

?



mobile application design

week 6: Where am I?

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Menu

- **Presentation**
- **Review: Homework, Setup**
- **Tips'n'tricks: XML styles**
- **Location overview**
- **iDEN SDK Walk Thru**
- **GPS Demo**

Presentation

Homework

Tips'n'tricks: XML Edition

Check The Details

XML Parsing Error: mismatched tag. Expected: </description>.
Location: http://uberthings.com/teaching/mobile_application_design/5/fake_make_bad.xml
Line Number 907, Column 3:

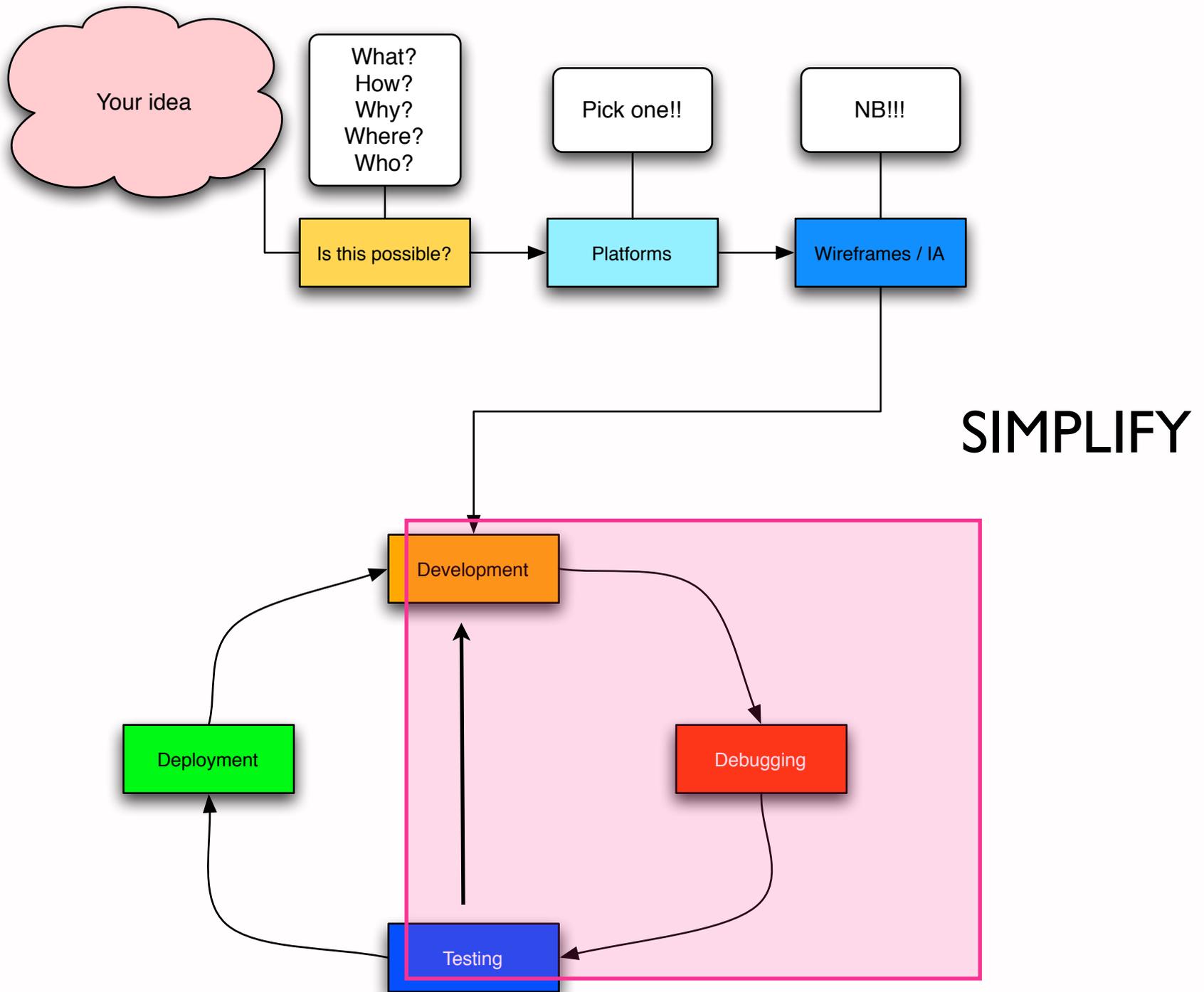
```
</item>  
--^
```

```
716
717 </item>
718
719 <item>...
736
737 <item>...
756
757 <item>...
777
778 <item>...
797
798 <item>...
820
821 <item>...
840
841 <item>...
870
871 <item>...
893 <item>
894 <title>Homemade Commodore 64 joystick</title>
895 <description>
896
897 <p><br />
898 </p>
899
900 </item>
901 </feed>
```

XML Gotchas

- Keep it simple
- Start small (<hello>world</hello>)
- Work your way up to RSS
- Validating is easy
- XML Parsers are strict and unforgiving (mostly)

Sample Mobile Development Process



Where Am I?

