.setText("Toggle ON");
12.             } else {
13.                 text1.setText("Toggle OFF");
14.             }
15.         }
16.     });
17. }
```

16

Toggle Button : Code (2)

```
18.  public void onToggleClicked(View view) {
19.      boolean on = ((ToggleButton) view).isChecked();
20.      TextView text1 =(TextView)findViewById(R.id.textView);
21.
22.      if (on) {
23.          text1.setText("Toggle ON");
24.      } else {
25.          text1.setText("Toggle OFF");
26.      }
27.  }
```

17

Toggle Button : Layout

```
1.   <ToggleButton
2.       android:id="@+id/toggleButton"
3.       android:layout_width="wrap_content"
4.       android:layout_height="wrap_content"
5.       android:layout_marginTop="20dp"
6.       android:onClick="onToggleClicked"
7.       android:textOff="Off"
8.       android:textOn="On" />

9.   <ToggleButton
10.      android:id="@+id/toggleButton1"
11.      android:layout_width="wrap_content"
12.      android:layout_height="wrap_content"
13.      android:layout_marginTop="20dp"
14.      android:textOff="Off"
15.      android:textOn="On"  />
```
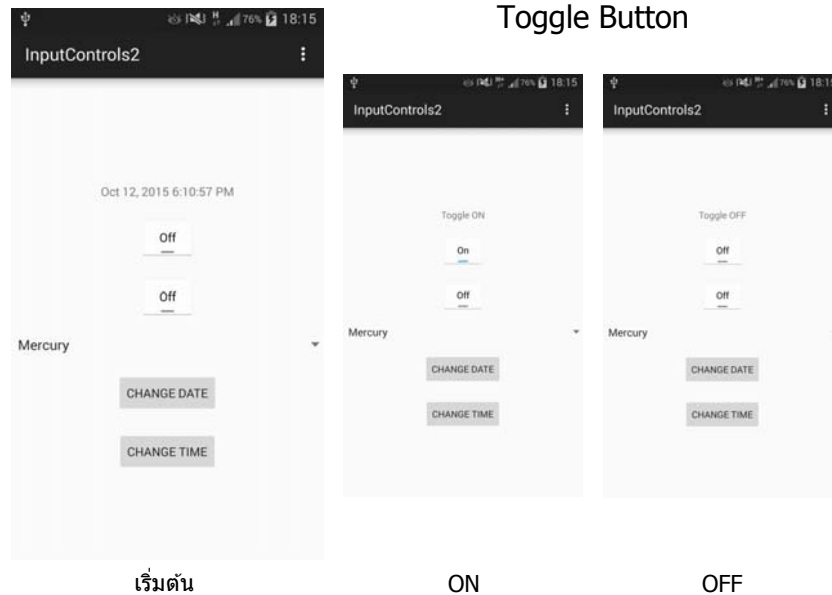
Implement Toggle Button แบบผูก function กับ Layout

Implement Toggle Button แบบผูก function กับ Code โดยใช้ event Listener

18

Toggle Button

เริ่มต้น   ON   OFF

19

Spinner : Code and Layout


```
Spinner
    android:id="@+id/planets_spinner"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="20dp" />
```

```
1.   protected void onCreate(Bundle savedInstanceState) {
2.       super.onCreate(savedInstanceState);
3.       setContentView(R.layout.activity_main);

4.       Spinner spinner = (Spinner) findViewById(R.id.planets_spinner);
5.       ArrayAdapter<CharSequence> adapter =
6.               ArrayAdapter.createFromResource(this,
7.               R.array.planets_array, android.R.layout.simple_spinner_item);
8.       adapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);
9.       spinner.setAdapter(adapter);
10.  }//end onCreate
```

20

Spinner : strings.xml

- res/values/strings.xml

