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LO2—Understand Computer Software

Operating System: the low-level software that supports a comput- er's basic functions, such as scheduling tasks and controlling periph- erals.

Utility Program: is a system software designed to analyse, con- figure and optimize the system.

Application Program: **Applications software** (also called end-user programs) include such things as database programs, word proces- sors, Web browsers and spreadsheets

Business Software: used by business users to perform vari- ous business functions. These business applications are used to increase productivity, to measure productivity and to per-

2.1Understanding Computer Software:

- types of software
- Application software
- Utility software
- Operating systems
- Communication Methods
- Software Troubleshooting

Source Code – Code, written by programmers in a high or low level programming language, which is converted into a list of instructions for the computer to provide various functions and actions.

Code – groups of symbols, characters, words, letters or figures used to represent messages or instructions

Types of Software:

open source: source code made available with a license in which the copyright holder provides the rights to study, change, and distribute the software to anyone and for any purpose **closed source :** (or proprietary **software**) means computer **programs** whose **source** code is not published. The **source** code is not shared with the public for anyone to look at or change. **off the shelf :** ready-made and available for sale to the general public. For example, Microsoft Office is a COTS product that is a packaged **software** solution for businesses

Bespoke: that is specially developed for some specific organization or other user

Shareware : software that is available free of charge and often distributed informally for evaluation, after which a fee may be requested for continued use.

Freeware : software that is available free of charge.

embedded : written to control machines or devices that are not typically thought of as computers. It is typically specialized for the particular hardware that it runs on and has time and memory constraints .

Key term	Explanation
Hybrid cloud	Hybrid cloud is a cloud computing environment which uses a mix of on-premises, private cloud and public cloud services with orchestration between the two platforms. By allowing workloads to move between private and public clouds as computing needs and costs change, hybrid cloud gives businesses greater flexibility and more data deployment options. http://whatis.techtarget.com/definitions/H/page/7
Hypervisor	A hypervisor is a hardware virtualisation technique that allows multiple guest operating systems (OS) to run on a single host system at the same time. The guest OS shares the hardware of the host computer, such that each OS appears to have its own processor, memory and oth- er hardware resources. A hypervisor is also known as a Virtual Machine Manager (VMM). http://www.techopedia.com/definition/4790/hypervisor
Internet of Things	The Internet of Things (IoT) is a computing concept that describes a future where everyday physical objects will be connected to the Internet and be able to identify themselves to other devices. http://www.techopedia.com/definition/28247/internet-of-things-iot
VoIP	Voice over Internet Protocol (VoIP) is a technology that allows telephone calls to be made over computer networks like the Internet. http://compnetworking.about.com/cs/voicefaxoverip/g/bldef_voip.htm

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Business Software:

MIS (Management Information System): broadly refers to a computer-based system that provides managers with the tools to organize, evaluate and efficiently manage depart- ments within an organization

CAD/CAM: computer-aided design/computer-aided manufacturing, computer systems used to design and manufacture products.

Expert System: a piece of software which uses databases of expert knowledge to offer advice or make decisions in such areas as medical diagnosis.

Healthcare system: is the organization of people, institutions, and resources that deliv-
er **health care** services to meet the health needs of target populations.

Project Management: application is one used at home, typically to **manage** lifestyle or home projects.

Multimedia: A **Multimedia System** is characterised by the processing, storage, genera- tion, manipulation and rendition of **Multimedia** information.

Publishing: the production of printed matter by means of a printer linked to a desktop

Software Troubleshooting:

Software Troubleshooting: There are many different things that could cause a problem with your computer. No matter what's causing the issue, troubleshooting will always be a process of trial and error—in some cases.

Write down your steps: Once you start troubleshooting, you may want to write down each step you take. This way, you'll be able to remember exactly what you've done and can avoid repeating the same mistakes. If you end up asking other people for help, it will be much easier if they know exactly what you've tried already.

Take notes about error messages: If your computer gives you an error message, be sure to write down as much information as possible. You may be able to use this in- formation later to find out if other people are having the same error.

Always check the cables: If you're having trouble with a specific piece of comput-
er hardware, such as your monitor or keyboard, an easy first step is to check all relat- ed cables to make sure they're properly connected

Common Protocols:

IP: An Internet Protocol address (*IP* address) is a numerical label assigned to each device

TCP: *TCP* (Transmission Control Protocol) is a standard that defines how to establish and maintain a network conversation via which application programs can exchange data.

UDP: an alternative communications protocol to Transmission Control Protocol (TCP) used primarily for establishing low- latency and loss tolerating connections between applications on the Internet

SMTP: Simple Mail Transfer Protocol (**SMTP**) is an Internet standard for electronic mail (email) transmission

FTP: File Transfer Protocol (*FTP*) is the commonly used protocol for exchanging files over the Interne

HTTP: **Hyper Text Transfer Protocol** is the foundation of data communication for the World Wide Web.

SNMP: It is used for collecting information from, and configuring, network devices, such as servers, printers, hubs, switches, and routers on an Internet Protocol (IP) network

ICMP: (Internet Control Message Protocol) is an error-reporting protocol network devices like routers use to generate error messages to the source IP address when network problems prevent delivery of IP packet

POP: **Post Office Protocol** (**POP**) is an application-layer Internet standard **protocol** used by local e-mail clients to retrieve e- mail from a remote server over a TCP/IP connection

Communication Methods:

SMS: It uses standardized communication protocols to enable mobile phone devices to exchange short text messages

Email: messages distributed by electronic means from one computer user to one or more recipients via a network

Instant Message: a message sent via the Internet that ap- pears on the recipient's screen as soon as it is transmitted **VoIP:** the transmission of voice and multimedia content over Internet Protocol (IP) networks.

Personal Assistants: administrative assistant working exclu-
sively for one particular person.

Teleconference: the use of telecommunication devices to hold discussions between participants in different locations **Video Conference:** A *video conference* is a live, visual con- nection between two or more people residing in separate lo- cations for the purpose