

Welcome to 11 Grade!

ICT

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Term 1	Term 2	Term 3	Term 4
11.1A Computer systems <ul style="list-style-type: none"> • Software categories • Operational systems • Von Neumann architecture • Memory types • Boolean logic 	11.2A Information systems <ul style="list-style-type: none"> • Database basics • Normalization • Entity Relationship diagrams • SQL 	11.3A Algorithms and data structure <ul style="list-style-type: none"> • Structure of one-dimensional and two-dimensional arrays • Search and sort algorithms • Efficiency of algorithms 	11.4A Programming system <ul style="list-style-type: none"> • Project development
11.1B Programming paradigms <ul style="list-style-type: none"> • Classification and categories of programming languages • Translators 	11.2B Designing a new system <ul style="list-style-type: none"> • Data flow diagram • Flowcharts • Prototyping • Advantages and restrictions of system • Development environment • Technical specification 	11.3B Web programming <ul style="list-style-type: none"> • HTML markup language • CSS stylesheet • Script language • Using scripts to create site content 	11.4B Information security <ul style="list-style-type: none"> • Security, privacy and data integrity • Safety device • Validation and verification • Blockchain technology • Ethics and ownership
11.1C System lifecycle <ul style="list-style-type: none"> • System lifecycle stages • System lifecycle model • Dataflow diagrams • Flowcharts 		11.3C Mobile applications development <ul style="list-style-type: none"> • Application interface • Mobile application development • Publishing mobile application 	11.4C Communication and networks <ul style="list-style-type: none"> • Computer networks • Principles of Internet operation • Protocols

Vocabulary

- ▶ software, categories, application, system, development, text processor, spreadsheets, editor (video, graphical), driver, bespoke software, special purpose software, general purpose software, off-the-shelf software, antivirus software, backup software, disk tools, file compression tool, archiver, utility software, spyware remover, disk defragmenter.

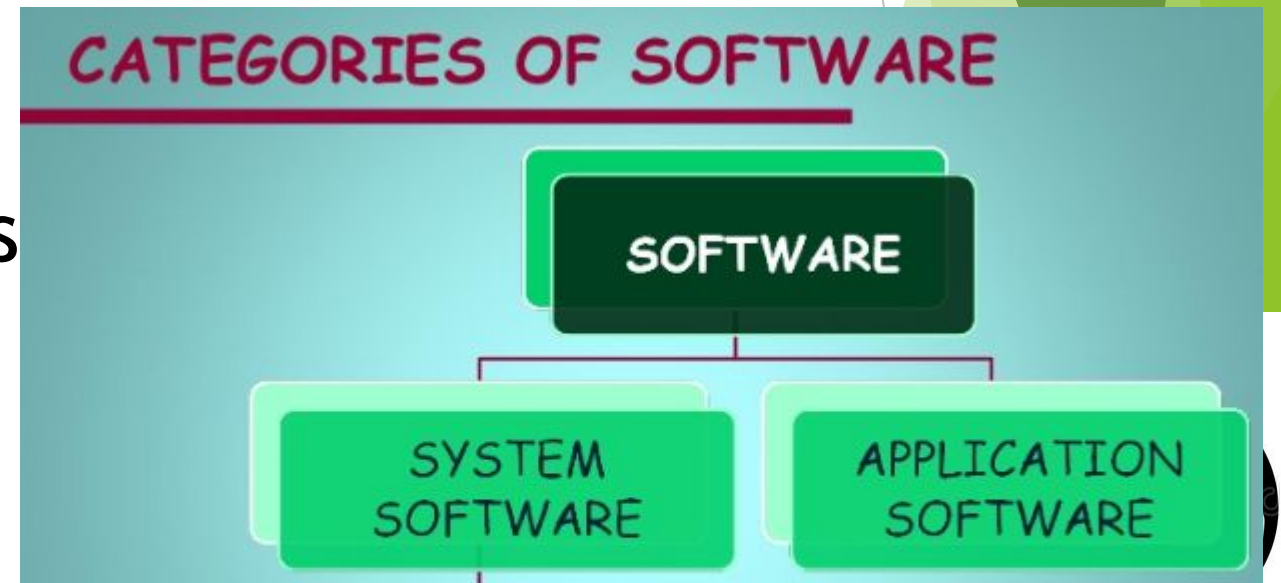
Let's remember...

1) What is Software?

Software is a program which consists of a set of instructions that tell the computer how to perform a specific operation

2) What types of software do you know?
system, application

3) What are the goals and uses of software?



The theory of software was first proposed by Alan Turing in 1935 in his essay "Computable numbers with an application to the Entscheidungsproblem." However, the word software was coined by mathematician and statistician John Tukey in a 1958 issue of American Mathematical Monthly in which he discussed electronic calculators' programs.