```
1.    <string-array name="planets_array">
2.        <item>Mercury</item>
3.        <item>Venus</item>
4.        <item>Earth</item>
5.        <item>Mars</item>
6.        <item>Jupiter</item>
7.        <item>Saturn</item>
8.        <item>Uranus</item>
9.        <item>Neptune</item>
10.   </string-array>
```
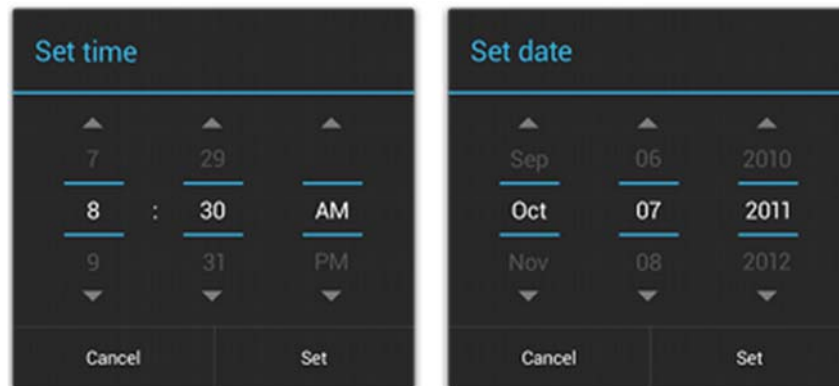
Spinner
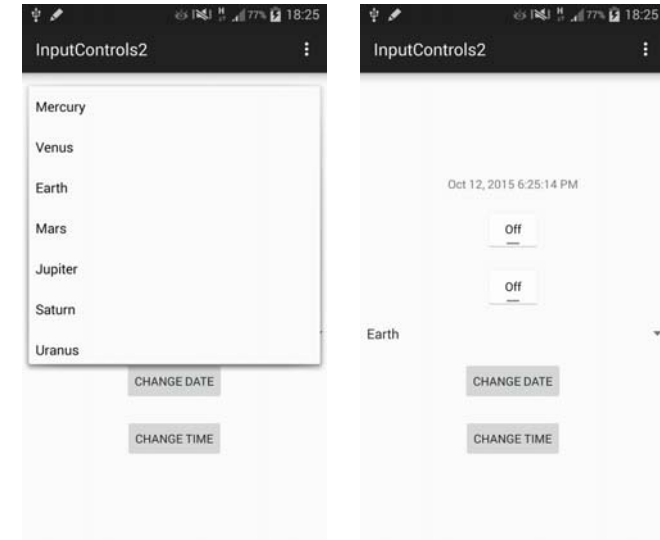
Time and Date Pickers

Picker: Code (1)

```
1.   DateFormat fmtDateAndTime = DateFormat.getDateTimeInstance();
2.   Calendar myCalendar = Calendar.getInstance();
3.   @Override
4.   protected void onCreate(Bundle savedInstanceState) {
5.        super.onCreate(savedInstanceState);
6.        setContentView(R.layout.activity_main);
7.        Button btnDate = (Button) findViewById(R.id.btnChangeDate);
8.        btnDate.setOnClickListener(new View.OnClickListener() {
9.             public void onClick(View v) {
10.                new DatePickerDialog(MainActivity.this, d,
11.                myCalendar.get(Calendar.YEAR), myCalendar.get(Calendar.MONTH),
12.                myCalendar.get(Calendar.DAY_OF_MONTH)).show();
13.            }
14.       });
15.       Button btnTime = (Button) findViewById(R.id.btnChangeTime);
16.       btnTime.setOnClickListener(new View.OnClickListener() {
17.            public  void onClick(View v) {
18.                new TimePickerDialog(MainActivity.this, t,
19.                myCalendar.get(Calendar.HOUR_OF_DAY),
20.                myCalendar.get(Calendar.MINUTE), true).show();
21.            }
22.       });
23.  updateLabel();
24.  }// end onCreate
```

Picker : Code (2)

```
25.  DatePickerDialog.OnDateSetListener d = new DatePickerDialog.OnDateSetListener() {
26.  public void onDateSet(DatePicker view, int year, int monthOfYear, int dayOfMonth) {
27.      myCalendar.set(Calendar.YEAR, year);
28.      myCalendar.set(Calendar.MONTH, monthOfYear);
29.      myCalendar.set(Calendar.DAY_OF_MONTH, dayOfMonth);
30.      updateLabel();
31.  }
32.  };

