

Unit 1: Windows Phone

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1.1 LEARNING OBJECTIVE

To gain the knowledge regarding the different mobile operating systems with its features, run on different devices.

1.2 INTRODUCTION

Windows phone is the mobile operating system developed by Microsoft for smartphones. Mobile operating system is used for phones, tablets, smartwatches and other mobile devices.



Figure-73 Windows Phone OS [1]

Microsoft is the American multinational company who developed the windows phone operating system. Also it developed, manufactures, licenses, support and sell to computer software, consumer electronics and personal computers. This company developed best software product which is known as Microsoft windows which is line of operating system.

Name	Description
Developer	Microsoft Corporation
Written in	C, C++
OS family	Microsoft Windows
Source model	Closed-source
Kernel type	Hybrid (Monolithic in Windows Phone 7)
Platforms	Qualcomm Snapdragon (based on ARMv7)
License	Commercial proprietary software

Table-11 Windows phones 8.1 OS [1]

Windows phone provides new user interface which derived from metro design language. Metro design language is developed by Microsoft. This design language works on the basis of typography and simplification of icons which is helpful to user. Also it works on the basis of geometric shapes. Typography is the technique which is use to arranging the typing beneficial to make written languages in the form of readability and appealing the languages when it is displayed. The arrangement of type includes the typefaces, line length and point size. Typesetter helps to typography to accomplish the work.

Windows 7 was the first launched by Microsoft in 2010. After that windows 8.1 is launched in 2014 and the latest launched by Microsoft is windows 10 in 2015. Windows 10 mobile was announced on 2017.

1.3 History

Update to windows mobile was started in 2004 under the codename “photon” but unfortunately they terminate the project.

➤ Development

In 2008 Microsoft reorganize the group of windows mobile and started the work on new mobile operating system. Windows phone operating system is

developed very quickly by Microsoft which is new operating system for mobile phones. Windows phone 8.1 does not support to updates on 2017. It means it does not support to any system update, feature update or any security update until user does not upgrade the windows 10.

➤ Partnership with Nokia

Microsoft CEO Steve Ballmer and Nokia CEO Stephen Elop announced a partnership on 2011 in between their companies. In which windows phone become a primary operating system for Nokia which are replaced to Symbian mobile operating system.

Microsoft provides some services on Nokia mobile which are mention bellow.

1. Bing is used as a search engine across the Nokia mobile.
2. Bing map are integrated with the Nokia maps.
3. Nokia's OVI store integrated with the windows phone store.

Bing is the web search engine which developed by Microsoft. Bing is the powerful search engine which provides different services includes web, video, map and image search products. Bing is developed by using ASP .Net programing language. OVI store is the brand of internet services of Nokia. OVI services are used from the mobile or computer by using OVI suite or by web. Windows phone store is the former app store which is developed by Microsoft for windows phone. Windows phone store is developed along the windows phone 7 on 2010. Microsoft rebranded windows phone marketplace to windows phone store on 2012. After that windows phone store was replaced by windows store.

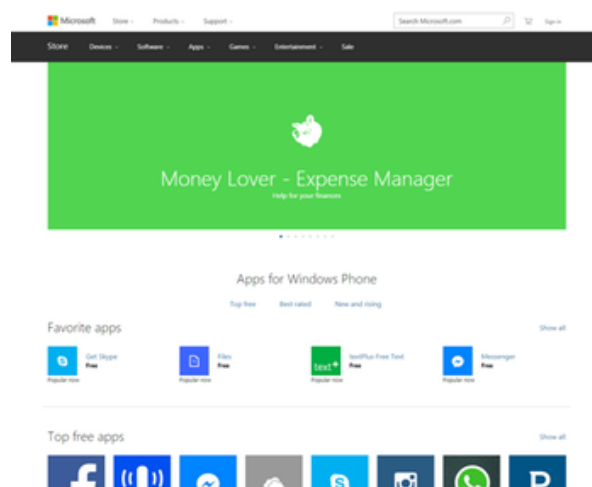


Figure-74 Windows phone Store [2]

Windows phone store support to services such as Operator billing and ad-supported contents. Also Windows phone store provide support to download the 3D games. Windows phone store support to content policy which is restricted the access of content.

The first Nokia Lumia windows phone is announced in 2011. It includes Lumia 800 and Lumia 710. Nokia Lumia 900 was first windows phone which are support to LTE.