Software is often divided into three categories:

- _____ serves as a base for application software. _____ software includes device drivers, operating systems (OSs), compilers, disk formatters, _____ and utilities helping the computer to operate more efficiently. It is also responsible for managing hardware components and providing basic non-task-specific functions.
- _____ is a set of tools to aid developers in writing programs. The various tools available are compilers, linkers, debuggers, interpreters and text editors.
- _____ is intended to perform certain tasks. Examples of _____ include office suites, _____ and educational software. _____ software can be a single program or a collection of small programs. This type of software is what consumers most typically think of as "software."

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Software is often divided into three categories:

- **System software** serves as a base for application software. **System** software includes device drivers, operating systems (OSs), compilers, disk formatters, **text editors** and utilities helping the computer to operate more efficiently. It is also responsible for managing hardware components and providing basic non-task-specific functions. The system software is usually written in C programming language.
- **Programming software** is a set of tools to aid developers in writing programs. The various tools available are compilers, linkers, debuggers, interpreters and text editors.
- **Application software** is intended to perform certain tasks. Examples of **application** software include office suites, **gaming applications**, database systems and educational software. Application software can be a single program or a collection of small programs. This type of software is what consumers most typically think of as "software."

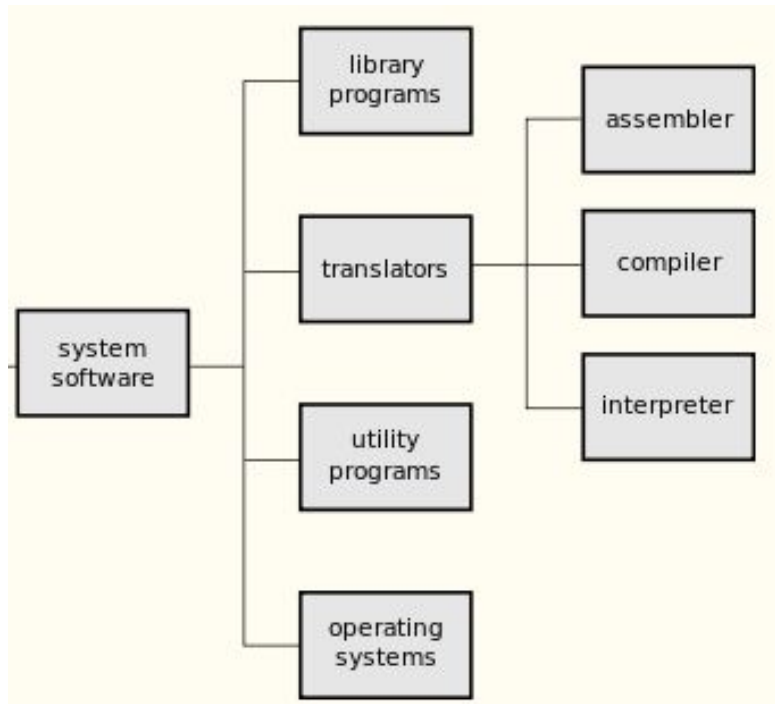
□ What is System Software?

System Software &

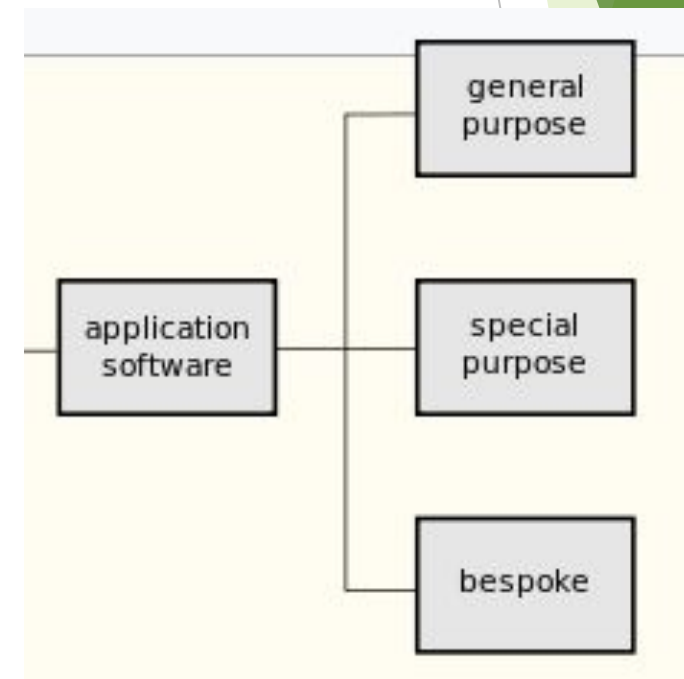
□ What is Application software?