33.  TimePickerDialog.OnTimeSetListener t = new TimePickerDialog.OnTimeSetListener() {
34.  public void onTimeSet(TimePicker view, int hourOfDay, int minute) {
35.      myCalendar.set(Calendar.HOUR_OF_DAY, hourOfDay);
36.      myCalendar.set(Calendar.MINUTE, minute);
37.      updateLabel();
38.  }
39.  };

40.  private void updateLabel() {
41.      TextView text1 =(TextView)findViewById(R.id.textView);
42.      text1.setText(fmtDateAndTime.format(myCalendar.getTime()));
43.  }
```

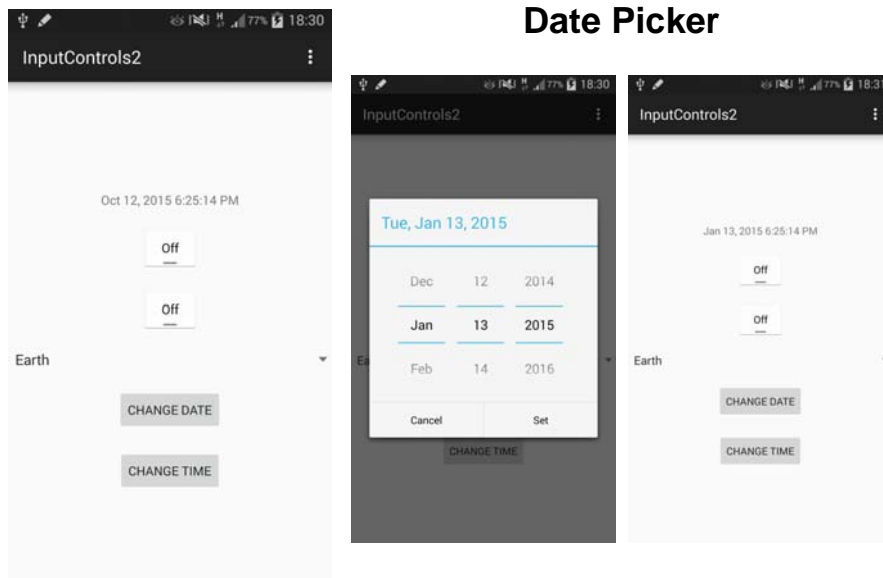# Picker : Layout

```
1.   <Button
2.       android:id="@+id/btnChangeDate"
3.       android:layout_width="wrap_content"
4.       android:layout_height="wrap_content"
5.       android:layout_marginTop="20dp"
6.       android:text="@string/change_date" />

7.   <Button
8.       android:id="@+id/btnChangeTime"
9.       android:layout_width="wrap_content"
10.      android:layout_height="wrap_content"
11.      android:layout_marginTop="20dp"
12.      android:text="@string/change_time" />
```
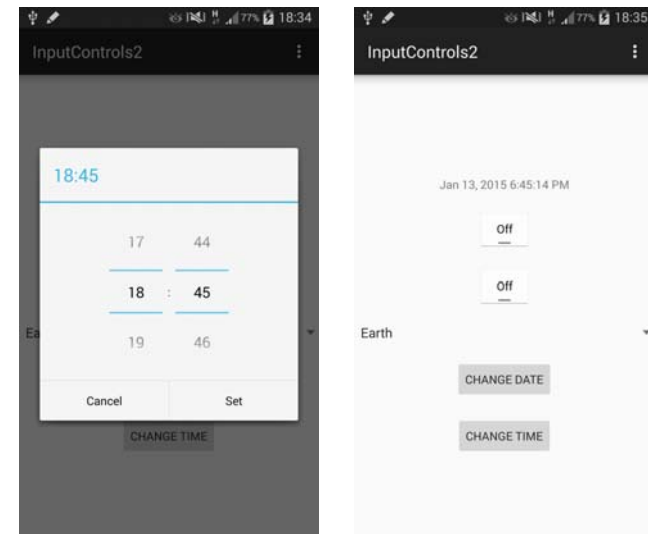
Date Picker

Time Picker

Rating Bar

Layout:

