



University of Sulaimani  
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1st Lecture

# Overview of Mobile Technologies

4 October, 2025

# Outline

- What is Mobile Technology?
- Telecommunication System
  - GSM Communication System
- What is Mobile App?
- Mobile Application Platforms
- Why Mobile Apps?
- Technology in 21st Century
- Types of Mobile Apps
- Operating Systems
  - Mobile OSes



## What is Mobile Technology?



- **Mobile Technology** is a form of technology that is mostly used in cellular communication and other related aspects
- The mobile technology has improved from a simple device used for phone call and messaging into a multi-tasking device used for:



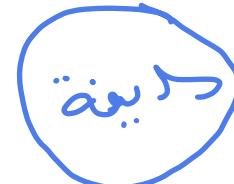
# Telecommunication System



**Telecommunication** is the transmission of signs, signals, messages, words, writings, images and sounds or information of any nature by wire, radio, optical or electromagnetic systems



MSC  
Asia → MSC  
jgħi Korak



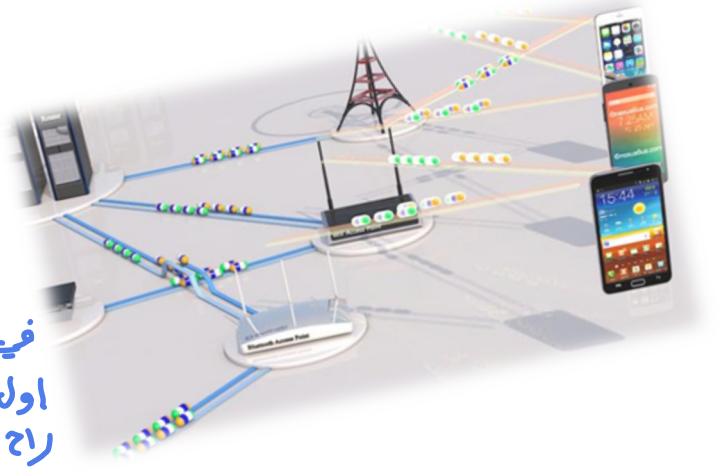
# Wireless Network



❑ **Wireless Networks** are computer networks that are not connected by cables of any kind

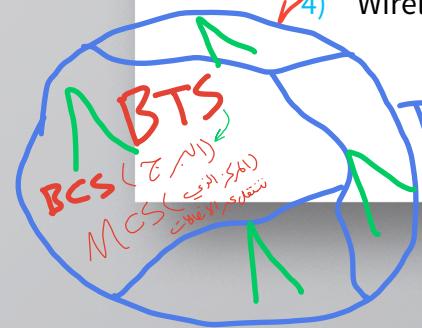
❑ There are four main types of Wireless Networks:

- ✓ 1) Wireless Local Area Network (**WLAN**)
- ✓ 2) Wireless Metropolitan Area Networks (**WMAN**)
- ✓ 3) Wireless Wide Area Network (**WWAN**)
- ✓ 4) Wireless Personal Area Network (**WPAN**)



في حالة وجود متلازمة إيرانية > داخل المراجعة  
أول ما راج يقرأ أبرز الرؤى أي بنريل إلى Tower  
راج يجف أن هنا الرقم موجود في فراغ بذرة البتلات

message → BTS → MCS → داده فتحة اپنے مسند  
message → Satellite → MCS → BTS → داده → سے الارک  
MCS → BTS → داده → سے الارک



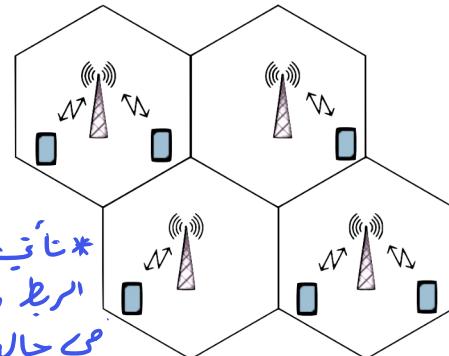
## Cellular Network



- ❑ A **Cellular Network** is a communication network where the last link is wireless
- ❑ The network is distributed over land areas called **Cells**, each served by at least one fixed-location transceiver, but more normally three cell sites, or base transceiver stations

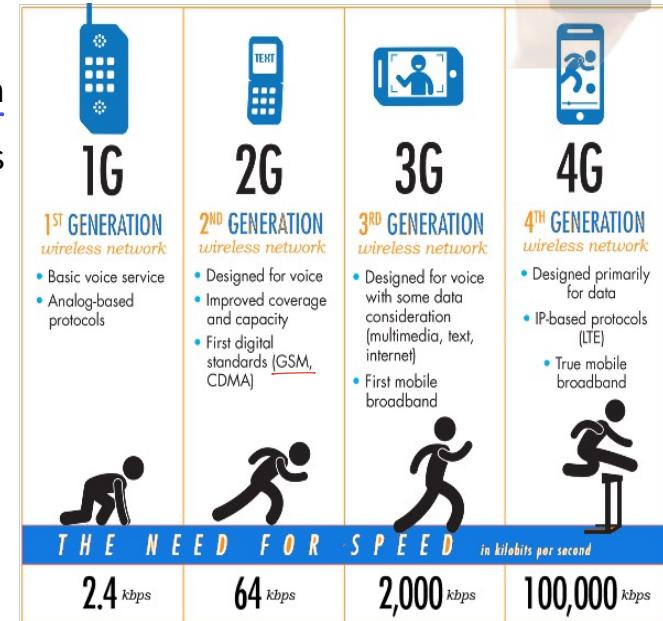
A **Cell** typically uses a different set of frequencies from neighboring cells, to avoid interference and provide guaranteed service quality within each cell

