Symbian OS—multi-modal communication support

- OS for handheld SmartPhones and mobile handhelds with phone and multi-modal communication features
- Multi-modal means usage of different modes—text, image, video, or audio
- Multi-modal communication integrates and synchronizes multimedia (Video with text, audio with text, …)
Symbian OS—C/C++ as well as Java Support

- Supports application development in C/C++ as well as Java and many communication protocols
- JavaPhone
Fine-tuning with ARM processors

- Symbian OS performance fine-tunes to ARM processors which are used in about more than 70% of mobile devices, for example, Nokia mobile devices
Symbian application architecture

- GUIs and VUIs—APIs for the buttons, menus, advanced voice features such as a hands-free speakerphone, and conference calling capability
- Application view
- Application engine
- Powerful development platforms and GUIs
Application development tools

- Personal Java and Symbian Everywhere
- Symbian C++ Software development kit (SDK)
- Symbian emulator for application development using Windows Metrowerk, CodeWarrior
Synchronization

- SyncML synchronization
- Can also deploy C/C++-based synchronization software
Symbian OS

- Low boot time
- OS supports multi-processing or multi-tasking
- Multithreading
- Internet connectivity for Web browsing, IP-based network connectivity, and WiFi (in later version only).
- Integration to cellular GSM/CDMA phone
Memory Support

- Large storage memory
- Includes 80 MB of built-in memory in a MultiMediaCard (MMC)
- MMC (multimedia card), SD (secure digital) memory card, and SDIO (secure digital input/output) memory card.
Security, MD5, RSA, and many other additional features

- Symbian supports—(i) a standardized API for high resolution screen, (iii) non-volatile file system using flash memory to save the files and data instead of saving them in persistent battery-backed RAM, and (iv) ARM, the processor which provides efficient code and an energy-efficient processor architecture.
Software

- Desktop both for Lotus and Windows programs
- Push-to-talk
- Graphics support including support for 3D rendering
- Simple APIs as compared to Windows CE, PIM, JavaPhone
- Telephony standard interfaces
Software

- MIDP (mobile information device profile)
- contacts
- SyncML
- Office
- address book
- Spreadsheet
Software

- Calendar
- Agenda
- Word processor
- Text-to-speech converter
- Browsing
Software

- Messaging (SMS, MMS, email, and IMAP4)
- WAP push Microsoft Office formats (MS Office 97 onwards)
Software

- Slide shows
- email download, offline creation and sending of POP3 (post office protocol 3) email
- Internet browsing
- GUI development support on C/C++ and Java platform
Software

- Java application using J2ME
- Multimedia applications such as playing music (Palm Tungsten)
- Wireless communications Support for WLAN
Software

- Adobe Reader for accessing PDF files
- Symantec Client Security 3.0
- Fujitsu mProcess Business Process Mobilizer
- IBM WebSphere Everyplace Access
Software

- BlackBerry Connect
- Oracle Collaboration Suite
- Secure mobile connections via VPN Client
Ports

- Serial
- USB
- Infrared
- Telephony
- Bluetooth for communication with mobile phones and external modems
Third Party Support

- Extensive
- Games
- Travel and flight planner
- Enterprise solutions
- Calculator
- Graphic drawings
- Preparing slide shows
Application layer above the Symbian with OS layer

JavaPhone, JVM, MIDP (mobile information device profile), contacts, SyncML, office, address book, spreadsheet, Calendar, Agenda, word processor, text to speech converter, Browsing, Messaging (SMS, MMS, e-mail, IMAP4), WAP push
Os and Hardware layers of Symbian
Communication APIs

- WAP
- WiFi
- CDMA
- GPRS
- GSM Telephony
Network APIs

- Serial
- Bluetooth
- IrDA
- TCP/IP, communication APIs for HTTP, TCP/IP, DNS, SSL, WAP, PPP
Summary

- Symbian OS
- Multithreading
- Multi-modal communication integrating and synchronizing multimedia
- C, C++, Java support
- Fine tuned with ARM processors
- Telephony
- Networking
End of Lesson 07
Symbian OS