```xml
<RatingBar
    android:id= "@+id/ratingBar"
    android:layout_width= "wrap_content"
    android:layout_height= "wrap_content"
    android:numStars= "4"
    android:stepSize= "1.0"
    android:rating= "2.0" />
```
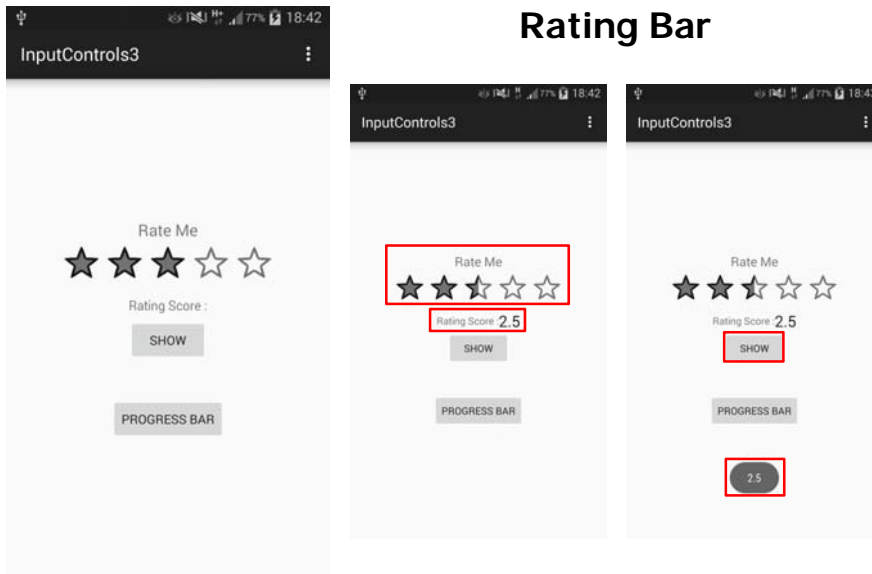

Rating Bar : Code

```java
1.  final TextView txtView = (TextView) findViewById(R.id.textRatingValue);
2.  final RatingBar ratingBar = (RatingBar) findViewById(R.id.ratingBar);
3.  final Button btnShow = (Button) findViewById(R.id.btnShow);

4.  ratingBar.setOnRatingBarChangeListener(new OnRatingBarChangeListener() {
5.      public void onRatingChanged(RatingBar ratingBar, float rating, boolean fromUser) {
6.          txtView.setText(String.valueOf(rating));
7.      }
8.  });

9.  btnShow.setOnClickListener(new OnClickListener() {
10.     @Override
11.     public void onClick(View v) {
12.         Toast.makeText(MainActivity.this,String.valueOf(ratingBar.getRating()),
13.                 Toast.LENGTH_SHORT).show();
14.     }
15. });
```
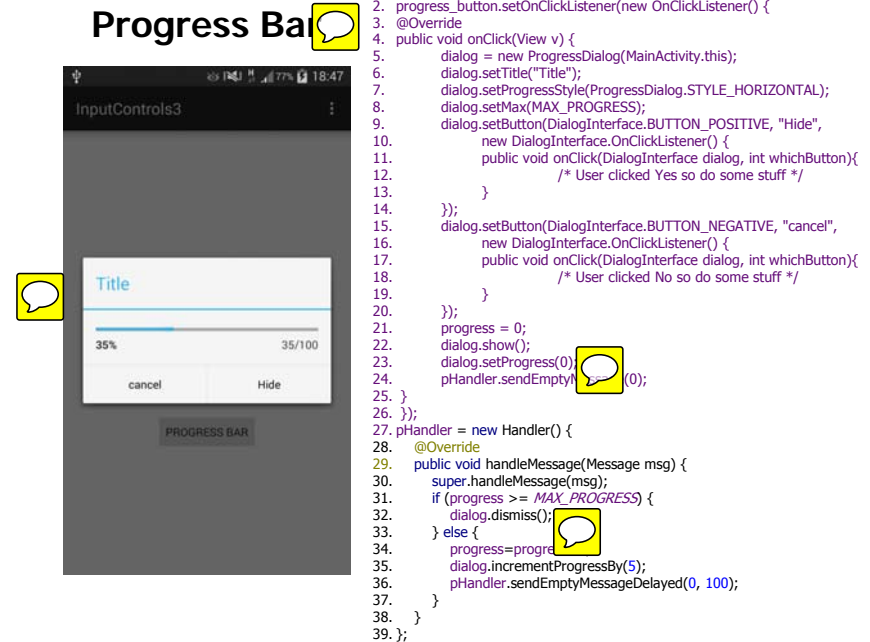

Rating Bar

Progress Bar


