

POSIT/ANDROID

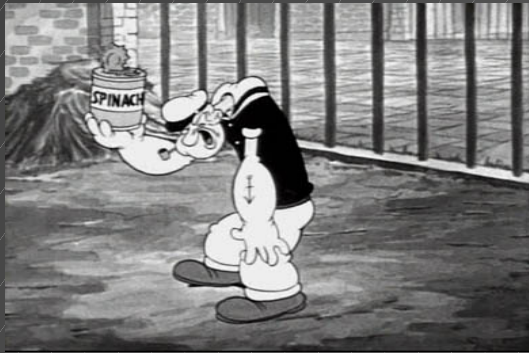
Antonio Alcorn

Gong Chen

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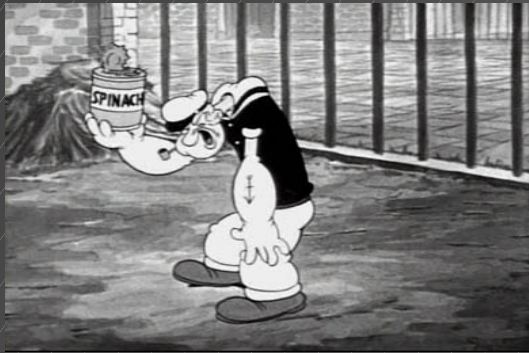
Our Mission:

- To build out POSIT into a more ROBUST, user-friendly application



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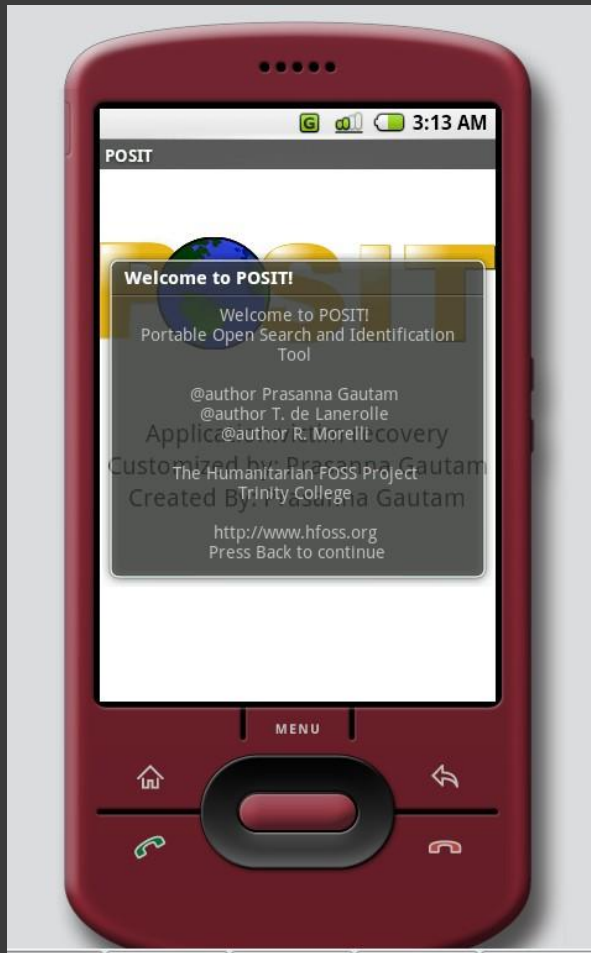
- To build out POSIT into a more ROBUST, user-friendly application



Refresher: What is Android?

