

# **Theme 1. SOFTWARE. WINDOWS. MS-OFFICE. UTILITIES. APPLICATIONS. INTERNET RESOURCES**

## **Classification Software**

**Program** - an ordered set of instructions (directives) performing PC.

**Software** - a set of programs that provide coordinated work PC and used for various tasks.

Software can be divided into three groups:

- **system:** operating system, service programs, drivers, etc. - provide your PC, the distribution of its resources, support dialogue with the user;
- **crafts:** text and image editors, databases, spreadsheets, etc. - provide a solution to various problems of human activity;
- **instrumental** - are used for the development, adjustment and development of other applications or system software. This is usually a programming language, such as, C ++, Pascal, Basic and others.

## Software Licensing

**There is copyright and should be respected.**

**License** - the legal document that defines the rules for the use and distribution of software.

By way of distribution (delivery, payment, restrictions on use) single out the following main groups Software:

- **commercial** - profit from its use by others, such as by selling copies;
- **free** (Freeware) - license agreement does not require the holder of payments (this is free software distributed to all comers);
- **open** - software to "open" source (allows anyone wishing to use the code for their needs and may help in the development of open application);
- **shareware** - program freely distributed for the purpose of review. If the user likes the program, he can pay the registration cost (try and buy) and obtain a password or "key", the introduction of which converts a fully functional trial program.

- **non-market** program (abandon ware) - former commercial programs that are no longer supplied to the market;
- **containing advertising** (adware) - software without restriction of functionality, but with compulsory display advertising that can be downloaded through the Internet without the user's knowledge. Antivirus programs often classify this mechanism as a "Trojan horse."

## **Operating Systems**

**Operating Systems (OS)** - a set of programs that load automatically when you turn on your computer and provides existing devices PC, exchange data between them, diagnose PC and more.

The operating system is an integral part of the program of the computer. The most common systems: MS DOS, OS / 2 firm IBM, UNIX firm AT & T, WINDOWS 95, LINUX etc.

**Shell** - add-on operating system, providing the user a visual and easy to work with PC. One of the most common shell is NC (Norton Commander).

**Command language** - a set of commands that are entered by the user from the keyboard to perform specified actions.

## *Windows*

*Windows* - a highly versatile 32/64-bit operating system with a graphical interface.

The first Windows version appeared in 1985, and in 1990 - Windows 3.0, which was a great success. Famous: Windows-95, in 1998 - Windows-98, Windows 2000, Windows XP, Windows 7, Windows 10.

*Windows* using scalable TrueType fonts. They do not contain raster (pixel) images of characters of fixed size and shape of the contours that can change their size.

Images of characters on the screen and in print output is made up of one - the principle of WYSIWYG (what you see is what you get).

*Windows* also use PostScript Type (Adobe Systems) fonts.

## **Windows interface**

On the desktop (Desktop) Windows are objects folder (name can contain up to 255 characters), shortcuts (icons) taskbar, standard (system) folders (shortcuts) - My Computer, Trash (Recycle Bin), etc.

**Interface** - means the relationship between man and computer.

**Menu** - a list of objects (points, team icons) in which is given a choice. The menu has a layered structure.

## **File system**

**File system** - a set of files and folders on external devices and applications that work with them. The most common files organization - FAT32 (File Allocation Table) and NTFS.

**File** (a set of documents) - organized program or set of data with its name and placed as one.

There are program files and data files.

Each file has a name and the type (extension).

## Tab. file extensions

- \* .Txt - text file
- \* .Bat - backup file
- \* .Doc - document file
- \* .Dat - data file
- \* .Hlp - file directory
- \* .Tmp - temporary file
- \* .S - source file in C
- \* .Bas - file program in BASIC
- \* .Com - executable
- \* .Dbf - database file
- \* .Dwg - AutoCAD file drawing system
- \* .Exe - executable file

**Root** catalog - main catalog every disk. The first catalog subordinated second, the second - the third, etc.

**Explorer**- tools for working with file systems: Organize files and folders, rename files and folders, and more. Explorer allows access to documents, folders, and programs using computer resources of wood and illustrates the organizational hierarchy of Windows.

## Windows Applications

**Graphic editor** *Paint* lets you create and edit pictures and save them in formats BMP image files and RSH. The editor has a minimal set of tools for image processing.