➤ **Versions**

- **Windows Phone 7**

Windows phone 7 was announced on February 2010 and it was available publicly on November 2010 in the United States. Microsoft released windows phone 7.5 in 2011. The update includes internet explorer 9 for browsing. Windows phone 7 does not upgrade to windows 8 phone because of hardware limitations.



Figure-75 Logo of Windows Phone 7.5 [1]

- **Windows Phone 8**

Windows phone 8 was released on October 2012 which is Advance generation of operating system. Windows Phone 8 Replaced Old Windows CEA Architecture which are based on Windows NT Kernel.



Figure-76 Logo of Windows phone 8 [1]

- **Windows Phone 8.1**

Windows phone 8.1 was release on April 2014. It includes new features like notification center, internet explorer 11 and separate volume control.

Windows Phone also includes the Cortana (Virtual assistance) which replaced the features of Bing search engine.



Figure-77 Logo of Windows Phone 8.1 [1]

- **Windows Phone 10**

Windows Phone 10 was released on January 2015. This operating system is running on ARM architecture. Windows Phone 10 includes some new features like Skype (Useful to video chat and voice calling between Computers, mobile phones and tablets.). Also it includes updated office app which provides better experience to user.



Figure-78 Logo of Windows phone 10 [1]

1.4 Features

1.4.1 FEATURES OF WINDOWS PHONE 7

Windows phone mobile operating system provides different features such as user interface, text input, web browser, contact, E-mail, multimedia, games etc.

➤ **User interface**

Windows phone 7 provides the user interface working on the base of design system called as METRO. Its home screen is made by using live tiles. Tiles are linked to the functions, features and the different applications. User has authority to add and remove the tiles. Some key features of Windows Phone 7 are organized in Hub which is synchronizing the local and online contents. Also Windows phone 7 is integrated with Twitter, Facebook and the Windows Live. Windows phone 7 working on the basis of multi-touch technology. Also user can capable to select the theme according to its interest.

➤ **Text input**

Virtual keyboard is useful for user to give text input as per its need. Also this keyboard support to emoticon which is helpful to share the expressions without text. Virtual keyboard is the software which is use to give text input without any physical keyboard. Emoticon is the short form of emotional icon which includes the facial expressions represented by using characters such as punctuation mark, numbers and letters.



Figure-79 Graphical Representation of smiley [3]

➤ **Messaging**

Windows phone 7 working on the basis of threading. This provides conversation with peoples on multiple platforms such as Facebook, Messenger and windows live.

➤ **Web browser**

Windows phone 7 provides internet explorer mobile which gives better web browsing experience to user. User can maintain its favorite web pages and tiles linking web pages to home screen. Browser support up to 6 tabs, can load parallel manner. Also browser provides smooth zoom in/out animations. It supports to download the images which are appearing on the web pages. User can capable to share downloaded web pages via email.

➤ **Contacts**

People hub provides the facility to organize all the contacts in the windows phone. User can manually enter the contacts; also contacts are imported form the social network like Facebook, twitter, LinkedIn, Gmail and Windows Live contacts. Live tile of the contact shows the user's status and profile picture of the social network.

➤ **Email**

Windows phone 7 supports to Outlook.com, Exchange, and Yahoo! Mail. Gmail supports to the services such as POP and IMAP protocol. Contact and calendars are

synchronizes by using Gmail. Users are capable to search in the Gmail like subject, body, sender and receiver.

➤ **Multimedia**

Music and video hub provides facility to user to access the music and video. User can buy the music from Xbox Music store. This store also provides the rent facility to user on the basis of subscriber pass. User can search the music by using the artist name and also capable to see the biography and photos of artist which are provided by the Xbox Music store.

➤ **Media support**

Windows phone support to different file formats such as WAV, MP3, WMA and AMR. Also support to image file format like JPG, PNG, GIF, Bitmap and TIF. Mango update provides the facility to customize the ringtone. Ringtone is under the 1 MB and it is less than 40 second long.

➤ **Games**

Xbox Live provides the online game plying developed by the Microsoft. Games hub provides support to access the online games along with the Xbox Live.

➤ **Search**

Windows phone 7 provides the search button on the front of device which is use for different actions. Search button allow searching any content if there is other application are running. Windows phone 7 is also providing the voice recognition facility powered by TellMe network which is American company. It is allow to perform the Bing search, call and launching the applications. In windows phone 7 Bing is the default search engine which is deeply integrated with OS. Windows phone 7 also provides the GPS navigation known as turn-by-turn navigation. Also it shows the places which are nearest to user like attractions and restaurants. Bing audio is capable to match the song by its name as well as Bing video is capable to read the QR codes, tags and barcodes.

