MOBILE COMPUTING ARCHITECTURE– AN OVERVIEW

Lesson 04

Introduction to Mobile Computing

Mobile computing

- Mobile device does not restrict itself to just one application, such as, voice communication

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Mobile computing

- Offers mobility with computing power

- Facilitates a large number of applications on a single device

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Mobile computing— A Definition

- The process of computations on a mobile-device

- Mobile computing entails a set of distributed computing systems or service provider servers participate, connect, and synchronise through mobile communication protocols

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Wikipedia Definition

- Mobile computing as a generic term describing ability to use the technology to wirelessly connect to and use centrally located information and/or application software through the application of small, portable, and wireless computing and communication devices

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Mobile computing

- Provides decentralized (distributed) computations on diversified devices, systems, and networks, which are mobile, synchronized, and interconnected via mobile communication standards and protocols

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Ubiquitous computing

- Refers to the blending of computing devices with environmental objects

- A term that describes integration of computers into practically all objects in our everyday environment, endowing them with computing abilities

- Based on pervasive computing

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Pervasive Computing

- Pervasive means 'existing in all parts of a place or thing'.

- Pervasive computing─ The next generation of computing which takes into account the environment in which information and communication technology is used everywhere, by everyone, and at all times.

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Pervasive computing

- Assumes information and communication technology to be an integrated part of all facets of our environment, such as toys, computers, cars, homes, factories, and work-areas

Pervasive computing

- Takes into account the use of the integrated processors, sensors, and actuators connected through high-speed networks and combined with new devices for viewing and display

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Mobile computing

- Also called **pervasive computing** *when a set of computing devices*, systems, or networks have the characteristics of *transparency*, application-aware *adaptation*, and have an *environment* sensing ability

Pervasive computing devices

- Are not PCs

- Are handheld, very tiny, or even invisible devices which are either mobile or embedded in almost any type of object

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Mobile Computing

- Novel applications

- A large number of applications

SmartPhone Feature Example

- A mobile phone with additional computing functions so as to enable multiple applications

- SMS (short message service), Video calls

- MMS (multimedia messaging service), phone,.

- Compatibility with popular Personal Information Management (PIM) software

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Mobile-device number of interfaces (APIs)

- Address book

- Web browsing, Calender, task-to-do list,

- Notes

- Internet

- WhatsApp

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SmartPhone Example

- Touch Screen

- Screen bright, high-resolution display, supporting over 8 MPixel or higher

- Bluetooth® capability for hands-free talking via headset, ear buds, and car kits.

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SmartPhone Example

- Device as a wireless modem (hot spot) use for laptop or PC

- Speaker phone

- Polyphonic ring tones

- GBs of memory

- Cloud Storage

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Mobile Computing application to Music and Video

- Example─ Apple iPad enables video viewing, video calls, listening to one's favourite tunes anytime and anywhere

- View photo and video albums

- Slide shows

- Mobile TV

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Mobile Banking, Wallet and Commerce

- Banking and Payment Wallet

- Retail purchases

- Supply chain management

- e-Ticketing— booking cinema, train, flight, and bus tickets

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Summary

- Mobile computing ─ ability to use the technology to wirelessly connect to and use centrally located information and/or application software through the application of small, portable, and wireless computing and communication devices voice, data and multimedia communication standards   …

...Summary

- Voice, Text, Photos, Video, Internet , Web and Mail

- Touch Screen, Cloud storage,

- Ubiquitous and pervasive computing

- Applications

- M-commerce

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End of Lesson 04

Introduction to Mobile Computing

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