- Mobile Application Platform
- Java based
- Different applications based on Activity class
- Applications run in own Unix process in own virtual machine

About POSIT



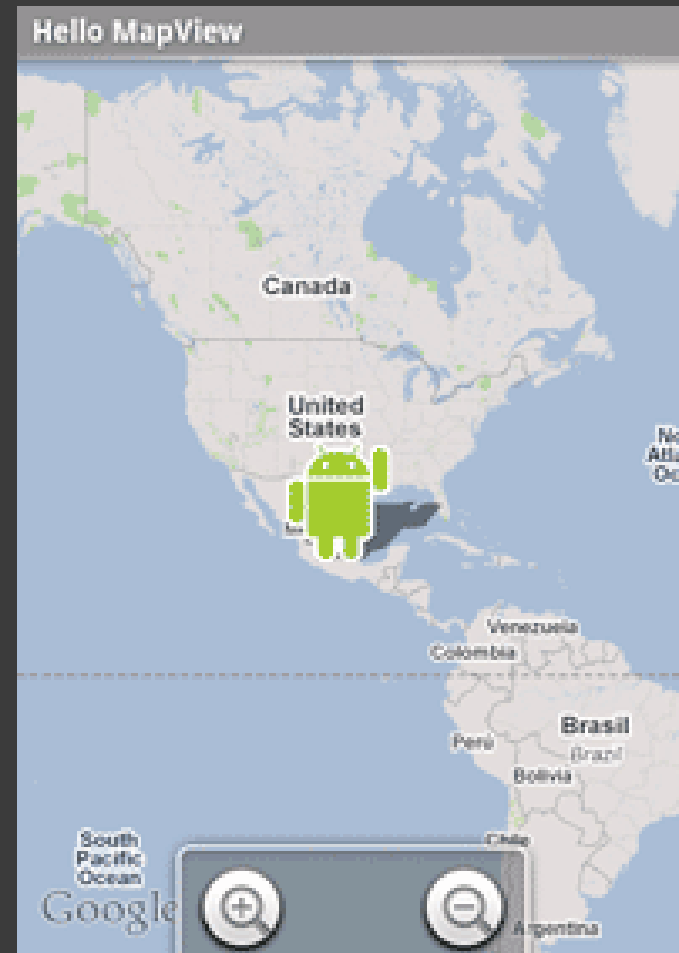
- Portable Open Search and Identification Tool
- Built on the Google Android platform
- Written by Prasanna Gautam, Trishan deLanerolle and Professor Ralph Morelli

Our Main Goals

- Build out POSIT and turn it into a Robust Application
- Build a better interface with the server
- Allow the phone to synchronize well with the server
- Build a more user-friendly interface
- Change the architecture to MVC
- Implement interface of ad hoc network

