



Mobile Information Device Programming

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Sources

- Wireless J2ME Platform Programming, V. Piroumian (2002), Sun microsystems Press – A Prentice Hall Title. ISBN:0-13-044914-8
- Core J2ME Technology & MIDP, J. W. Muchow, The Sun Microsystems press – Java Series (2002) – ISBN: 0-13-044914-8
- Programming Wireless Devices with the Java 2 Platform Micro Edition, R. Riggs, A. Taivalsaari, J. Van Peurse, J. Huopaniemi, M. Patel, and A. Uotila (2003), Sun Microsystems – Addison Wesley. ISBN: 0-321-19798-4
- Wireless programming with J2ME, Cracking the Code V. Gupta et al(2002), Hungry Minds Inc. ISBN: 0-7645-4885-9
- Enterprise J2ME, Developing Mobile Java Applications, M. J. Yuan (2004), Prentice Hall PTR.
- Sun Microsystems web site – J2ME Technology sections
- Sun Educational Services releases.



Module Objectives

- Gain awareness on the evolution of wireless technology, understand current architectures, foundation technologies, transfer protocols, software and hardware standards.
- Appreciate Java technology family and specifically JME platform
- Define and describe:
 - JME configurations
 - JME platform profiles (identify supported devices and packages)
 - JME software APIs (device specific capabilities)
- Familiarise yourselves with evolving technologies in the JME family of technologies



Module Objective Cont.

- Learn Basics of Programming with MIDP
- Gain knowledge in connection frameworks
- Discuss some security issues in mobile computing



Module Syllabus 1

- Introduction to Wireless Technologies
 - Mobility and mobile devices
 - Wireless networking
 - Use of Wireless devices
 - Wireless System Structure
 - Wireless Systems and Services Evolution
- Java Technology Platforms and JME
 - Java Platform
 - Overview of J2SE platform
 - Overview of J2EE platform
 - Overview of JME platform
 - Overview of Java Card Technology



Module Syllabus 2

- JME
 - Platform Family of specifications
 - Configurations (CLDC & CDC)
 - Platform Profiles
- Connected Limited Device Configuration
 - Hardware & Software requirements
 - Security
 - Class File verification
 - Inherited classes
 - CLDC specific classes
- JME Platform Virtual Machines (KVM & CVM)



Module Syllabus 3

- Mobile Information Device Profile (MIDP)
 - Hardware & Software requirements
 - MIDP Architecture
 - MIDlets
- JME Platform implementation requirements
- JME Platform APIs



Module Syllabus 4

- Development Environment
 - Downloading and installation of software
 - Command line development
 - Packaging MIDlet
 - Running a MIDlet on emulator
 - Downloading MIDlet on mobile device
 - JME Wireless Toolkit
 - Creating new Projects
 - Writing Code and building projects
 - Configuring the emulator



Module Syllabus 5

- Programming with MIDP
- Event Handling
- User Interface
 - High-Level e.g. screen, form, item, datafield etc
 - Low-Level e.g. Canvas & Graphics
- Animation MIDlet



Module Syllabus 6

- Connection Framework
 - Connection Hierarchy
 - HTTP connection
- GameCanvas API



Lecture Structure

- Combination of:
 - Lectures on technology and programming
 - Lab examples and individual work at the lab
 - Exercises and practice
 - Project work in groups
 - Self reading and research
 - Preparation for exam



Assessment

- Lab Assignments (Individual) 30%
 - lab exercises each assessed on spot
- Project (Group) 30%
 - Design and program a mobile application
e.g. game, business, etc.
 - Presentation
- Final Exam 40%
 - Final written based on lecture notes and sources



Time Scale

- Weeks 1 – 12 Lectures and lab sessions (Double sessions)
- Group Project Submission (week 11 Deadline 8/12/09)
- Group Project Presentations (Week 11 – 10/12/09)
- **MIDP Final Exam**



Course Material

- Lecture notes at my personal website under the module name: www.brunel.ac.uk/~emstaam
- Lab material handouts
- Reference material mentioned under [Sources](#)