Finding yourself

- Many many ways
- Read Chris Heathcote's eTel presentation
 - 35 Ways to find your location

http://conferences.oreillynet.com/cs/et2004/view/e_sess/4657

- A few more than that these days

Location API (JSR 179)

- `javax.microedition.location`
- requires CLDC 1.1 for floating point support
- Features:
 1. Get the location of a device
 2. Create, edit, store, retrieve landmarks
 3. Get the orientation

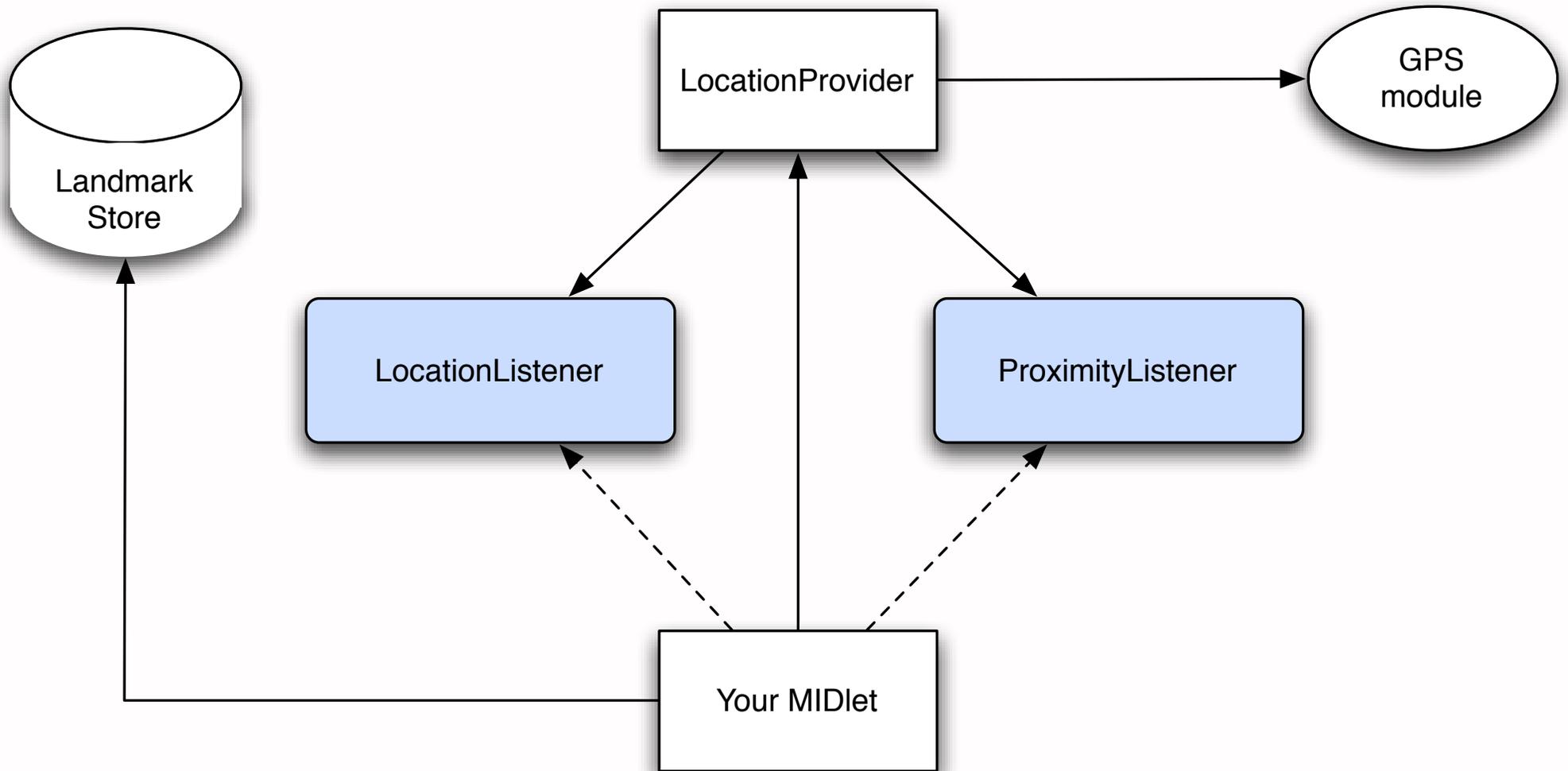
Location methods

- **Network based**, e.g. GSM positioning
 - OTD - Observed Time Difference
 - EOTD - Enhanced - OTD
 - TDOA - Time Difference of Arrival
- **Device based** - e.g. Global Positioning System (GPS)
- **Hybrid** - e.g. Assisted-GPS (A-GPS)

Location methods on Carriers

- **Network based**
 - Sprint (Nextel + Boost) (publicly accessible)
 - T-Mobile, ATT. (not publicly available)
- **Device based**
 - All carriers accessible except for Verizon
- **Hybrid**
 - All carriers. Device dependent.

MIDlet using Location API JSR-179



Location API Usage

- Check for device support - `microedition.location.version`
 1. Select the location provider using `Criteria` and `LocationProvider` classes
 2. Use listeners to get position updates - `LocationListener`, `ProximityListener`
 3. Handle location using `AddressInfo`, `Coordinates`, `Location`, `LocationException`, `QualifiedCoordinates`
 4. Store the location using `Landmark`, `LandmarkStore`, `LandmarkException`

Switch

Detailed explanations by Johan Montelius

<http://www.it.kth.se/courses/2G1722/lectures/positioning.pdf>

Location + web

- Geocoding - via Yahoo!, Google, Ask.com, geocoder.us
- Reverse geocoding (via Autodesk, ESRI et al)
- TIGER / Line data
- Other GIS services

US Options

- Sprint / Nextel / Boost
 - iDEN + CDMA devices
 - J2ME access to the GPS device (for free!!)
- ATT / T-Mobile
 - Nokia N95
 - Blackberry 8800
- Verizon
 - BREW = boo!

Location API Example