*1. Our university: brief historical survey.*1859.

Forestry faculties were established at the Gory-Goretsky Agricultural Institute and in Minsk Polytechnic Institute. They became a basis for the foundation of the Forestry Institute in Gomel. Sverdlovsk, transferred to Minsk. **10 faculties**. Forestry, Forestry and Wood Technology, Organic Substances Technology, Chemical Technology and Engineering, Print Technology and Media Communications, Economic Engineering, Information Technology, of Extra Mural Studies, of Pre-University Training, of Social Professions.

*2. Our university: scientific and research work.*

The BSTU is the leading partner of national research programs “Forests of Belarus” and “Monitoring”. scientific journal “Proceedings of BSTU". modern laboratories "game stream", epam, technical groups and leverex

*3. BSTU today. Student life.*

campus has five. Student Council organizes. festivals “Student Spring”, “Student Autumn”, “Mother’s Day”, contests, groups “Magical Needles”, “Needlewoman”, “Do It Yourself”. professor vocal “Akavita”, dance “Gratsiya”, literary “Poshuk”, “Pamyat”, “Krinitsa, “Spadchyna”, modern sports complex

*4. Science and technology: the importance of inventions to the progress of humanity.*

Modern civilization is everything that has been achieved thanks to science. Science is systemized knowledge received through experimentation, observation and study. In their work scientists use different methods and techniques. They build up hypotheses, theories, perform experiments, explore, discover and invent.

Аmong the achievements of science are the discovery of penicillin by Alexander Fleming; the invention of the electric light bulb by Thomas Edison; the invention of the telephone by Alexander Bell; the invention of radio by Alexander Popov; the invention of television and the Internet (Tim Berners-Lee). goal of science

The branches of science: Formal (mathematics, logic), natural (natural phenomena). Social (human behavior and societies)

*5. Science and technology: inventions, famous scientists and inventions.*

**Martin Cooper** (mobile phone) **Philip Kahn** (solution for instant

*6. IT Industry on Belarus.*

3 entered the top-100 of the largest world companies in IT sphere: EPAM Systems, IBA Group and Intetics Co. The Hi-Tech Park 2005. Consumers **Wargaming.net** released World of Tanks 2011. 90тыс, set a record registered in the Guinness Book of Records. **TechArt Group** for the United States and Western Europe. **IBA Group** in Central and Eastern Europe the banking sector, public services**. EPAM**

*7. Information systems and Technologies, types of computers, positive and negative impact of IT.*

**IT** is the application of computers to store, study, retrieve, transmit, and manipulate data, or information. **IS** is a system designed to create, store, process or distribute information. pencil and paper. PC, DESKTOP, LAPTOP, SMARTPHONES, WORKSTATION, SERVER, WEARABLE COMPUTERS(are integrated into)

*8. Computer Essentials.*

The hardware consists of CPU, memory and peripherals. The **CPU** is an electronic circuit that executes computer programs. CPU operations: fetch, decode, execute, and write back. **motherboard** has slots and connectors for connecting PC components, such as: video cards, RAM, processor, data drives and peripherals. **hard disk** stores data and provides computer..**RAM** temporarily store data. ROM contains the startup programs used for bootstrapping a computer.

*9. The Development of Computers (generations), Artificial Intelligence.*

used 1. vacuum tubes, expensive and enormous. relied on machine language, solve one problem. 2. transistors, assembly languages. 3. integrated circuits. Transistors miniaturized, placed on silicon chips, called semiconductors. interacted with computers through,perform different operations 4. microprocessors. integrated circuits built into a silicon chip. programming languages. connected on a network, led to the. 5. use high-level. parallel data processing, superconductors. 6. are based on artificial intelligence. AI is an imitation of natural intelligence in machines that are programmed to learn and imitate the actions of people.

*10. Computer Networks and Network Topology; LAN, WAN, MAN, etc.*

Network is a system of connected computers, peripherals and communication devices that can exchange data and share resources. LAN limited to a single building, PC can be linked directly or through a hub or switch). A **hub** link computers and peripherals in cabled network. Data is sent to all connected ports. **switch** in the same way as a hub but IP. **wireless access point** is a device that allows using radio waves rather than cabling.

**Client-server network**. **Peer-to-peer networks**. linked together using cables and a hub or with a wireless connection. have equal status, access data.

**Ring topology** a peer-to-peer. The devices are connected in a ring and data travels in one direction using a control signal called a ‘token’. If any device fails.. It is inconvenient to modify it, because for this you need to disconnect the network. **Bus (line) topology** a peer-to-peer. Devices are connected to a main (bus) cable using special T-connectors. Failure of one device does not affect the rest of the bus network. Simpler to troubleshoot because sections can be isolated. -The bus cable has a limited length and if it fails..Performance slows down. **Star topology** client-server. A server is connected to the other devices through a switch or hub. The most reliable because the failure of one device does not affect other devices. Simple to troubleshoot. Easy to add extra devices. does not greatly affect performance. - installation expensive. If the hub/switch fails..

