

Mobile Computing

Lecture 27

Symbian OS 1



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GETTING STARTED WITH EMBEDDED OPERATING SYSTEM



- An embedded operating system is an operating system for embedded computer systems.
- These operating systems are designed to be compact, efficient, and reliable.
- E-OS are frequently also real-time operating systems, and the term RTOS is often used as a synonym for embedded operating system.
- An important difference between most embedded operating systems and desktop operating systems is that the application, including the operating system, is usually statically linked together into a single executable image.
- Unlike a desktop operating system, the embedded operating system does not load and execute applications. This means that the system is only able to run a single application.

SOME EXAMPLES ARE...



- IOS (MAC OS)
 - Inferno (distributed OS originally from Bell Labs)
 - Pen Point OS
 - Palm OS from Palm, Inc.
 - Symbian OS
 - Windows CE, from Microsoft
- # Embedded Linux
- Android
 - Open Zaurus
 - Metano GNU/Linux from Pynell - Embedded Systems.

SYMBIAN OS...(INTRODUCTION)



Symbian OS is one of Nokia's mobile operating system for mobile devices and smartphones, with associated libraries, user interface, frameworks and reference implementations of common tools, originally developed by Symbian Ltd.

HISTORY



- **Psion** founded by **David Potter** in 1980 launched the Psion Organizer, the world's first volume-produced handheld computer in 1984.
- In June 1998 - Symbian is established as a private independent company and is owned by Ericsson, Nokia, Motorola and Psion. From this point onwards has EPOC OS been called **Symbian OS**.
- In February 2004 - **Symbian OS v8.0** is announced.
- In February 2005 - **Symbian OS v9** is announced.
- In May 2006 - **100th commercial phone model ships**.

HISTORY Contd..



- In November 2006 - **100 million Symbian smartphones shipped.**
- In 2008, the former Symbian Software Limited was acquired by Nokia and a new independent non-profit organization called the Symbian Foundation was established.
- The platform has been designated as the successor to Symbian OS, following the official launch of the Symbian Foundation in April 2009.
- The Symbian Platform was officially made available as open source code in February 2010.

CHARACTERISTICS..



- PROCESSING THREAD BASED
- MEMORY MANAGEMENT
- INPUT/OUTPUT

KERNEL EXTENSION

DEVICE DRIVERS

DMA(DIRECT MEMORY ACCESS

BLOCKING I/O

STORAGE MEDIA

MEMORY MANAGEMENT



How Symbian OS Addresses Memory

- Symbian OS is a 32-bit operating system, addresses can range up to 4 GB
- Symbian OS divides memory into virtual pages and physical frames
- Symbian OS adopts a two-level page table strategy

MEMORY MANAGEMENT