This Week: Tutorials

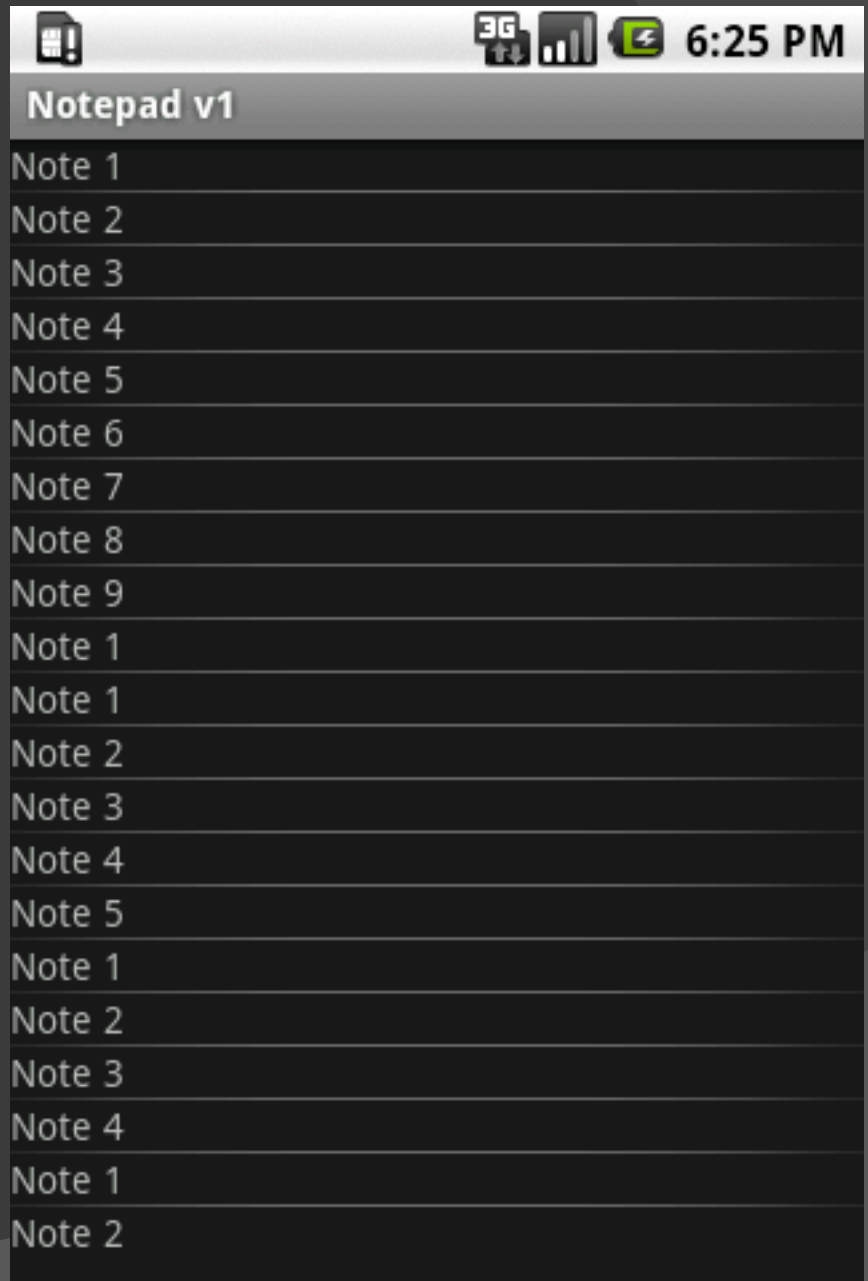
- Database
- Google maps
- Camera
- Gallery
- GPS



NotePad v.1

- Basic activity shell
- Little functionality

```
public class Notepadv1 extends ListActivity {  
    ...  
  
    /** Called when the activity is first created. */  
    @Override  
    public void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.notepad_list);  
        mDbHelper = new NotesDbAdapter(this);  
        mDbHelper.open();  
        fillData();  
    }  
    ...  
}
```