➤ **Office suite**

Office hub provides the facility to organize the all Microsoft apps and documents. Power point mobile, Excel mobile and Word mobile allows viewing and editing the different Microsoft file formats. Microsoft office provides facility to open the files from Skydrive and office 365.

➤ **Multitasking**

Windows phone 7 provides the card based application switching which is shows the last 5 apps.

➤ **Removed features**

Many new features are added in windows phone 7 but some features are removed from windows phone 7 which are present in windows phone 6.5 such as the calling list of past phone is the single now and cannot separated like missed calls, inbound and outbound.

1.4.2 FEATURES OF WINDOWS PHONE 8

➤ **Web**

Internet explorer 10 is the default web browser provided by windows phone 8 which gives nice web surfing experience to user. It provides the simple navigation interface mechanism. Browser support to swipe, allows moving from one page to another page.

➤ **Multi-tasking**

Windows phone 8 supports to Multi-tasking, run the app at background and resume instantly. User can switch the active task by pressing the back button. User can close the applications by opening multitasking panel and by clicking on 'X' button, right handed side at each application.

➤ **Kids Corner**

Windows phone 8 provides the facility of kids corner working on the basis of 'guest mood'. User can play games without touching data of the main user.

➤ **Rooms**

Rooms are the most important features which provide the group messaging and communication. User can see the status of Facebook and Twitter which are updated by the group members created by using Rooms.

➤ **Driving Mode**

Windows phone 8 is supportable to connect with car via Bluetooth which activate the driving mode in which user can operate the special UI designed for the mobile devices while driving.

➤ **Data Sense**

Data sense provides the facility to set the limit to the data usage based on their plans. Data sense restrict the data usage when it's near to limit of data usage which are set by user.

➤ **NFC and Wallet**

Windows phone 8 supports to NFS which provide the wireless sharing of data between two devices.

1.4.3 FEATURES OF WINDOWS 10 MOBILE

➤ **Start and Action center**

Windows 10 mobile supports to update all live tiles at once. Each app includes the small header which provides more space in the notification room.

➤ **User interface**

In windows 10 mobile Back button on lock screen are replaced by camera button. Media control UI is added on to the lock screen for better user experience. 'Good bye' message is stay visible for user until device is not shut down completely.

➤ **Microsoft Edge**

Microsoft Edge provides supports to back and forward by swiping. Also 'X' button is larger than previous version of windows phone operating system. Before starting the downloading a prompt is pops up. Download notification includes the filename, download status and site domain.

➤ **Setting**

Windows 10 mobile provides support to customize the app notification which is more important to the user. Users are capable to manage the order of quick actions in the action center. Users are capable to hide the quick actions in which user are not interested. Windows 10 mobile supports to the visual voicemail. WI-FI data refreshing rate is become faster as compared to previous version of operating system.

➤ **System**

Windows 10 mobile provides the one handed Japanese kana keyboard support. Also provides supports to USB Ethernet. Users are capable to run 16 apps at the background which is useful to switch form one app to another. Emoji set is completely updated in windows 10 mobile operating system. Bluetooth provides more reliability in the car.

1.5 ARCHITECTURE OF WINDOWS PHONE

Microsoft was released windows phone 8 operating system. Windows phone 8 operating system successfully replaced its previously windows based CE architecture which is working on the basis of Windows NT kernel.

1.6 LET US SUM UP

Different mobile operating system running on different hardware devices and every mobile operating system provides the different features.

1.7 CHECK YOUR PROGRESS

1. Give the technical specification of windows phone 8.1 OS?
2. Give the brief history of windows phone mobile operating system?
3. Explain the features of windows 7?
4. Explain the features of windows 8?
5. Explain the features of windows 10?

1.8 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

1. Refer 1.2
2. Refer 1.3
3. Refer 1.4.1
4. Refer 1.4.2
5. Refer 1.4.3

1.9 ASSIGNMENTS

1. Explain the architecture of windows phone mobile operating system?
2. What is user interface in windows phone mobile operating system?
3. What is text input in windows phone mobile operating system?
4. Explain driving mode in windows phone mobile operating system?
5. What is the multitasking in windows phone mobile operating system?

1.10 ACTIVITIES

1. Make case study different types of windows phone mobile operating system.

1.11 FURTHER READING AND REFERENCES

1. https://en.wikipedia.org/wiki/Windows_Phone
2. https://en.wikipedia.org/wiki/Windows_Phone_Store
3. <https://en.wikipedia.org/wiki/Emoticon>