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1. Робота в середовищі мобільної ОС.
    1. Опишіть головне меню вашої мобільної ОС, який графічний інтерфейс вона використовує?

        The IOS Home menu is a set of icons called Springboard that allow you to conveniently access any of the following services offered by default or later downloaded through the app store: apps, view widgets, find the apps you want, or customize how they appear on the Home screen.

2. Опишіть меню налаштувань компонентів мобільного телефону.

    In the Settings menu, you can change various phone settings, such as Wi-Fi, Bluetooth, display, sound (volume, calls), notifications, apps, security and privacy, battery power, iCloud, apps, advanced settings, and more.

3. Використання комбінацій клавіш для виконання спеціальних дій.

    Turning off the phone: press the on/off and volume up or down keys simultaneously

    SOS call: two options the first is to quickly press the power button 5 times or do the same as with turning off the phone in the first.

    Quickly switch between applications: Slide your finger across the bottom of the screen.

4. Вхід у систему та завершення роботи пристрою. Особливості налаштувань живлення батареї.

    To log in on IOS, press the power button and swipe up on the screen. This will bring up the screen unlock mode using Face ID or entering a password.To turn off the device completely, hold down the power button and simultaneously turn down the volume. After that, the power slider will appear on the screen, which you can use to turn off the device.In iPhone settings, there's a Battery section where you can view battery usage statistics, find out how long the device has been in standby mode, and turn on power saving mode.

Відповіді на контрольні запитання:

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1. Наведіть приклади серверних додатків Linux для сервера баз даних, серверів розсилки повідомлень та файлообмінників.

- **Database server:** MySQL, PostgreSQL, MongoDB, SQLite, Microsoft SQL Server (using Wine or custom solutions)
- **Messaging servers:** Postfix, Sendmail, Exim, Qmail, Courier
- **File sharing services:** Samba, vsftpd, ProFTPD, Pure-FTPd

2. Порівняйте оболонки Bourne, C, Bourne Again (Bash), the tcsh, Korn shell (Ksh) та zsh.

- **Bourne Shell (sh):** Developed in the 1970s, minimal functionality, few built-in features, minimal feature set.

- **C Shell (csh):** Appeared in 1978, has some convenient features for interactive use, but limited compared to other shells, limited features compared to modern shells.

- **Bourne Again Shell (Bash):** Released in 1989, a standard shell with rich functionality and a wide range of features, many built-in functions, scripting, shell management and much more.

- **TENEX C Shell (tcsh):** Released in the 1980s, has a command history, the ability to edit the command line, etc., has many features such as command history, variable support, etc.

- **Korn Shell (Ksh):** Released in 1983, a powerful shell with many Bash-like features, has a large number of Bash-like features.

- **Z Shell (Zsh):** Released in 1990, an extensible shell with many additional features such as autocomplete, themes, plugins, etc. an extensible shell with many additional features such as autocomplete, themes, plugins, etc.

3. Для чого потрібен менеджер пакетів. Які менеджери пакетів ви знаєте у Linux?

A package manager is a tool that allows you to easily manage software on an operating system by installing, updating, and uninstalling programs. It helps to automate the process of managing programs and their dependencies while ensuring system security and stability.
The most famous of them are:

- APT (Advanced Package Tool)
- YUM (Yellowdog Updater Modified)
- DNF (Dandified YUM)
- Pacman
- Portage
- ZYpp

4. Які засоби безпеки використовуються в Linux?

Linux has a number of security tools that help protect the system from various threats. Some of them are built into the operating system itself, while others can be installed additionally.
For example:

- **Firewall:**
  - They allow you to control network traffic and protect your system from unwanted connections.
- **SELinux (Security-Enhanced Linux):**
  - SELinux is a set of security extensions to the Linux kernel that provide additional layers of security, allowing programs to restrict access to system resources.
- **AppArmor:**
  - AppArmor is another access control system that allows you to set security profiles for individual programs. It allows you to restrict the access of programs to files, directories, and system resources.
- **Data encryption:**
  - Linux supports various methods of data encryption, including encrypting disk space with LUKS (Linux Unified Key Setup) or encrypting files and directories with various tools such as GPG (GNU Privacy Guard).