The largest **WAN** (Wide Area Network) is the Internet. Smaller examples: national ATM net used by a bank to provide customers with access to cash.

**IP** is a unique address number that is allocated to devices on a computer network. unique to identify. private or public **MAC Address**(Media Access Control) is a unique 48-bit number assigned by the manufacturer to any hardware device. only on LAN. A **protocol** is a description of the format that digital data should be presented and the rules for hardware/software to transmit that data. **IP** send data to the correct device **The Transmission Control Protocol (TCP)** to exchange data directly between two networked computers. **HTTP** to transfer web pages

*11. Internet, WWW.*

The Internet is a global network connecting millions of computers. allows computers packets of digital data. uses TCP, IP. Packets of data are transmitted through a variety of cables, routers and host computers.

The Internet consists of many systems that offer different facilities to users. **WWW** a collection of files or pages containing links to other documents on the Net. Most Internet services are now integrated on the Web.

site that I

*12. Software classes and types. Programming languages.*

Computer software is a general term used to describe a collection of computer programs, procedures and documentation that perform some tasks on a computer system.

**System** coordinates the complete system hardware and provides an environment or platform for all the other types of software to work in. essential for..computer system to function. **Application** help the user perform different tasks. non-essential.

**Programming** to write, test, debug, and develop. for creating. editors, debuggers, compilers and Integrated Development Environments (IDE) **subcategories**: **Freeware**. **Shareware** paid, trial period. **Open Source** available to use, modified, shared with anyone. **Closed Source** code is the intellectual property of. authors can copy, modify, share the software. **Utility** subgroup of system software. manage the performance of hardware and software. Antivirus and security software; File compressor; Disk cleaner; Disk defragmentation software; Data backup software.

High-level languages are closer to human than machine languages.

*13. Operating systems*

OS is a powerful program that manages and controls the software and hardware on a computing device so as to make the device behave in a predictable but flexible way. acts an interface between. 1. OS manage the primary and secondary memory. All the memory devices such as hard disk and pen drive are managed by OS.2. with drivers controls device communication. 3. decides which process will get the processor when and for how long. 4. allocates and deallocates the resources, controls System Performance. 5. by using password checks unauthorized users to access the data and program.

Types of Operating Systems:

**A Real Time OS** time bound OS, fixed time limits. Processing has to be done in a certain period of time or the system will fail. Air Traffic, Control Systems. **Single User Single Task OS** one program can be executed at one time. programs have to be placed in a queue to be performed. **Single User MultiTasking** allows a single user to work with several programs at the same time. Most people use this examples Mac OS, Windows. **Multi User OS** allows different users on different computer to access a single System. A user at the terminal or desktop, through a network gets access to the system and other machines connected to the system, such as printers.

The most common operating systems are Windows, Mac OS and Linux.

**Chrome** **OS** based on Linux. simple to use, suitable for inefficient devices. much safer than Windows because most of the apps are downloaded from the Play Store and it also has a built-in antivirus program. is a cloud system. All Google Internet services are available to it, including Google Docs, Google Drive and Google Photos. system is not powerful. Many applications work only with Internet access.

*14. Computer viruses and Computer Security.*

A **computer virus** is a malware program that is written to gain access to a computer without its owner’s permission.

**1. Direct Action Virus** gets into the main memory, affects all programs/files/folder. It doesn’t delete system files but changes the system’s performance. It can affect all .exe and .com file extension. **2. Overwrite Virus** deletes the data and replaces the old code with their own. They replace the file content without changing its size. The only way to get rid of this virus is to delete all the infected files.

**3. Web Scripting Virus** can affect web browser. It is used to attack large sites like social networking, user review or email. Protection: Use real-time antivirus software, disable script, use cookie security **4. Directory Virus** (also known as Cluster virus) infects the file by changing the DOS directory information. When you run a program, DOS first loads and executes the virus code before running the actual program code. **5. Memory Resident Virus** lives in primary memory (RAM) and get activated when you switch on the computer. They affect all files currently running on the desktop. **6. Macro Virus** is written in the macro language, so it can run automatically when the document is opened and it can easily spread to other files too. They are generally hidden in documents that are shared via email. Protection: Disable macros and don’t open emails from unknown sources and use antivirus software. **7. Companion Virus** does not modify the existing file. It creates a copy of a file with a different extension (usually .com) which runs in parallel with the actual program. It can delete the original files. Can affect: All .exe files. **8. Trojan Horse** can destroy or modify all the files, crash the computer and give hackers remote access to your PC. Protection: Use antivirus software.

**9. FAT Virus.** FAT or file allocation table is a section of storage disk. A FAT virus changes the index and the computer can't allocate the file. **Protection** don’t open emails from unknown sources, don't download files from unknown sources and use antivirus software