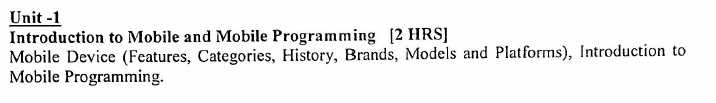
**UNIT-1: Introduction to Mobile and Mobile Programming**

**Syllabus**

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**Mobile device and its features**

* A mobile device is essentially a portable, handheld computer that enables users to access information, perform tasks and connect with other people and devices.
* We can carry with us while we are going out that’s why these devices called mobile devices.
* Tablets, e-readers, smartphones, PDAs, portable music players, smartwatches, and fitness trackers with smart capabilities are all mobile devices.

**Features of mobile devices**

Mobile devices have become an integral part of modern life, offering a wide array of features that enhance their functionality and user experience. Here are some of the key features commonly found in mobile devices:

**1. Touchscreen Interface**

* Respond to touch from human skin or a stylus.

**2. Connectivity Options**

* **Cellular Connectivity:** Supports various networks like 4G, 5G for calls and internet.
* **Wi-Fi:** Enables high-speed internet access in wireless networks.
* **Bluetooth:** Facilitates wireless communication with other devices like headphones and smartwatches.
* **NFC (Near Field Communication):** Allows for contactless payments and data exchange.

**3. Operating Systems**

* **iOS:** Apple's proprietary operating system, known for its security and seamless integration with other Apple products.
* **Android:** Google's open-source OS, offering customization and a wide range of devices.

**4. App Ecosystem**

* **App Stores:** Platforms like Apple App Store and Google Play Store provide access to millions of apps.
* **Pre-installed Apps:** Include essential applications like browsers, email clients, and media players.

**5. Cameras**

* **Rear Cameras:** High-resolution cameras with features like optical zoom, night mode, and portrait mode.
* **Front Cameras:** Primarily for selfies and video calls, often featuring wide-angle lenses and beauty filters.
* **Multiple Lenses:** Devices may have wide-angle, ultra-wide, telephoto, and macro lenses.

**6. Sensors**

* **Accelerometer:** Detects the orientation and movement of the device.
* **Gyroscope:** Measures rotation and helps with motion sensing.
* **Proximity Sensor:** Detects nearby objects to turn off the display during calls.
* **Fingerprint Scanner:** Provides biometric security for unlocking the device.
* **Face Recognition:** Uses facial features for secure access.

**7. Battery and Charging**

* **Long Battery Life:** Enhanced by power-efficient processors and software optimizations.
* **Fast Charging:** Technologies like Qualcomm Quick Charge and USB Power Delivery (PD).
* **Wireless Charging:** Allows for charging without the need for cables.

**8. Audio and Media**

* **Speakers:** Stereo speakers for improved sound quality.
* **Headphone Jack:** Although less common now, some devices still include it.
* **High-Resolution Audio:** Support for formats like FLAC for better audio quality.

**9. Storage Options**

* **Internal Storage:** Ranges from 16GB to over 1TB.
* **Expandable Storage:** MicroSD card slots for additional storage (less common in recent high-end models).

**10. Build and Design**

* **Materials:** Use of premium materials like glass and aluminum.
* **Water and Dust Resistance:** Rated by IP codes (e.g., IP68) for protection against elements.
* **Form Factor:** Varied designs including foldable screens and rugged models for durability.

**11. Performance**

* **Processors:** High-performance CPUs and GPUs for multitasking and gaming.
* **RAM:** Ranges from 2GB to 16GB, affecting speed and performance.
* **AI and Machine Learning:** Enhances features like photography, battery management, and personal assistants.

**12. Software Features**

* **Voice Assistants:** AI-powered assistants like Siri, Google Assistant etc.
* **Multitasking:** Ability to run multiple apps simultaneously.
* **Security Features:** Regular updates, encryption, and secure boot processes.

**13. Additional Features**

* **Dual SIM Support:** Allows the use of two different phone numbers.
* **E-SIM:** Embedded SIM technology for easy switching between carriers.
* **AR and VR Support:** Augmented and virtual reality applications for gaming and other experiences.

**Categories of mobile devices**

* Mobile phones
* Smart phones
* Low-end mobile devices
* Mid-end mobile devices
* High-end mobile devices
* Non-phone devices
* Small personal object technologies (SPOTs)
* Tablets, netbooks, and notebooks

**Brands, models and platforms**

* Apple
* Nokia
* BlackBerry
* Samsung
* Sony Ericsson
* Motorola
* LG Mobiles

**OS uses in mobile devices**

* Android
* iOS
* Windows
* RIM OS
* Palm OS later Garnet OS
* Symbian Foundation

**Introduction to mobile programing**

* Mobile programing is a set of processes and procedures involved in writing software for mobile devices.
* There are two dominant platform iOS and Android
  + iOS for Apple product
  + Android for Google and many other product
* There are many languages used for mobile programing like java, kotlin, c#, flutter, python etc. for android platform and Objective-C, Swift etc. for iOS platform.

**Major development Approaches**

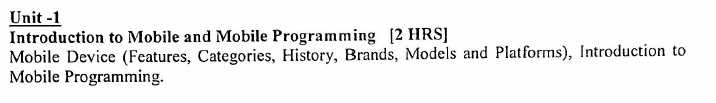
* Native mobile application
* Cross-platform Native mobile application
* Hybrid mobile application
* Progressive web application

**History of mobile devices**

* **1926:** first successful mobile telephony service was offered to first class passengers on the vehicle route on Berlin to Hamburg.
* **1946:** first calls were made on a car radiotelephone in Chicago.
* **1956:** first automated mobile phone system for private vehicle lunched in Sweden.
* **1969:** Nordic Mobile Telephone (NMT) group was established, purpose of this group was to develop a mobile phone system.
* **1973:** Dr. Martin Cooper GM of Motorola Communication made first public mobile phone call on a device with weight 1.1Kg
* **1987:** technical specifications for GSM standard are approved.
* **1992:** world’s first SMS message “Merry Christmas” was sent to Richard Jarvis, Director of Vodafone by an software developer in the UK.
* **1998:** first downloadable content sold to mobile phone was the ringtone lunched by Finland’s Radiolinja, and seller was earned half a billion dollars.
* **1999:** Emoji’s were invented by Shigetaka Kurita in Japan.
* **2000:** Nokia 3310 landed on Shop
* **2000:** first commercially available camera phone The Sharp J-SH04 launched in Japan
* **2003:** 3G standard started to be adapted worldwide
* **2007:** iPhone was lunched
* **2008:** Android phone lunched
* **2009:** 4G standard started
* **2010:** Samsung lunched first Galaxy S smartphone
* **2017:**Nokia 3310 revive with basic web browsing, colorful screen and camera.
* **2017-2021:** many new models of android and iPhones are lunching

**End of Chapter-1**

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