**Text Editor** *WordPad* - is a set of tools for preparing and printing documents.

**Calculator** - allows no complex calculations.

*Windows* supports the work with networks, email, multimedia.

### Service Software (Utilities)

**Utilities**- program support (service) purposes. To service software include archiving, application diagnostics, optimization, access restrictions and more.

Examples of tools;

- WRAR, PKPAK, PKUNPAK, LHA and others - create archive copies with possibility of preliminary compression of 20 to 90%;

- *Ccleaner* - a free program for cleaning the operating system from temporary and unnecessary files frees up hard drive space and improves the performance of the operating system;
- *WiseCare365* - for cleaning, tuning and optimizing PC.
- *RegOrganizer* - Editor registry and configuration files.

**Drivers** - special programs to control external devices. The new devices are enabled with little or no user intervention (Plug & Play).

### **A computer virus**

**A computer virus**- a small program written by a programmer skilled, capable of self propagation and perform various destructive actions.

Today, more than 50 thousand. Computer viruses. Computer viruses first appeared in 1986.

Historically, the emergence of viruses closely related to the idea of creating a self reproducing programs. One of the "Pioneers" is a virus



"Brain", created by Pakistani programmer Alvi. Only in the US this virus struck more than 18 thousand. Computers.

The viruses are only programmatically. To activate the virus infected file you want to upload. Some viruses are resident (constantly RAM PC) and can infect other files, format the hard drive.

Most viruses zarazhuyut executive program - files with .EXE and .COM.

The main sources of viruses are:

- floppy disk, on which the infected files;
- computer network, including e-mail system and the Internet;
- hard drive, which got the virus from infected programs;
- virus remaining in memory after the previous user.

The main features of infection by computer virus are:

- reducing the amount of free RAM;
- and slowing down the computer;

- unexplained (without reason) changes the size and date of last modification of files;
- Formatting a hard drive;
- strange message, musical and visual effects, etc.

Conventionally viruses can be classified as follows:

- Boot viruses or BOOT-viruses, infect boot-disk sectors. Very dangerous, can lead to complete loss of all information;
- file viruses, infect files.
- macro, zarzhuyut data files, for example, Word or workbooks Excel;
- viruses DIR: distort information about the file structure;
- worms, small zarzhuyut email. When you try to read the message the virus begins to read through their Internet 'body'. It is dangerous because the infected file actually contains the code of the virus.

To protect against viruses and use common tools:

- backup media;

- avoid the use of random and unknown programs;
- restart the computer before;
- limiting access to information, including physical protection of the floppy disk when copying files from it.

**Antivirus** - a program that eliminates computer viruses.

Viruses in its development ahead of antivirus programs, so there is no 100% guarantee of safety. Anti-virus programs can detect and destroy only known viruses.

Modern antivirus software packages have a special module - heuristic analyzer, which is able to examine the contents of files for code characteristic of viruses.

The following types of antivirus software:

- program detectors, designed to find infected files with other known viruses;
- Program doctors, for the treatment of infected discs and programs. The treatment program is the removal of the infected program the virus body;

- programs, auditors, designed to detect the virus files and find damaged files;
- doctors, auditors, designed to detect changes in files and system areas of disks in case of changes return them to the initial state.
- program filters designed to intercept calls to the system used for virus reproduction;
- Vaccine program: processing files and boot-sector for the prevention of infection by viruses known.

There are many different antivirus programs.

## **DRWEB**

One of the best antivirus software with powerful algorithm to find viruses. Polifah, is able to scan files in archives, Word documents and workbooks Excel, detect polymorphic viruses that recently, are becoming more common. Suffice it to say that the epidemic is very dangerous virus is stopped OneHalf DrWeb. The heuristic analyzer allows DrWeb found in

almost 90% of unknown viruses. When downloading an application first checks DrWeb itself on integrity, then tests the memory.

## **ADINF**

Anti-auditor drive ADINF (Advanced DiskINFOscope) allows you to find and destroy as existing ordinary, stealth- and polymorphic viruses, and completely new. Antivirus has a healing power Auditor ADINF - Adinf Cure Module - which can neutralize up to 97% of all viruses. ADINF loaded automatically when turning on the computer and boot-sector controls and files on disk (date and time of creation, length, checksum) to give notice of their change. Because ADINF makes disk operations to bypass the operating system, referring to functions BIOS, achieved not only able to detect active viruses on stealth-level interrupt Int 13h, but high speed disk check. If found boot-virus ADINF then simply restore the previous boot sector, which is stored in its table.

