

Hello friends,

I hope you're all doing well.

The following exercises are not exam questions, but rather open-ended prompts whose answers can often be found online, through chatbots, or even in technical interviews. These are intended to encourage deeper exploration and self-directed learning based on your current knowledge.

We've selected these questions based on real-world experience and past exam patterns to help you better understand the types of concepts that appear in the LPIC exam. Many of the questions don't have a single correct answer — instead, they are designed to broaden your perspective and understanding.

Please be kind and patient with yourself as you write and research your responses.

Please complete the following exercises using the same format as the directory structure below. Combine your answers into a single PDF file named `answer.pdf` and submit a push request.

📁 Reference format:

[https://github.com/devopsdoctors/Academy/tree/main/L1-JavanPahlevanan/Exercises/T\(x\)/name-family\(emailAddress\)/answer.pdf](https://github.com/devopsdoctors/Academy/tree/main/L1-JavanPahlevanan/Exercises/T(x)/name-family(emailAddress)/answer.pdf)

📄 Sample answer file:

[https://github.com/devopsdoctors/Academy/tree/main/L1-JavanPahlevanan/Exercises/T1/ali-farhadian\(alifrd49@gmail.com\)/answer.pdf](https://github.com/devopsdoctors/Academy/tree/main/L1-JavanPahlevanan/Exercises/T1/ali-farhadian(alifrd49@gmail.com)/answer.pdf)

TIP: It's clear that this is the second exercise, friends. This was just a repetitive example.

1. In **fdisk**, when using the **p** (print) command, there is a column labeled "sectors."
What does "sector" refer to in this context?
2. There are three types of servers mentioned.
Please summarize your partitioning recommendations for each:
 - Linux desktop systems
 - Linux servers used for databases or web services with extensive logging
 - Linux servers used in university labs or staging environments where multiple users require individual home directories and personal storage space
3. How does an operating system run multiple applications when the total available RAM is less than the combined memory requirements?
Please summarize:
 - How processes are scheduled to run on the CPU
 - How process data is loaded into RAM
 - What happens when RAM is insufficient for a new process
 - How and when the operating system uses disk space (paging and swapping)
 - The memory management strategies involved (e.g., demand paging)
 - Whether all pages of a process must be loaded into RAM for execution
4. What is the Translation Lookaside Buffer (TLB), and what role does it play in memory management?
5. What are a page, a virtual page, and a context switch?
Additionally, how does increasing swap space affect context-switching performance?
How does page size influence these effects?
6. What is a huge page?
Please explain its purpose and when it is used.
7. What is memory fragmentation in RAM, and what problems can it cause?