```java
1.  final Button progress_button = (Button) findViewById(R.id.progessBar);
2.  progress_button.setOnClickListener(new OnClickListener() {
3.      @Override
4.      public void onClick(View v) {
5.          dialog = new ProgressDialog(MainActivity.this);
6.          dialog.setTitle("Title");
7.          dialog.setProgressStyle(ProgressDialog.STYLE_HORIZONTAL);
8.          dialog.setMax(MAX_PROGRESS);
9.          dialog.setButton(DialogInterface.BUTTON_POSITIVE, "Hide",
10.             new DialogInterface.OnClickListener() {
11.             public void onClick(DialogInterface dialog, int whichButton){
12.                 /* User clicked Yes so do some stuff */
13.             }
14.         });
15.         dialog.setButton(DialogInterface.BUTTON_NEGATIVE, "cancel",
16.             new DialogInterface.OnClickListener() {
17.             public void onClick(DialogInterface dialog, int whichButton){
18.                 /* User clicked No so do some stuff */
19.             }
20.         });
21.         progress = 0;
22.         dialog.show();
23.         dialog.setProgress(0);
24.         pHandler.sendEmptyM      (0);
25.     }
26. });
27. pHandler = new Handler() {
28.     @Override
29.     public void handleMessage(Message msg) {
30.         super.handleMessage(msg);
31.         if (progress >= MAX_PROGRESS) {
32.             dialog.dismiss();
33.         } else {
34.             progress=progre
35.             dialog.incrementProgressBy(5);
36.             pHandler.sendEmptyMessageDelayed(0, 100);
37.         }
38.     }
39. };
```

References

- http://developer.android.com
- http://www.java-samples.com/showtutorial.php?tutorialid=1520

- mkyong, Android Rating Bar Example,
