**Definition of software and how it is made (p1 ex1, p2-3 ex2-3v)**

Software - is a set of instructions, data or programs used to operate computers and execute specific tasks, it is non-hardware components of a computer, a program that makes hardware work.;A computer program also known as software is made up of 1s and 0s, this is known as binary and this is the only thing that the computer understand. So how do we get from an idea to the finish software/ writing the binary by yourself wold be too long, instead we use something called sourse code. It is the set of instructions to the computer that is neant to the human to be readable with a little practice. Sourse code can be written in different programming languages. When we write a code it is compiled into binary system which is readable to the computer, but if there are some mistaces in your code, compulation will fail. While a simple code may be writted by one developer, typical software is created by hundreds of programmers, so being colaaborate is essencial for their success. Here how it works^ all the sourse code for the software is stored on a large server, each developer has a copy of this code, they can make changes and add them to a new file and submit it on a server wthen it is ready. The server has information about what and what has been changed, so if there are any problems, developers can undo the changes and return to the state when code worked. Some problems are called bugs. So if there are any bugs in a software after its releasing, developers create updated iwthot thoee bugs.

Software can be created in 2 different ways: **proptietary**( the software is owned by a person or company and sold to make money, the sourse code is not released to the public), **open sourse**(program is free and anyone can get acces to the source code)/

**Categories of software (p1 ex1, p3 ex4)**

Software consist of two basic types:

**System software** – controls the basic functions of a computer, e.g. operating systems, programming software and utility programs. It is designed to run a computers hardware and application programs. Generally users don’t interact with system software as it works in the background. System software can run independently of the application software.

*Types*: operating system, device driver, utility software, programming languages.

*Features:* close to the system,fast in speed,difficult to understand,difficult tot manipulate, difficult to design, smaller in size.

**Application software** - lets you do specific jobs such as writing letters, doing calculations, drawing or playing games. Also known as an app, it is software designed to help the user perform specific tasks. Users always interact with application software while doing different activities. Application software cant run withous presence of the system software.

*Types*: web browser, word processing, spreadsheet software, presentation software

*Features*: bigger in size, easy to understand, easy to manipulate and use, slow in speed, more interactive, close to the user.

**Types of software (p1 ex1, p3 ex4, p5 ex6-7)**

Software consist of two basic types:

**System software** – controls the basic functions of a computer, e.g. operating systems, programming software and utility programs.

**Application software** - lets you do specific jobs such as writing letters, doing calculations, drawing or playing games.

**Programming software** - is the type of software Programming which used by software programmers as translator programs. They are facilitator software used to translate programming languages (i.e., Java, C++, Python, PHP, BASIC, etc) into machine language code.

**Utility software** – is a type of system software, which designed to help you monitor and configure settings for your device, its operating system, or application software. Like all system software, utilities focus on computer-centric tasks such as blocking viruses or diagnosing hard disk errors.(formatting, disk defragmentation, system clean-up, anti-virus software, user account and security, deleting data, software update, encryption/decription)

**Device driver** - is software that helps a peripheral device establish communication with a computer. This type of system software is used by printers, monitors, sound cards, network cards, storage devices, modems, mice, and scanners.

**Operating system** – is a set of programs that control the hardware and allow people and applications to communicate with the hardware. Typical functions of the OS are handling input/output operations, running programs and organizing files on disks. The OS also gives access to networks and allows multitasking - user can run several programs at a time.

/// Compiler- a program thet translates the entire sourse code in a single run. Intrepreter is a program that translates the entire sourse code line by line.

An interpreter takes an entire program and a lot of time to analyse the sourse code, whereas a compiler takes a single line of code and very little time to analyse it. A compiler code runs faster while that an interpreter code runs slower. A compiler displays all errors after transtation. If your code has errors, it will not compile. But an interpreter displays errors of each line one by one. An interpreter doesn’t replace compilation completely. A compiler can contain an interpreter fo optimization reasons like faster performance and smaller memory footpirint.

**Definition and types of operating systems (p1 ex1, p6 ex1, p9 ex6)**

**Operating system** – is a set of programs that control the hardware and allow people and applications to communicate with the hardware. Typical functions of the OS are handling input/output operations, running programs and organizing files on disks. The OS also gives access to networks and allows multitasking - user can run several programs at a time.

An operating system gives your digital device personality. It controls key elements of the user interface, which includes the visual experience as well as the keyboard, mouse, microphone, or touch screen that collects user commands. Behind the scenes, the operating system is busy supervising critical operations that take place within a device.

The core functions of an operating system include:

Managing hardware resources: An operating system manages resources such as CPU, memory, and disk space, and assigns these resources to running applications.