Application software

software designed to operate the computer hardware and to provide a platform for running application software



software designed to help the user to perform specific tasks



Types of Application software

General purpose programs (Off-the-shelf)

General purpose application software is a type of application that can be used for a variety of tasks. It is not limited to one particular function.

Special purpose programs

Special purpose application software is a type of software created to execute one specific task.

Bespoke

Bespoke application software is tailor made for a specific user and purpose

*provide an example for each type of software

For example

General purpose programs (Off-the-shelf)

For example a word processor could be classed as general purpose software as it would allow a user to write a novel, create a restaurant menu or even make a poster.

Например, текстовый процессор можно классифицировать как программное обеспечение общего назначения, так как он позволит пользователю писать роман, создавать меню ресторана или даже создавать плакат.

Special purpose programs

For example a camera application on your phone will only allow you to take and share pictures. Another example would be a chess game, it would only allow you to play chess.

Например, приложение камеры на вашем телефоне позволит вам снимать и обмениваться фотографиями. Другим примером будет шахматная игра, которая позволит вам играть в шахматы.

Bespoke

For example a factory may require software to run a robot to make cars, however, it is the only factory making that car in the world, so the software required would have to be specially built for the task.

Other examples might include software for the military, missile/UAV operations, software for hospitals and medical equipment, software being written inside banks and other financial institutions.

Например, на заводе может потребоваться программное обеспечение для запуска робота для производства автомобилей, однако это единственный завод, который делает этот автомобиль в мире, поэтому требуемое программное обеспечение должно быть специально построено для этой задачи.

Другие примеры могут включать программное обеспечение для военных, ракетных / БПЛА, программное обеспечение для больниц и медицинского оборудования, программное обеспечение, написанное внутри банков и других финансовых учреждений.

Group work

Suggest appropriate software (system or application)

Scenario. Choose a card and suggest your software

Successful criteria :

✓ can choose the right software

A collage of images including a woman thinking, laptops, and text boxes with scenarios. The text boxes contain the following scenarios:

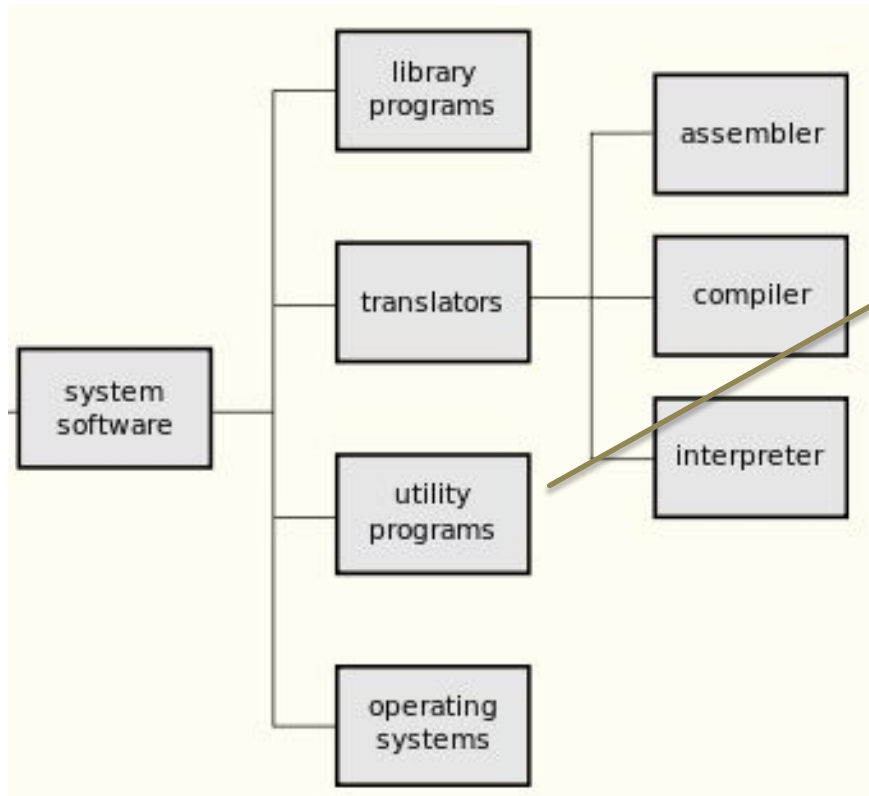
Your teachers like Faniva Andreve

Your sister is buying a new computer to take to university. Name three pieces of software that you would recommend he takes with him. For each piece of software, explain whether it is system or application software and what it can be used for.

