Basic concepts of software learning tools

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ABSTRACT

Computers are universal devices for processing information. Unlike a telephone, tape recorder, or television, which perform only those functions that are predetermined where personal computers can perform any information processing activity. The article provides an overview about the history of software. The types of software are classified and some software statistics are given.

Dasturiy ta'minotni o'rganish vositalari haqidagi asosiy tushunchalar

ANNOTATSIYA

Kompyuterlar axborotni qayta ishlash uchun universal qurilmalardir. Telefon, magnitofon yoki televizordan farqli o'laroq, faqat shaxsiy kompyuterlar har qanday ma'lumotni qayta ishlash faoliyatini amalga oshirishi mumkin bo'lgan, oldindan belgilangan funksiyalarni bajaradi. Mazkur maqolada dasturiy ta'minot tarixi haqida umumiy ma'lumotlar berilgan. Shuningdek, dasturiy ta'minot turlari tasniflanadi va ba'zi dasturiy ta'minot statistikasi berilgan.

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Основные понятия средств обучения программному обеспечению

АННОТАЦИЯ

Компьютерные устройства, являются универсальными платформами, для обработки информации. В отличие, от телефона, магнитофона или телевизора, которые выполняют только те функции, которые предопределены, персональные компьютеры могут выполнять любую деятельность по обработке информации. В статье представлен обзор истории программного обеспечения. А также классифицируются типы программного обеспечения и приводится некоторая статистика программного обеспечения.

Computers are universal devices for processing information. Unlike a telephone, tape recorder, or television, which perform only those functions that are predetermined where personal computers can perform any information processing activity. To do this, it is necessary to draw up an exact and detailed sequence of instructions for the computer in a language it understands, that is, an information processing program.

The computer itself has no knowledge of any of its applications; all this knowledge is concentrated in programs running on a computer. Therefore, the often used expression "the computer did" means exactly that a program was executed on the computer that allowed you to perform the corresponding actions. By changing programs for a computer, you can turn it into a workplace for almost any specialist. Programs can use various input and output devices during their execution.

Thus, for the effective use of a computer, it is necessary to know the purpose and properties of the programs needed when working with it. A set of programs designed to solve problems on a personal computer is called software. The composition of the software for a personal computer is called the software configuration.

Software is a set of programs that control the operation of a computer or automated system. The software has its own history of development, which is closely related to the development of the first and is clearly reflected in the background of the interface: user – computer (interface is a set of tools and rules that allow interaction between devices, programs and people).

The software has its own history of development, which is closely related to the development of the first and is clearly reflected in the background of the interface: user – computer (interface is a set of tools and rules that allow interaction between devices, programs and people). Programming for the 1st generation computer was done in machine codes and the user was given all the resources to solve his problem and he worked directly with them.

Even the first operating systems, which appeared in the late 1940s and were a set of simple I / O programs with a total volume of several hundred instructions, did not change anything in the essence of the matter, since users either created their own service programs for their own purposes. In the mid-1950s, most 2nd generation computers ran on operating systems that allowed batch processing: The system collected programs prepared by different users, executed them in quick succession, thereby reducing operator effort and allowing better planning of the machine's computing resources.

Many operating systems of the time included libraries with standard and commonly used routines and programs, as well as high-level translators from the first programming language, Fortran, developed and implemented by IBM in 1956.

In the early 1960s, the first time-sharing operating systems appeared that allowed the processor to switch between tasks, giving the illusion that many users were working on computers at the same time. The most rapid development of the operating system of that period began with the advent of 3rd generation computers with hardware support for the main elements of the operation of the operating system: interrupt systems, means of protecting RAM from unauthorized access, as well as an advanced input-output system, developed firmware, etc.

The complication and expansion of the computer software environment not only significantly expands its functionality, optimizing the management of complex computing processes and resources in multi-, teleprocessing and interactivity mode, but also by the user not only knowledge of a high-level programming language, but also a task management language, which is a task interface user with operating system – environment.

However, this additional knowledge more than paid off in the form of exchanges: a high-level programming language for developing application software, and high-level languages for task management providing an interface to a computer software shell.

Only the 4th generation, in the depths of which PC-based personal computer technologies appeared, again allowed mass users to get closer to computing resources, but not to the hardware environment itself.

And if the first PC with a very simple operating environment still allowed the user to perform some basic resource management functions, then as PC performance grew, so did the system software shells, not only because of the complexity of the operating system, but also because of the appearance of shells for operating systems themselves. Such shells, such as MS Windows, using the operating system as the software core, significantly increase the intellectual level of the user interface – a computer that at the same time is further away from the hardware component.

Given the mass – personal nature of the use of a personal computer, such a solution is the only correct one – physically maximum approach of computer resources to the user, removing the internal kitchen of a personal computer as much as possible and raising the level of a logical interface with it. And if a few years ago, as in the case of the previous generation of computers, the user of a personal computer had to use the command language of the operating system (MS-DOS, CP / M, Unix, etc.), then with the advent of Windows shells, he got the opportunity work with the resources of a personal computer at the logical-graphical level, while consuming only the most general knowledge about the system and software used by most application users.

The rapid development of new information technologies and the expansion of their scope has led to intensive software development. Suffice it to say that in 1996 the world community spent more than $110 billion on software. What's more, trends in software development show that value dynamics show a steady upward trend, around 20% per year.

Software for information systems is a set of software and documentation tools for creating and operating data processing systems using computer technology.

It can be divided according to the functions performed by the software:
• System programs (sometimes called basic software);
• Application programs.

System systems are primarily operating systems and programs that are part of the operating system (for example, drivers for various computer devices (from the English word "drive" – control), i.e. programs that control the operation of devices: drivers for scanners, printers etc.). With the exception of operating systems, service software (also called a service or utilities, from the English word "Utilize") still refers to the maintenance of hard drives, archives, antivirus programs, etc.

Applications include programs for solving problems in various areas of human activity (accounting programs, text and graphics editors, databases, expert systems, translators, encyclopedias, educational, test and game programs, etc.).

The operating system is a set of interacting programs that ensure the operation (functioning) of a computer.

Operating system programs are an integral part of modern computers, and only together with them do they form what is now called computer information processing systems. Without an operating system, modern computers do not work. In order for its expensive nodes to perform their functions and, metaphorically speaking, "revive them", one or another operating system must be installed on a computer, and especially on a PC. The installation of the operating system (installation) is carried out by burning its programs from a licensed CD to the computer's hard drive. This procedure is performed by a special program recorded on this disc. When the CD drive is turned on, the computer starts executing this program at the appropriate command, as a result of which the operating system programs are written to the hard disk in a certain order.

Some of these programs are called resident programs because when the computer is turned on they are read from the hard disk into RAM, where they permanently reside and perform the specified functions, while others are called transient programs because they are periodically called into RAM to perform special tasks. When the computer is turned off, all programs are stored on the hard disk, and when the computer is turned on, a special program loader writes the resident part of the operating system into the computer's memory.

The development of operating systems went hand in hand with the development of programming languages and the improvement of computer hardware. The main goal set before the developers of the operating system was the maximum automation of the processes of executing programs on computers, the most rational use of their hardware and the most comfortable interaction between a person and a machine.

Improving the interaction between the user and the computer (improving the human-machine interface) was accompanied by the introduction of a convenient dialogue and the presentation of various services for the user. As a result, systems of dialog programs were created, the so-called command processors and other software sets that perform interface functions.

The problem of storing many programs and data on floppy disks, their rational use – loading into computer memory, erasing from there, writing to other drives, changing names, etc. – was solved by creating software file management systems.

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