Running applications: An operating system provides an environment in which applications can run and interact with the user.

Providing a user interface: An operating system provides a graphical user interface (GUI) that allows users to interact with the computer.

Examples of popular operating systems include:

Windows: Microsoft Windows is the most popular desktop operating system, used by over 1 billion users worldwide. It has a wide range of features and applications, including the Office suite, gaming, and productivity tools.

macOS: macOS is the desktop operating system used by Apple Mac computers. It is known for its clean, user-friendly interface, and is popular among creative professionals.

Linux: Linux is an open-source operating system that is available for free and can be customized to meet specific needs. It is used by developers and businesses, as well as individuals who prefer an open-source, customizable operating system.

Types of OS:

-Desktop OS(It accommodates one user at a time but allows multiple accounts, it includes file management tools, it runs more that one application at a time)

-Mobile OS (It provides connectivity to wireless local area networks, it accommodates one user at a time, it includes integrated cellular communications, it runs more than one application at a time, it offers a GUI designed for touchscreen input, it offers a GUI designed for keyboard and mouse input)

-Server OS (It provides a utilitarian user interface, it accommodates multiple simultaneous users, it includes sophisticated network management and security tools, it provides local area networking capabilities.)

**Definition of copyright and licence agreement (p14 ex 2-3)**

In most countries, computer software is protected by copyright. Copyright is a form of legal protection that grants the author of an original work an exlusive right to copy, distribute, sell and modify that work.

Purchasing software is not the same as buying tangible goods, such as mittens, chairs, and shoes. Once they’ve been purchased, tangible goods can be used, altered, loaned to friends, resold, or given away. In contrast, a software purchase is actually a licence agreemenbt thet may include certain restrictions.

From a legal perspective, the a re two categories of software: public domain and proprietary. Public domain software is not protected by copyright because the copyright has expired or the author has placed the program in the public domain, making it available without any restriction. Public domain software may be freely copied, distributed, and even resold. The primary restriction on public domain software is that you are not allowed to apply for copyright on it. Proprietary software has restrictions on its use that are delineated by copyright, patents or licence agreement. Some proprietary software is distributed commercially, whereas some of it is free of charge. Based on licencing rights, proprietary software is distributed as commercial software, freeware, demoware, shareware or open sourse software.

Softwarre copyrights protect the rights of the person or coraporation that developed the intellectual property. A software licence, or licence agreement, is a legal contract that defines the ways in which a computer program may be used. Without copyright protection, software would be copied and distributed by unathoried parties without compensation to its authors. Copyrights protects a software producr by imposing a set of restrictions on its use. Although copyrights, trademarks, and patents are frequently used interchangeably, they offer different forms of protection for intellectual property. Not all types of work can be copyrighted. Ideas, discoveries, concepts, or theories cannot be protected under copyright law. Copyright protection varies from country to country and can stand for 50 to 100 years after the individuals death, depending on the country.

**Types of software licences (p15 ex5)**

There are 5 ytpes of software licences:

-**Demoware** is distributed for free and often comes preinstalled on new devices, but it is limited in some way until you pay for it.

-**Commercial software** is usually sold in retail stores or on Web sites. Most of this software is distributed either under a single-user licence that limits use to one person at a time or multi-user licences to schools, organisations, and businesses.

-**Freeware** is copyrighted software that is available for free, it is fully functional and requires no payment for its use. This licence permits you to use software, copy it, and give it away, but the licence doesn’t permit you to alter or sell the software.

-**Open sourse software** makes source code available to programmers who want to modify and improve the software. It may be sold or distributed free of charge in a compiled form, but it must, in every case, also include the sourse code.

-**Shareware** is copyrighted software marketed under a try-before-you-buy policy. It is similar to demoware but tipically does not have built-in limitations that are removed when a consumer switches to a paid version.

**Pros and Cons of using open sourse and proprietary software (p17-18 ex 2-3 au)**

First, open sourse software comes with a great advantage since it can be installed for free. But this is not the only imporatant thing. There is freedom from the software vendors. Many companies say that freedom is the number one reason to choose open sourse software. With open sourse software the organisations don’t have to follow the software vendors decisions. With proprietary software the vendor controls software updates. Furthermore, it an be used and deployed again and again on multiple machines without the need of tracking the licence compliance and terms of use.

Second, open sourse software helps companies save the time and money by providing ready to use software as a whole. Besides, many of these programs are created to work with almost any type of platform, which helps extend your hardware life and avoid the need to contantly replace them.