\* تأثيُّر اِنْتَهَىٰهُ عَنْ اِنْوَاعِ  
الرِّجَالِ هُنَّا، بَلْ بَيْنِ مَدِينَتَيْنِ  
فِي حَالَةِ كَانَتِ النَّسْكَةِ فِيَّا اَوْ هَنَّسَابِهِ



# GSM Communication System

GSM (Global System for Mobile Communication) is a standard developed by the European Telecommunications Standards Institute (ETSI)



## GSM Communication System (2)

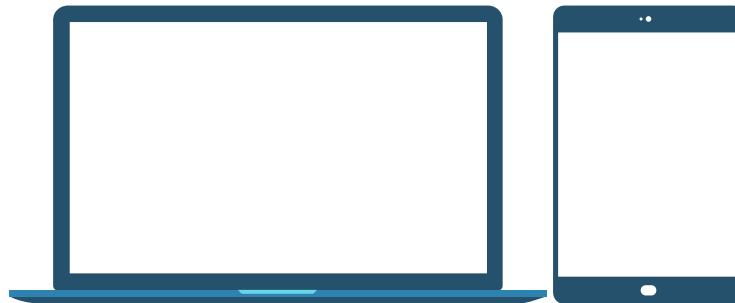


- 5G stands for 5<sup>th</sup> Generation of mobile network
- 5G started from late 2010s, and South Korea became the first country to offer 5G in 1 December, 2018
- 5G is based on OFDM (Orthogonal Frequency-Division Multiplexing) سریع بیانات بنگل  
ست ازی و پیس سنتاچ  
(Parallel)
- 5G enables a new kind of network that is designed to connect virtually everyone and everything together including machines, objects, and devices
  - data rate up to 20 Gbps based on IMT-2020

## What is Mobile App?



- ❑ Mobile application is a software source code that written and developed to operate on the smart phones or any other smart devices
- ❑ Mobile applications are designed for the users to input data from the touch screen and expecting output from the applications



## Mobile Application Platforms



The mobile apps are available through application distribution platforms, such as

كتاب شوبي  
مكتبة آدراك  
 بلا تكرر ستر  
 تكون تطبيقات مجموعة  
 اوفتها انتراكت  
 حلقة مدن تطبيقات  
 جائزة كل العمل العاشر



1.96 million apps

بقيمة 25 دولاراً  
(ونشر فيه 1000 مقارنة)



2.87 million apps

Windows Phone Store



800,000+ apps

Blackberry World



260,000+ apps

## Mobile Application Platforms (2)



### Strategy of application monetization

#### Free Apps

Free apps are available on app stores free of charge. You can use all the features of the free apps without paying any amount.

#### Freemium Apps

Freemium apps are provided free of charge but some premium amount is charged for extra features.

#### Paid Apps

Paid apps are the ones where you actually pay for the app through the virtual currency.

## Why Mobile Apps?

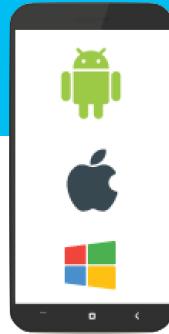
- Global smartphone users increased from **2.5** billion in 2016 to about **4.8** billion in 2025 (**60%** of the world's population), while total mobile phone users reached around **7.8** billion, covering nearly **95%** of the population
- Provide mobile phone users with apps that can keep them productive, informed, entertained,  
or connected whenever they feel the need
- Large potential for financial gain in the field of mobile applications
- Solve problems which have many challenges and obstacles



# Technology in 21<sup>st</sup> Century



## Types of Mobile Apps



There are **three** types of mobile applications which can be accessed by mobile devices:

### 1. Native Applications

- Native applications are those applications that are installed on the device, such as Address Book, Calendar, Calculator, Games, Maps and Web Browser ...etc.
- These applications have their own runtime environment for execution
- Highly interactive applications are really only feasible when they are native applications

## Types of Mobile Apps (2)



### 2. Browser-Based Applications

- A Browser-Based application is an application that is accessed through the use of the mobile device's web browser
- The web app resides on server and is accessed via the Internet
- Browser-Based applications are coded with the use of a Markup Language HTML, XML, CSS, etc.

## Types of Mobile Apps (3)



### 3. Hybrid Applications

- ❑ Hybrid apps are like Native apps, run on the device, and are written with web technologies (HTML5, CSS, and JavaScript)
- ❑ Hybrid apps run inside a native container, and leverage the device's browser engine (but not the browser) to render the HTML and process the JavaScript locally
- ❑ It is an app in which the same app can be worked in different mobile OSes like Android, iOS, Windows, etc.

## Operating System

- ❑ An Operating System (OS) is the program that manages all the other programs in a computer
  - ❑ the other programs are called applications or application programs
- ❑ An OS performs some important functions:
  - ~~❑~~ Coordination between other Software and Users
  - ~~❑~~ Memory Management
  - ~~❑~~ Process Management
  - ~~❑~~ Device Management
  - ~~❑~~ File Management
  - ~~❑~~ Security



## Mobile Operating System

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- ❑ A **Mobile OS** is software that allows smartphones, tablets, and other devices to run applications and programs
- ❑ It also manages cellular and wireless network connectivity, as well as phone access



android



BlackBerry™

webOS



symbian  
OS

Windows Phone

THE END

Q&A