  Posted on November 27, 2011 ,   Last modified : August 29, 2012
  http://www.mkyong.com/android/android-rating-bar-example/

- Pavan Deshpande, Android Bar Styled Progress Dialog Example,
  http://www.pavanh.com/2013/04/android-progress-dialog-example.html

Input Controls for iOS (1/7)
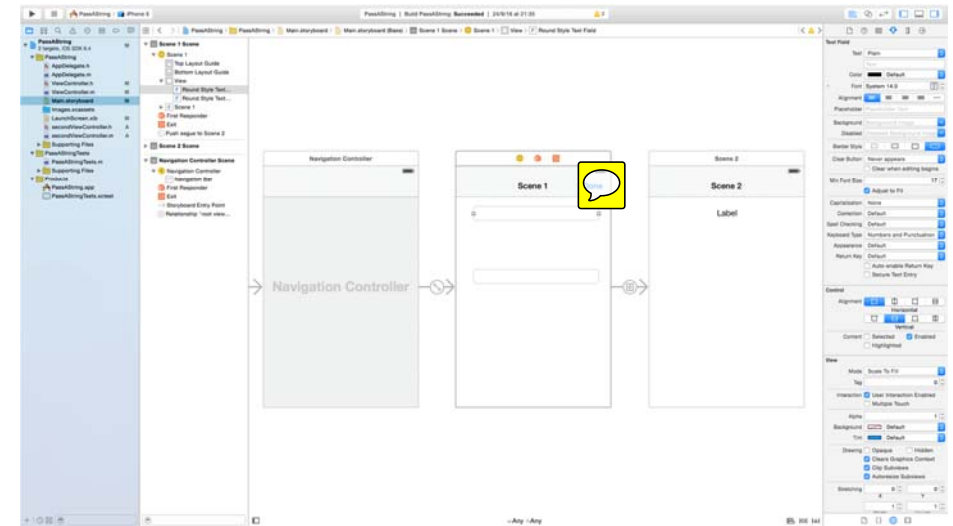
Input Controls for iOS (2/7)
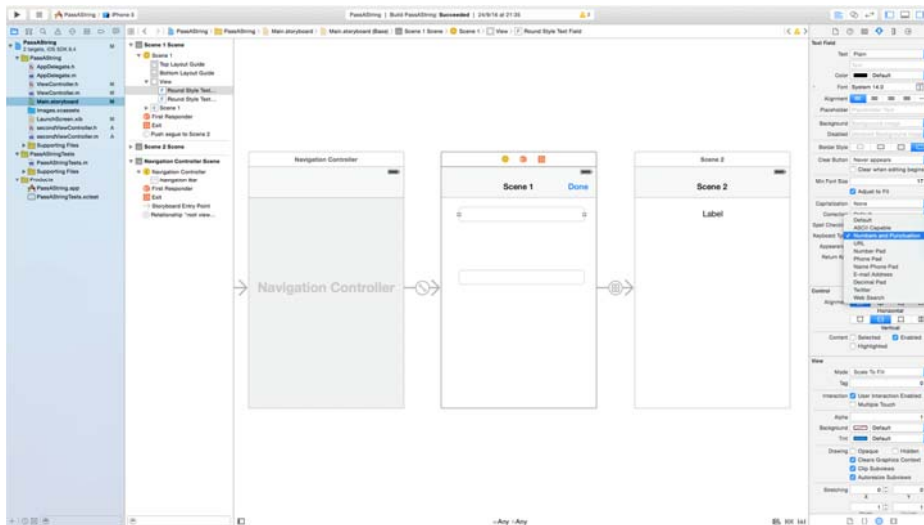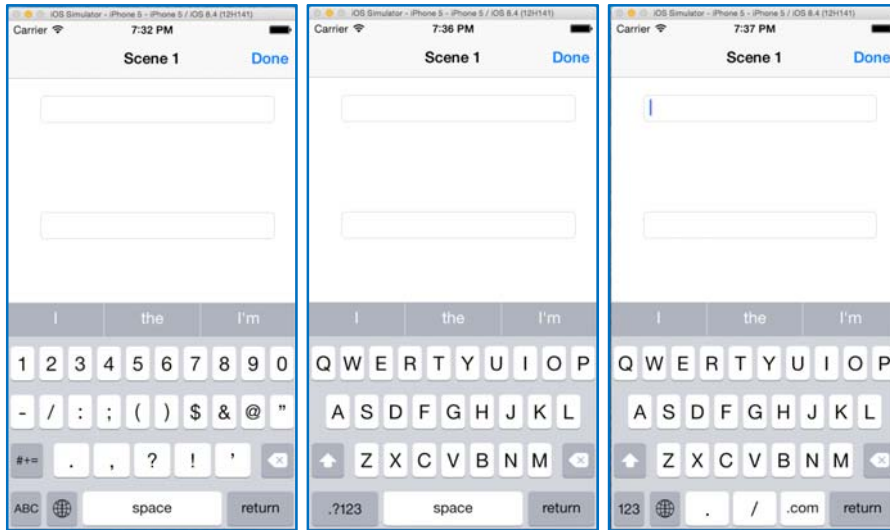
Input Controls for iOS (3/7)
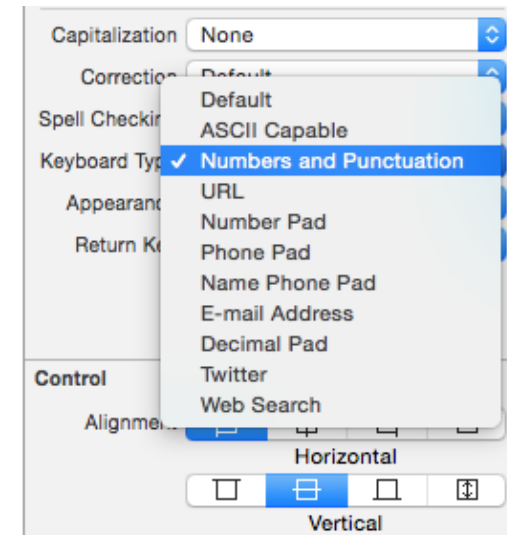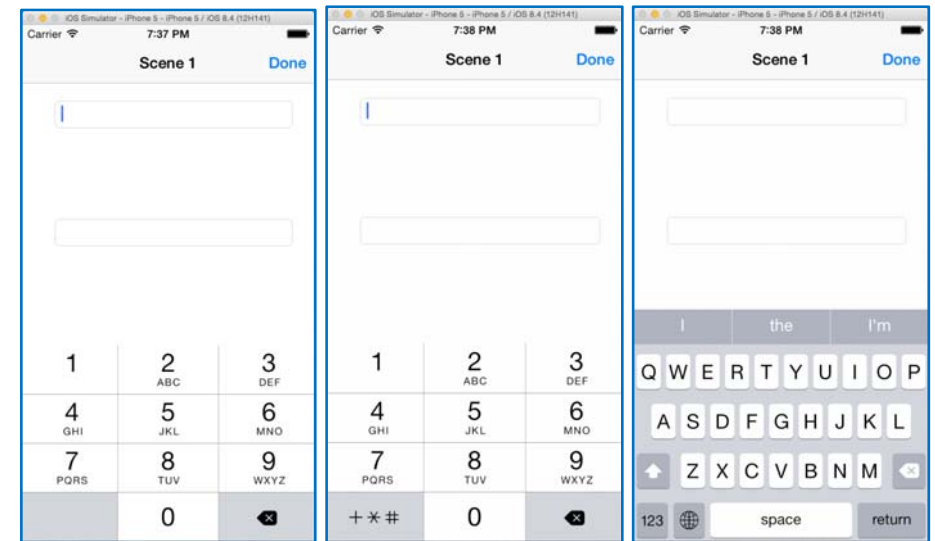
Input Controls for iOS (4/7)

Numbers & Punctuation   ASCII Capable   URL
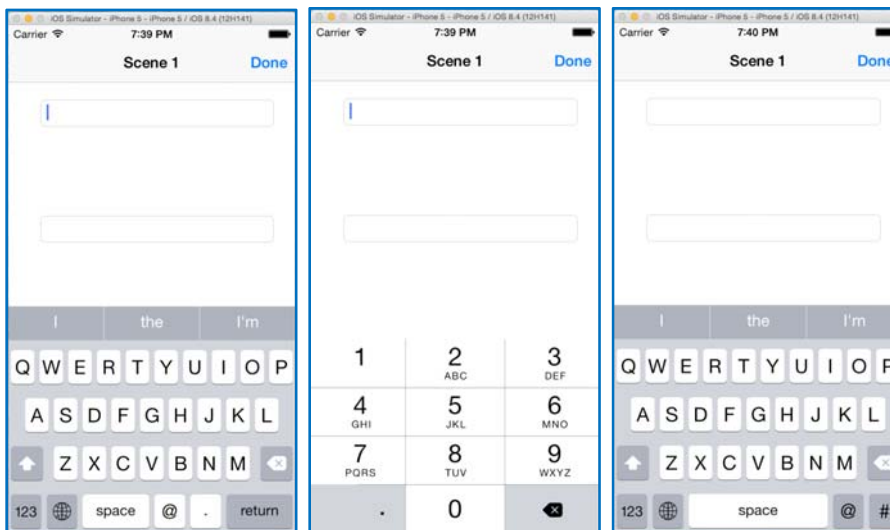
37

Input Controls for iOS (5/7)

Number Pad   Phone Pad   Name Phone Pad

38

Input Controls for iOS (6/7)

E-mail Address   Decimal Pad   Twitter

39

Input Controls for iOS (7/7)

Web Search

40