Also, with open sourse companies have more control of their data. Proprietary software stores data in such ways that when a company wantsto change to a different vendors software, moving data to this new software can be very difficult. With open sourse software it is open and not a secret. Because of this, moving data is not a problem.

Sometimes people worry about the quality of open sorse software. But , open sourse software is usually developed by a group of talented and skillful experts But, often why most of the oss is high-quality programs. Since anyone can access to code and fix a bug, you will nice continuous improvement and new versions or features added to the software every now and then. Users also think that their favorite software programs wont run on open sourse operating systems. Its only special areas, such as graphics design, where proprietary is clearly better.

// John Clark thinks that companies are making a big mistake sing oss. Many people thinck open sourse software is cheaper than proprietary software. Open sourse software is often unfamiliar, so additional training is required. Open sourse operating systems providers often make money by charging for support. Companies that produce proprietary software can pay salaries to their software developers. Proprietary software has more features a better-looking interface and fewer bugs. Most commercial software doesn’t run on open sourse operating systems.

**Software troubleshooting basics (p19 ex2)**

Unexplained software crashes and error messages can bring your work to a standstill. When this happens, its temping to call tech support immediately. But before you make the call, there are basic steps you can take to solve software problems on your own, or at least narrow down their causes.

**Free up RAM by closing other open programs.** Every piece of software uses RAM. The more software that’s running on your computer, that more RAM it uses. So, if software program refuses to load or is running slowly, the first thing to do is close all the open applications.

**Shut down and restart your computer.**Software problems can stem from a conflict with other programs or simply from difficulties the software encountered when starting up. Shutting the program down and restarting it can sometimes resolve these issues.

**Restart the software**. If restarting the problematic program doesn’t resolve the issue, try rebooting your computer. Once the computer has fully restarted, relaunch the application in question and see if the problem has been resolved.

**Search the internet to find solutions**.No matter what software problrms you encounter, chances are its happened to someone else. So, theres a good chance you can find help on the internet.

**Uninstall the software, then reinstall it**. Newly installed software may conflict with other software. For example, Symantec Norton Antivirus can conflict with competing antivirus products. So, if you recently installed another antivirus program amd NA no longer works correctlt, uninstalling the other antivirus products could solve your problem.

**Undo any recent hardware or software changes**. Sometimes, software problems occur because critical application files have been removed, updated or deleted. If you’ve recently removed one program fron your computer, it is possible you removed Dinamic Link Library files that another program relied on. Similarly, adding a program could add or update DLL files.

**Look for software patches.** Software vendors may also fix bugs by using patches- small software updates that address known problems. Even if you are using the most current version of the software, there may be a more recent patch available for that version.

**Scan for viruses and malware**. Viruses, spyware, and other forms of malicious software(malware) can cause the software to freeze, crash, or quit working entirely. If the tips mentioned above haven’t helped solve your software problems, you may also want to scan the computer usig antivirus and anti-malware tools to find and remove viruses and malware. Use the most throughout scan mode available, and remember to restart your machine if the antivirus program found any threats.

**Boot up in safe mode**. Some software malfunctions can be caused by OS settings or other system problems. Windows an Mac OS both offer a troubleshooting environment known as safe mode. Safe mode disables non-critical apps ans processes, which teoratically makes it easier to isolate problems.

If the tips listed above haven’t solved your problem, it may be time to call tech support. At least, youll be able to help them narrow down the problems by describing the troubleshooting steps you’ve already taken on your own.

**Definition of software piracy (p23 ex1)**

Software piracy - is a term used to describe the act of illegally using, copying or distributing software without ownership or legal rights. The majority of software today is purchased as a single-user license, meaning that only one computer may have that software installed on it at one time. Copying that software to multiple computers or sharing it with your friend without multiple licenses is considered software piracy, which is illegal.

Other forms of software theft include physically stealing the software disc, a programmer stealing the software code, and using keygens to unlock software you didn't purchase.

**Types of software piracy (p24 ex3)**

**Softlifting** means sharing a program with someone who is not authoriesed by the licence agreement to use it; often involves purchasing a single licenced copy of software and then loading the software onto several computers, in violation of licencing terms.

**Hard disk loading** is often commited by hardware dealers; this form of piracy involves loading an unauthoriesed copy of software onto a computer being sold to the end user; this makes the deal more attractive to the buyer, at virtually no cost to the dealer

**Client-server overuse** is when too many people on a network use one main copy of the program at the same time; this becomes a types of software piracy if the licence doesn’t entitle you to use multiple times.

**Counterfeiting** mean producing fake copies of software, making it look authentic; this involves providing the box, CDs, and manuals, all designed to look as much as the original product as possible.

