Objective

• Conclusion

• Course Evaluation

• Next Courses

• Project Presentations
Publish to Android Market
The Checklist

• Have I tested my application extensively?
  ➤ Emulator + Physical device
  ➤ Multiple hardware devices running different Android versions.

• Does my application perform well?
  ➤ Performance is really important especially in games

• Have I decided on SDK compatibility?
  ➤ Android 2.2 & 2.3 dominate?
Getting your application ready

• Step 1: Request necessary Android permissions
  ➤ Make sure that you’re requesting all necessary permissions, otherwise your application won’t work.

```xml
<uses-permission android:name="android.permission.VIBRATE"/>
<uses-permission android:name="android.permission.INTERNET"/>
<uses-permission android:name="android.permission.REBOOT"/>
```

• Step 2: Specify a name and icon
  ➤ Name your application and give it an icon using the **android:label** and **android:icon** attribute in the application tag

```xml
<application android:label="@string/app_name" android:icon="@drawable/myIcon">
```
Getting your application ready

• Step 3: Configure version manifest data
  ➤ Pick a version your application using `android:versionCode` and `android:versionName`.
  ➤ `versionCode` is an integer that *must* increment for every update.
  ➤ `versionName` is a user-friendly value (e.g., 0.1 or 1.0b or 2.4.1)

```
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
  package="com.example" android:versionCode="1"
  android:versionName="1.0.0">
```
Getting your application ready

• Step 4: Set compatibility options
  ➤ If you’re utilizing Android features that aren’t available in older versions → specify a set of version requirements within `uses-sdk`.
  ➤ `android:minSdkVersion` The minimum Android platform API level on which your application will be able to run.
  ➤ `android:targetSdkVersion` The API level that your application was designed to run on.
  ➤ `android:maxSdkVersion` An upper limit for compatibility. Don’t set this unless you have a very good reason to.

• Step 5: Cleanup files and remove logging
Getting your application ready

• Step 6: Sign and ZIP-align your application
  ➤ Android applications must be digitally signed with a certificate that the developer holds to ensure the authenticity.
  ➤ Pick a strong password for your private key and ensure to keep it safe
  ➤ Eclipse by default signs compiled apps with debug key.
  ➤ Use Export Wizard:
    1. Select the project and select File > Export.
    2. Open the Android drop-down and select Export Android Application
    3. Follow the wizard’s steps to compile, sign and ZIP-align your application.

Create a new one for the first time or use an existing one.

Your validity period must extend 2033 or else the Android Market will reject your app!
Becoming a Market publisher

• Registration

1. Register as a publisher and setup your profile.
   ➤ [http://market.android.com/publish](http://market.android.com/publish) and sign in with your Google account
   ➤ Fill out all the required information along with your real phone number
   ➤ Note: you can always change “developer name” later via your profile page

2. Read and agree to the Android Market Developer Distribution Agreement.

   ➤ Click the Google Checkout button and pay the one-time registration fee
Becoming a Market publisher

• Uploading an application
  ➤ Login to your publisher account and click “Upload an Application”.
  ➤ Fill in all of the form data and include screenshots if you can and provide a precise, short and well-formatted description.
  ➤ You can also choose whether or not you want to release it as a free or paid app.
  ➤ Click “Publish.”

Congratulations, you’ve just successfully published an application to the Android Market!
Conclusion
Why Android Smart Phones?

| Worldwide Mobile Communications Device Open OS Sales to End Users by OS (thousands of units) |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|
| OS                              | 2010            | 2011            | 2012            | 2015            |
| Symbian                         | 111,577         | 89,930          | 32,666          | 661             |
| Market Share (%)                | 37.6            | 19.2            | 5.2             | 0.1             |
| Android                         | 67,225          | 179,873         | 310,088         | 539,318         |
| Market Share (%)                | 22.7            | 38.5            | 49.2            | 48.8            |
| Research in Motion              | 47,452          | 62,600          | 79,335          | 122,864         |
| Market Share (%)                | 16.0            | 13.4            | 12.6            | 11.1            |
| iOS                             | 46,598          | 90,560          | 118,848         | 189,924         |
| Market Share (%)                | 15.7            | 19.4            | 18.9            | 17.2            |
| Microsoft                       | 12,378          | 26,346          | 68,156          | 215,998         |
| Market Share (%)                | 4.2             | 5.6             | 10.8            | 19.5            |
| Other Operating Systems         | 11,417.4        | 18,392.3        | 21,383.7        | 36,133.9        |
| Market Share (%)                | 3.8             | 3.9             | 3.4             | 3.3             |
| Total Market                    | 296,647         | 467,701         | 630,476         | 1,104,898       |
Why Android Smart Phones?

Chart by The Mac Observer, from Gartner data
Topics Covered

• Basics
  • Android Activities
  • Android Intents
  • User Interface / Views
  • User Notifications

• Fundamentals
  • Shared Preferences
  • Data Files
  • SQLite
  • Content Provider

• Working in Background
  • Services
  • BroadcastReceiver
  • AsyncTask

• Android Sensors
  • Sensor Manager
  • Sensor Types

• Location & Maps
  • MapViews
  • Google Maps

• Overlays
  • Location Services
Topics Covered

• Audio & Video
  • Playing Audio/Video
  • Recording Audio/Video
  • Speech Recognition
  • Location Services

• Networking - Bluetooth
  • Managing Bluetooth
  • Device Discovery
  • Bluetooth Communication
  • Handling incoming SMS

• Advanced Topics
  • Web Browsing
  • Cloud Backup

• Telephony, SMS & MMS
  • Initiating phone calls
  • Query/monitor phone/SIM
  • Sending SMS/MMS
  • Handling incoming SMS

• Networking - WiFi
  • Network Connectivity
  • Manage/Configure WiFi
  • WiFi Scan

• Android Animation
  • Publish on AppMarket
CS 795/895 – Smart Environments Seminar
The Future

- RFID and Sensor Networks
- Citywatchers, Walmart
- Intel, Philips, Bosch …
- Personal Area Networks
- Motorola, Intel, Samsung …
- Mesh Networks and Wireless Backbones
- Microsoft, Intel, Cisco …
- Internet
The Real Future
Course Workload

• Class presentations and open discussions
  ➤ Each student will be required to present 2-3 papers in the entire semester

• Research term-project implementation
  ➤ In groups of 2 (max 3).

• No Exam
Course Evaluation
Student Opinion Survey

• ODU Survey:
  • Students are notified via email that they can provide feedback on the course.
    • The email to students contains a web link to the survey
  • Can also access the Student Opinion Survey from the University's Current Students page:
    • Go to http://www.odu.edu
    • Click Current Students
    • Click Student Opinion Survey (under Academics)
  • Feedback is anonymous

• In-class Survey.