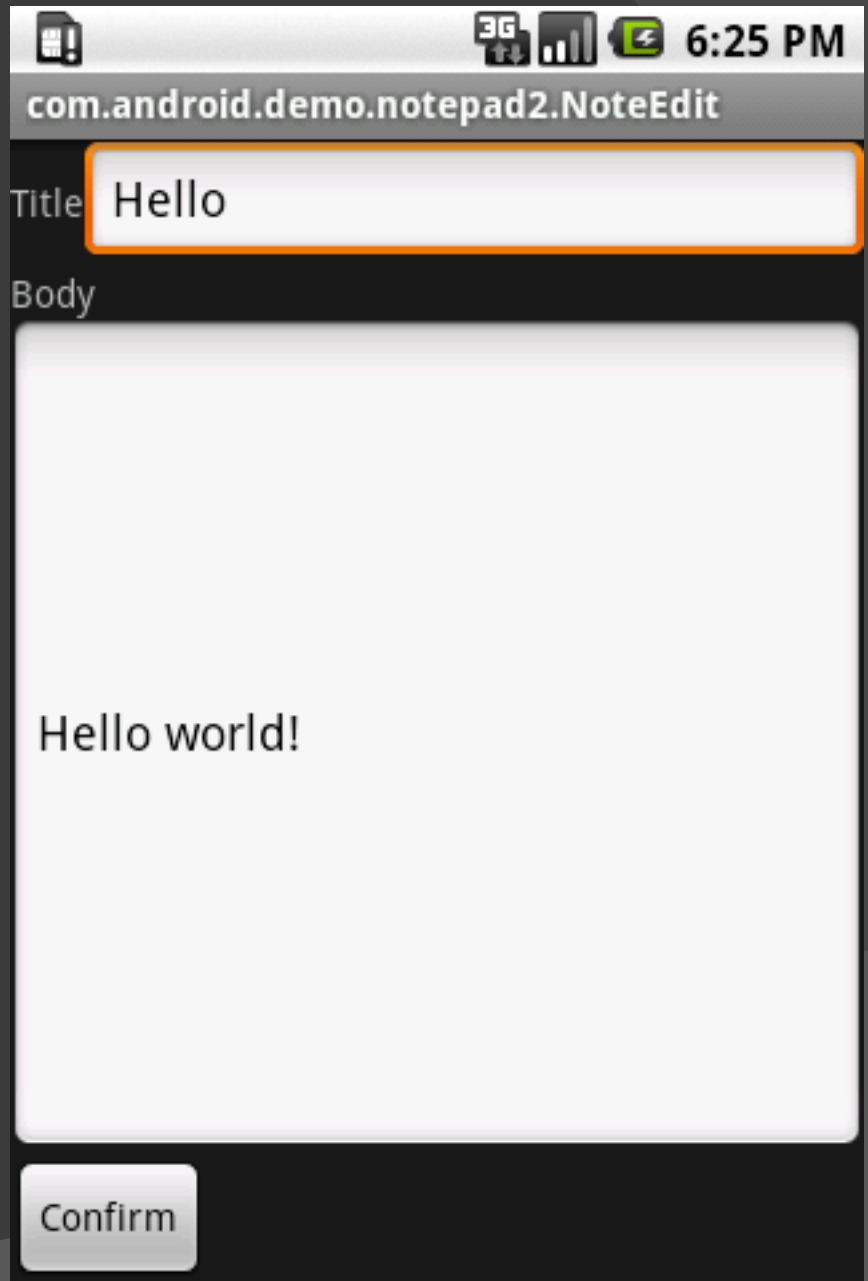


NotePad v.2

- Edit note content
- Save in database

```
public long createNote(String title, String body) {
    ContentValues initialValues = new
        ContentValues();
    initialValues.put(KEY_TITLE, title);
    initialValues.put(KEY_BODY, body);

    return mDb.insert(DATABASE_TABLE,
        null, initialValues);
}
...
public boolean onCreateOptionsMenu(Menu menu) {
    ...
    menu.add(0, INSERT_ID, 0, R.string.menu_insert);
    return true;
}
```



NotePad v.3

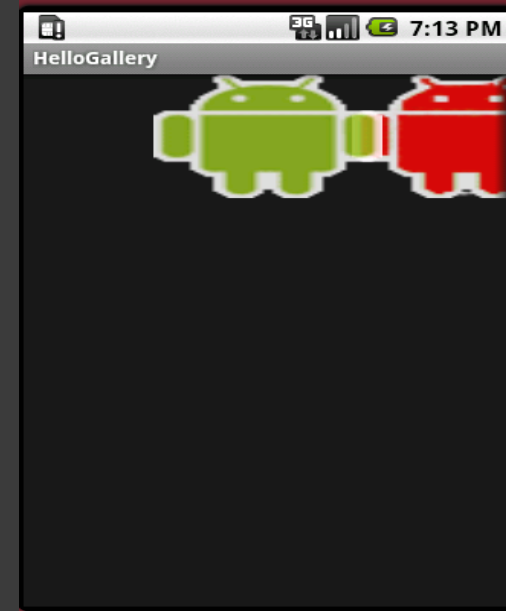
- Lifecycle management
- Interruption doesn't crash, saves state
- The “android way”

```
private void createNote() {
    Intent i = new Intent(this, NoteEdit.class);
    startActivityForResult(i, ACTIVITY_CREATE);
}

...

@Override
protected void onActivityResult(int requestCode, int resultCode,
                                Intent intent) {
    super.onActivityResult(requestCode, resultCode, intent);
    fillData();
}
```