**Online piracy** is the fastest-growing form of piracy worth the growing number of users online and rapidly increasing connection speeds which have attracted an extensive following to the exchange of software on the internet through warez sites with cracked software.

**Dangers of software piracy (p26 ex2)**

Software piracy has become a growing problem in recent years. More than a quarter of software installed globally is in fact pirated software, according to the global software survey. This also means that this software companies and developers has also suffered a loss of nearly 50 billlion dollars.

The key reason of such distasteful habits is that many of this individuals complain about how expensive the cost of legitimate software is. And the sad news is that both individuals and even bussines owners have developed this tendency to pirate software. Yeet, software piracy does come with consequences.

Just to spruce up your knowledge, in case you are unaware, software piracy is a severe felony. This means that if you are found guilty, hefty fines can be imposed on you could even face jail time. This is because one can consider software piracy as cybercrime and theft as it results in abuse and misuse of property that you don’t own. In fact, many firms have been raided and taken down simply for using unlicenced software.

So, if you are selfish enough not to be bothered by fines or jail time, malware attacs should scare you. Because this means that you are losing the very same thing you have been working on. **Using pirated or unlicenced software puts you at a risk of malware attacs.**

Some of the common risk you are exposed to when using unlicenced software include credit card and banking info theft, identify theft, ransomware (being locked out of your system until you pay the ransomz0, ad farud and even risk the quality of your work being compromised. In actuality, individuals that visit piracy sites or download unlicenced software are almost 50% more lickely to suffer from malware attacs oon their devices or networks.

Yes, the online world is virtual and may appear to be superficial. Howewer, legitimate software companies and developers do depend on the sales of these software. So, pirating and the use of licenced software odes actualy equate you to physically robbing a store. This does bring about losses to these companies and directly affects the individuals that work for it.

Its like chain reaction – and a million ther pirate software, the company suffers significant losses in sales and has to retrench some of its imployees. Turns out it the same company that your sister works for, and she is one of these retrenched. In another scenario, these legitimate software developers and companies are the ones that save us from deadly malware attacks thancks to their incredible software designs.

Because you have unlicenced and pirated software installed on your devices, this means that **you will not be able to do the constant updating of the software**. Once the software newly introduced, over time it becomes susceptible to bugs and other malware attacks. This is because crackers use their time to try to navigate and penetrate the system. However, for those legitimate software, this is a worry they can push to the back of their minds as software developers provide updates to counter the problem and leave crackers a step behind.

Because they are acquired illegally, you may not know who developed the software and even where they came from. Thus, if the software malfunctions, you will not be able to know this. Thus, **the use of such software can be detrimental to the quality of your work**.

Because the pirated software is cracked and slightly altered to be available for free online, this process affects its performance, making it different ffrom the original software. **This means that pirated software is more lickely to crash, lose files, and even corrupt files.**

**State of the issue globally nowadays (p29 ex5-6 v, p29 ex1 map)**

Today software piracy is a big problem throughout the world. More and more people start using unlicenced software. In every Asian counry pirated software is sold openly. There are lots of specialized shops which sell unlicenced, fake copied software, music… In vietnam 95% of software is illegal. Also It is a multimillion bussines sin Thailand. In Hongkong law enforcement has been kee in reducing piracy. % years ago, we look at piracy at the street level. The BSA reported thet in 2008 piracy declined in hongkong and more then 50 countries including brazil and india. Goverments in Asia have gained some groung in fight against copyright piracy, but with the expanding computer market consuming more cheap software , industry export say piracy will continue to deny the software desighers.

These are the top countries using pirated software such as China, Russia USA, India, Brazil, Vietnam, Ukraine, Iran, Italy…

**Preventive measures against using pirated software (p30 ex2)**

**Legal** **protection**. Most companies make sure their software is officially protected by a user agreement. Letting consumers know that making unathoriesed copies is against the law helps prevent people from unknowingly breaking piracy laws.

**Product** **key**. This is the most popular inti-piracy system, a unique combination of letters and numbers used to differentiate copies of the software. It ensures that only one user can use the software per purchase.

**Online** **verification**. Companies like Adobe have moved their software into the cloud and require online authentification. Before using their software, you must log into your account, and if another rcomputer or device is already using the program, it must be logged out.

**Tamberproofing**. Some software programs have built-in protocols to shut donwand stop working if the sourse code is modified. It prevents people from pirating the software through the manipulation of the programs code.

**Watermarking.** Specific maks, company logos, or names are often placed on software interfaces to indicate that proudcts are legitimately obtained and are not illegal copies