



Comp 388 / Comp 422 Software Development for Wireless and Mobile Devices

Dr. William L. Honig
Associate Professor
Department of Computer Science





Introduction to Mobile Device Development

- Real Time Device Operating Systems and Applications
 - System Architecture and Application Use
 - Device Software Development
 - Connectivity to the Mobile World
- Embedded Software and Systems
 - What's different?
 - Software development issues to understand
- Understand Mobile voice and data networks
 - How does it work?





What?

- Programming Device Software
 - Make new applications
 - Modify existing applications
- Using Devices and Applications
 - Gain knowledge of the user experience
 - Understand why these things happen



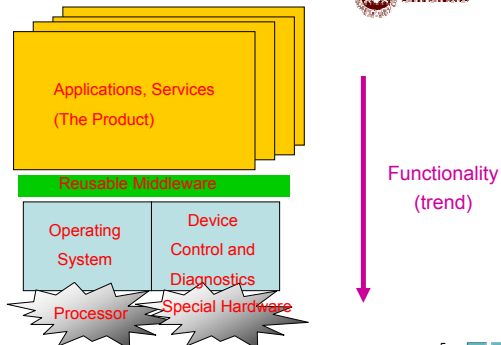
How?



- Understand Big Picture - Concepts
 - Make new applications
 - Modify existing applications
- Explore and Report Results
 - Programming
 - Reading Other's Programs
 - Use Windows Mobile, Android, Symbian
 - Anyone wish to explore iPhone OS?



Inside the Embedded Software World



"Cross" Development



- How do you develop software for a small embedded device?
 - Need text editor, file storage,... (all normal services)
 - Need to generate machine code for some other processor
- Use a Standard PC and Network
 - And a "Cross Compiler" and related tools
 - Runs on PC and generates machine code (or whatever) for the embedded system.



My Embedded Software Background



- Products (aka Applications)
 - Voice Data Switches (central office, PBX, open systems)
 - Packet Data Switches (X.25, network control, QOS)
 - Satellite Communication Networks (testing systems)
 - Mobile Phone Infrastructure (CDMA, services)
- Specialized Hardware (including processors)
 - Custom processors for reliability (and performance)
 - Continuously available systems
 - Commercial chip processors eventually
 - Home grown and OTS operating systems
 - Specialized Software Development Tools (languages, simulators)



A little about me...



- Industry Background
 - Voice and data telecommunications, wireless systems and applications, packet switching, network applications, satellite systems
 - Research and Development
 - Leading large teams of software developers
 - Creating new systems (sometimes)
 - Global experience (Europe, Asia)
 - Hired hundreds of new college graduates
- Bell Laboratories, ITT, GTE, USWEST, Motorola