Tutorial: Gallery



```
public Object getItem(int position) {  
    return position;  
}  
  
public long getItemId(int position) {  
    return position;  
}  
  
public View getView(int position, View convertView, ViewGroup parent) {  
    ImageView i = new ImageView(mContext);  
  
    i.setImageResource(mImageIds[position]);  
    i.setLayoutParams(new Gallery.LayoutParams(150, 100));  
    i.setScaleType(ImageView.ScaleType.FIT_XY);  
    i.setBackgroundResource(mGalleryItemBackground);  
  
    return i;  
}
```

Tutorial: Gallery cont

```
public class ImageAdapter extends BaseAdapter {  
    int mGalleryItemBackground;  
    private Context mContext;  
  
    private Integer[] mImageIds = {  
        R.drawable.sample_1,  
        R.drawable.sample_2,  
        R.drawable.sample_3,  
        R.drawable.sample_4  
    };  
};
```

Tutorial: Gallery cont

```
public ImageAdapter(Context c) {  
    mContext = c;  
    /*TypedArray a =  
    obtainStyledAttributes(android.R.styleable.Theme);  
    mGalleryItemBackground = a.getResourceId(  
android.R.styleable.Theme_galleryItemBackground, 0);  
    a.recycle();*/  
}
```

Tutorial: Gallery cont

```
public Object getItem(int position) {
    return position;
}

public long getItemId(int position) {
    return position;
}

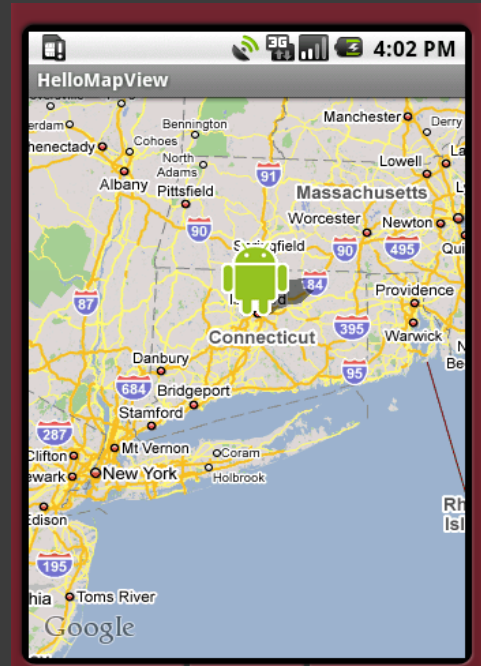
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    ImageView i = new ImageView(mContext);

    i.setImageResource(mImageIds[position]);
    i.setLayoutParams(new Gallery.LayoutParams(150, 100));
    i.setScaleType(ImageView.ScaleType.FIT_XY);
    i.setBackgroundResource(mGalleryItemBackground);

    return i;
}
```

Tutorial: Map View

- Allow user to see map and preset markers
- Allow user to create marker for self in current location



Tutorial: Map View cont.

```
private void setCurrentGpsLocation(Location location) {
    if (location == null) {
        mLocationManager = (LocationManager) getSystemService(LOCATION_SERVICE);
        mLocationManager.requestLocationUpdates(
            LocationManager.GPS_PROVIDER, 15000, 0, this);
        location = mLocationManager.getLastKnownLocation(LocationManager.GPS_PROVIDER);
    }

    try {
        mLongitude = location.getLongitude();
        mLatitude = location.getLatitude();
        Log.i(TAG, "<long,lat> = <" + mLongitude + "," + mLatitude);
        Message msg = Message.obtain();
        msg.what = UPDATE_LOCATION;
        HelloMapView.this.updateHandler.sendMessage(msg);
    } catch (NullPointerException e) {
        Log.i(TAG, "Null pointer exception " + mLongitude + "," + mLatitude);
    }
}
```


Tutorial: Map View cont

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private void setCurrentGpsLocation(Location location) {
    if (location == null) {
        mLocationManager = (LocationManager) getSystemService(LOCATION_SERVICE);
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}
```

Next Week:

- Camera Tutorial
- Start looking at POSIT
- Small tasks in POSIT
- Get acquainted with our phones!