A woman comes to the ultrasound of her child. The doctor moves over the womb of a woman with a special device and we can see the baby on the computer screen. What software do you need to connect scanning device to computer?



Types of System software



What is utility program ?

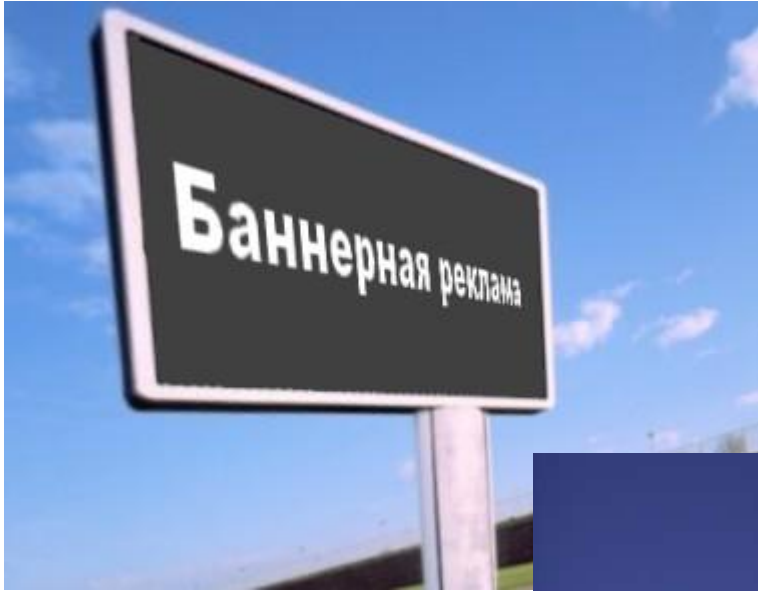
Utility software is a type of system software which has a very specific task to perform related to the working of the computer, for example anti virus software, disk defragment etc.

Examples of utility software include:

- Virus scanner - to protect your system from trojans and viruses
- Disk defragmenter - to speed up your hard disk
- System monitor - to look at your current system resources
- File managers - to add, delete, rename and move files and folders

Group work

Draw an advertisement banner for utilities



- ▶ **1 group:** File compression Tool (сжатия файлов)
- ▶ **2 group:** Antivirus Program
- ▶ **3 group:** Disk defragmenter (Дефрагментация диска)
- ▶ **4 group:** Backup and restore (резервное копирование и восстановление)

Successful criteria :
✓ knows types of utilities

Utility program

<https://study.com/academy/lesson/systems-software-utility-software-device-drivers-firmware-gui.html>

<i>Utility Program</i>	<i>Functions</i>
<i>1. File Compression Tool</i>	<ul style="list-style-type: none">• <i>Reduces the size of a file. A compressed file takes up less storage than the original file.</i>
<i>2. Antivirus Program</i>	<ul style="list-style-type: none">• <i>Protects a computer against viruses by identifying and removing any computer viruses found in memory, storage media or incoming files.</i>
<i>3. Spyware Remover</i>	<ul style="list-style-type: none">• <i>Program that detects and deletes spyware and other similar programs.</i>
<i>4. Disk Defragmenter</i>	<ul style="list-style-type: none">• <i>Program that reorganizes the files and unused space on a computer's hard disk so that operating system accesses data more quickly and programs run faster.</i>
<i>5. Backup and Restore utility</i>	<ul style="list-style-type: none">• <i>Backup utility allows user to copy selected files to another storage medium.</i>• <i>Restore utility reverses the backup process and returns backed up files to their original form.</i>

<https://ciox.ru/select-a-random-word-from-the-list>



software

text processor

bespoke software

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the right side of the frame, creating a modern, layered effect. The text 'bespoke software' is centered horizontally and rendered in a clean, lowercase, sans-serif font.

backup software

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the right side of the frame, creating a modern, layered effect. The text 'backup software' is centered horizontally and rendered in a clean, sans-serif font.

archiver

library programs

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the right side of the frame, creating a modern, layered effect. The text 'library programs' is centered on the left side of the image.

application software

spyware remover

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the right side of the image, creating a modern, layered effect. The text 'spyware remover' is centered horizontally and rendered in a clean, sans-serif font.

general purpose
software

driver

translators

generic software

spreadsheets

off-the-shelf
software

video editor

utility software

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the right side of the frame, creating a modern, layered effect. The text 'utility software' is centered horizontally and rendered in a clean, sans-serif font.

Home work

- ▶ Research advantages and disadvantages of application software. Create and Fill the table in

Application software	Advantages	Disadvantages
General purpose		
Specific purpose		
Bespoke		

- Send your table to your teacher

Reflection

- ▶ Write on colored paper where you failed to understand the topic were questions; everything is clear

