

MSc III Sem – Life Sciences

Course – Bioinformatics

Phone Operating and Application Systems

Phone based Operating Systems

- **Android** – Open source mobile OS developed by the Open Handset Alliance led by Google. Based on Linux 2.6 kernel. Operates on variety of cellphones.
- **iOS** – Apple's proprietary mobile OS, iPhone, iPod Touch, iPad. Derived from OS X, very UNIX like
- **Symbian** – acquired by Nokia 2008, limited smartphones.
- **Windows Phone 7** – Microsoft – Kin, discontinued 6 weeks after initial launch
- **Blackberry OS** – RIM (Research in Motion), proprietary OS

The Smartphone Platform

- With the iPhone being the first to the marketplace it sets the configuration of the Smartphone Platform
 - 3G/4G connectivity
 - WiFi connectivity
 - Bluetooth connectivity
 - accelerometer w/compass
 - ambient light sensor
 - proximity sensor
 - GPS
 - gyroscope

What is Android

- Android is an open source operating system, created by Google specifically for use on mobile devices (cell phones and tablets)
- Linux based (2.6 kernel)
- Can be programmed in C/C++ but most app development is done in Java (Java access to C Libraries via JNI (Java Native Interface))
- Supports Bluetooth, Wi-Fi, and 3G and 4G networking

What is iOS

- Apple's mobile OS for phones (iPhone), tablets (iPad), handhelds (iPod),
- based on BSD Unix
- Application programming done in Objective C
- Supports Bluetooth, Wi-Fi, and 3G and 4G networking

Generation Network

3G (3rd Generation Network)

- Must allow simultaneous use of speech and data services and provide peak data rate of 200 kbits/sec

4G (4th Generation Network)

- Provides a comprehensive and secure IP based solution for IP based telephony, ultra broadband internet, gaming services and streamed multimedia.
- Peak data rate of 100 Mbit for high mobility devices and 1 Gbit for low mobility devices.

5G (5th Generation Network)

Yet to launch in India, started in South Korea at first.

2008



Angel Cake
Android 1.0

2/2009



Battenberg
Android 1.1

4/2009



Cupcake
Android 1.5

9/2009



Donut
Android 1.6

10/2009



Eclair
Android 2.0/2.1

5/2010



Froyo
Android 2.2

12/2010



Gingerbread
Android 2.3

2/2011



Honeycomb
Android 3.0

10/2011



Ice Cream Sandwich
Android 4.0

7/2012



Jelly Bean
Android 4.1

10/2013



KitKat
Android 4.4

11/2014



Lollipop
Android 5.0

10/2015



Android 6.0
Marshmallow

8/2016



Android 7.0 Nougat

8/2017



Android 8
Oreo

Name	Version number(s)	Initial stable release date
No official codename	1.0	September 23, 2008
	1.1	February 9, 2009
Cupcake	1.5	April 27, 2009
Donut	1.6	September 15, 2009
Eclair	2.0 – 2.1	October 26, 2009
Froyo	2.2 – 2.2.3	May 20, 2010
Gingerbread	2.3 – 2.3.7	December 6, 2010
Honeycomb	3.0 – 3.2.6	February 22, 2011
Ice Cream Sandwich	4.0 – 4.0.4	October 18, 2011
Jelly Bean	4.1 – 4.3.1	July 9, 2012
KitKat	4.4 – 4.4.4	October 31, 2013
Lollipop	5.0 – 5.1.1	November 12, 2014
Marshmallow	6.0 – 6.0.1	October 5, 2015
Nougat	7.0 – 7.1.2	August 22, 2016
Oreo	8.0 – 8.1	August 21, 2017
Pie	9	August 6, 2018
Android 10 (Desserts)	10	September 3, 2019
Android 11	11	September 8, 2020

Apple iPhone OS Versions

Version	Build name	Processor / Application support	Release date	Devices		
				iPad	iPhone	iPod Touch
1.0	-	32-bit ARM	Mar 6, 2008	N/A	-	-
2.0	Big Bear	32-bit ARM	July 11, 2008	N/A	1st gen	-
3.0	Kirkwood	32-bit ARM	Feb 2, 2010	N/A	1st gen	1
4.0	Apex	32-bit ARM	Nov 22, 2010	1st gen	N/A	3
5.0	Telluride	32-bit ARM	May 7, 2012	N/A	3GS	4
6.0	Sundance	32-bit ARM	Feb 21, 2014	N/A	3GS	4
7.0	Innsbruck	32/64-bit ARM	Jun 30, 2014		4	N/A
8.0	Okemo	32/64-bit ARM	Sep 16, 2015	2 , Mini 1	4	4
9.0	Monarch	32/64-bit ARM	Aug 25, 2016	2 , 3 , Mini 1	4S	5
10.0	Whitetail	64-bit ARM	Jul 19, 2017	4	5 , 5C	N/A
11.0	Tigris	64-bit ARM	Jul 9, 2018	All current		
12.0	Hope	64-bit ARM	Jul 30, 2018	N/A		

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