5. Чому використання віртуалізації зараз стало таким актуальним?

- **Efficient use of resources:** Virtualization allows you to divide a physical server into multiple virtual machines, which allows you to make better use of hardware resources. The same physical servers can be used for different tasks and applications, which helps save money and energy.
- **Reduced hardware costs:** Instead of purchasing multiple physical servers for each application or task, companies can use virtual machines.
- **Speed of deployment and scaling:** Virtual machines can be quickly created, cloned, and deployed, making it easier to deploy new environments and scale infrastructure as needed.
- **Isolation of environments:** Each virtual machine has its own isolated environment, allowing you to run different applications and services without affecting each other.

- **Testing and development:** Virtual machines are ideal for software testing and development because you can quickly create and destroy environments for different stages of development.
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6. Як ви розумієте поняття контейнеризації?

   Containerization is a virtualization method that allows you to package and execute software and its dependencies together in a separate environment (container). Each container has its own isolated environment, which includes all the necessary libraries, configuration files, and other resources needed to run the program.

7. Які переваги/недоліки використання програмного забезпечення з відкритим кодом?

- ## Advantages:
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- **Free access to source code:** Users can view, modify, and adapt the source code of the software to their needs, allowing for greater flexibility and control over the program.
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- **Community support:** Many open source projects have active communities of developers and users who provide assistance, solve problems, and make their own contributions to the program's development.
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- **Greater security:** Most open-source programs have a large number of open source reviews, which helps to identify and fix security bugs faster.
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- **Low licensing costs:** Using open source software usually does not require the purchase of expensive licenses, which can reduce IT costs.
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- **Wide range of programs:** There are a wide variety of open source programs for different needs, allowing users to choose the most suitable option.
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- ## Disadvantages:
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- **Lack of guarantees:** Free and open-source software often comes with no guarantee of compliance with requirements, as well as no support and maintenance.
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- **Less support:** In some cases, it can be difficult to find answers to questions or get support from the community for some open source projects.
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- **Insufficient functionality:** Some open source programs may have limited functionality or may not meet user requirements.
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- **Compatibility and integration:** Sometimes there may be problems with compatibility and integration of open source programs with other programs or systems.
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8. ***Скільки активних віртуальних консолей (терміналів) може бути у процесі роботи Linux по замовчуванню. Як їх викликати та між ними перемикатися? Наведіть приклади?

When Linux is running, 7 active virtual consoles (terminals) with numbers from tty1 to tty7 can be opened by default.

To switch between them, you can use keyboard shortcuts. Here are some of them:
Switch between consoles tty1-tty7: Ctrl+Alt+F1...F7
Some systems may also support more virtual consoles, such as tty8, tty9, and so on.

To open new virtual consoles, we can use the openvt command.
This command will open a new virtual terminal and automatically switch you to it.

9. ***Яка віртуальна консоль (термінал) виконує функцію графічної оболонки?

The virtual console (terminal) that serves as a graphical shell is usually called tty7. This virtual console typically runs a graphical user interface (GUI) such as X11 or Wayland, which provides a convenient environment for running graphical programs and interacting with the user via mouse and keyboard.
This virtual console is reserved for graphical mode and allows users to interact with a variety of graphical applications and desktop environments such as GNOME, KDE, Xfce, and others.

10. ***Чи можлива реєстрація в системі Linux декілька разів під одним і тим же системним ім’ям? Які переваги це може надати?

Yes, this process is also called "terminal multiplexing". For example, you can open multiple terminal windows or log in to multiple SSH sessions with the same user.
Benefits may include:

- **Increased productivity:** Users can perform multiple tasks or processes simultaneously without having to log out of the current session.
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- **Ease of management:** For system administrators, this can be a convenient feature to remotely manage and administer multiple sessions with a single username.
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- **Performance monitoring:** The user can monitor and interact with various processes in different terminal windows.
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- **Avoiding lockouts:** If one session is blocked or becomes unavailable, the user can easily switch to another active session.
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