## **AVP**

Anti AVP (AntiVirus Program) relates to polifahiv in the process of checking memory, files, including archives, flexible, local, network drives, and system data structures, such as boot sector, partition table and so on. d. The program has a heuristic analyzer which is capable of finding nearly 80% of all viruses. AVP program monitors file system operations in the background, detects a virus infection until the real system.

### **Application software systems**

There are hundreds of thousands of applications varied use - from general purpose to specialist.

### **Word processing systems**

Word processors allow you to prepare documents on the PC. An example is the word processor Word, PageMaker and others.

## **spreadsheet**

**electronic table** (CPUs) - designed to work with tables of numbers. They can be stored in tabular form not only a large number of initial data and calculation results, but bonds (mathematical relationship) between them. An example of a spreadsheet is Excel, Quattro Pro, SuperCalc, Lotus and others.

Documents in the environment called Excel books. Each book consists of leaves, job, charts, macros, modules, language Visual Basic.

## **Database Management Systems (DBMS)**

**Databases**- a single centralized data repository particular subject area. Each application has access to the database through special programs that are called database management systems. The software product database is FoxBASE, FoxPro, Access, and others.

Types of organization of data and links between them:

- hierarchical (a tree) - ordering elements exist in the record, one element is considered major, others - subordinates.
- network - it is possible to install additional vertical hierarchical relationships are horizontal relationships.
- relational (from the English. relation - ratio) - in the form of tables.

## **PowerPoint**

*PowerPoint* - a system of preparation of various types of presentations. The presentation may use audio and video streams.

## **Systems of computer graphics**

There are two types of graphics: bitmap and vector.

**RasterGraphics** - an image composed of dots (pixels) that store information about brightness and color. Used in artistic practice. An example of raster graphics is Paint, Photoshop, CorelDraw and others.



**VectorGraphics** - images constructed using simple mathematical description of objects - line, circle, etc. It is used in engineering practice. Examples of vector graphics are AutoCAD, Illustrator and many others.

### **Systems of computer mathematics**

Mathematics computer systems designed to meet the challenges of mathematics: Mathcad, Maple, Mathematica, MatLAB, Derive and others.

### **Internet**

**Computer Network** - a group of connected computers that provide collective processing, use devices.

Networks are local, regional, global.

Any network are based on more powerful computers - servers.

To connect computers to the network requires proper networking equipment and software.

**Internet** (*Inter* - Total Net - Network) - a worldwide computer network that integrates into a single unit, hundreds of thousands of diverse local and global computer networks.

International Network was created in 60 years in the military program, and then developed into a global network.

For the organization of computer nets in the required protocols. To date, worked out a standard TCP / IP (Transmission Control Protocol / Internet Protocol - sending packages Management Protocol / Internet puncture). Based on this standard are World Wide Web World Wide Web (simplified Web, WWW).

Each computer on the network has its unique digital number (IP address) corresponding to the unique symbolic name.

To use the required Internet browser (browser - from the English. Browse a book, flip), such as MS Internet Explorer.

## Data Feeds

Data transfer is realized through various channels: telephone cable; radio communication; electrical wires. The most reliable channel related special channel connection (leased line).

**Provider** - an organization that provides access to the Internet through certain grid nodes (server).

**Modem** -converts the digital signal from an analog signal to a PC to transfer it to the line. The modem has to be fast.

Connecting to the Internet via a dedicated network provides high speed data transfer up to 100 Mbs.

## Internet

*E-mail* - e Mail allows you to organize a unified mail system within a heterogeneous enterprise network.

*FTP* and *TFTP* - means of access to file archives sharing files between local and remote computers.

**Teleconference** - an email is sent to one address and automatically distributed to all conference participants (subscribers).

*WWW* based on hypertext technology, has a user-friendly interface; searches for information on the hypertext web.

*Web* - a document (Web - pages) - an electronic document written in a format HTML (\* .htm) and contains hyperlinks.

**Search Engine** - a special unit on the Internet, which is looking for, collecting and ordering information is available on any other network servers, for example, yandex.ua.

## **Office 365**

*Office365* cloudy paid online service from Microsoft. Office365 provides complete software suite Office, as well as other services, such as additional cloud storage OneDrive.

Cloudy format means that the data stored in the data center, not on the PC, providing users with access to documents through the browser on different devices.