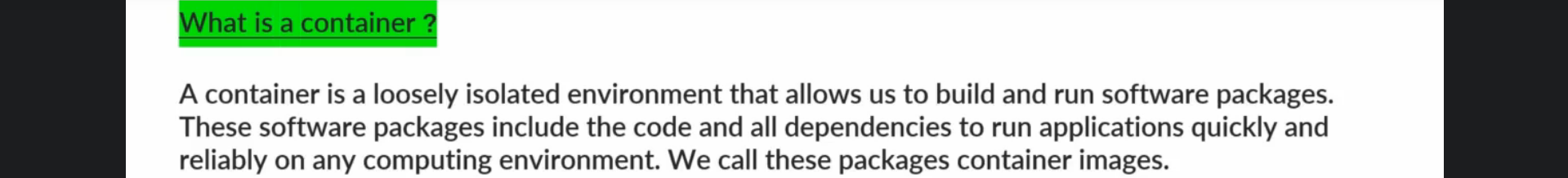
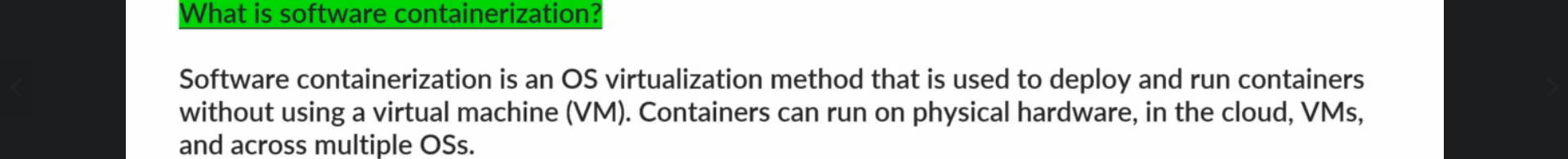
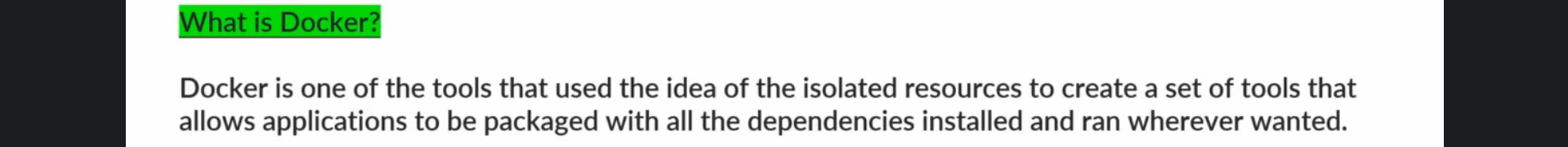
1. **Agenda**:
   1. **What is container?**
   2. **What is Software Containerization?**
   3. **What is Docker?**
2. Even though, we discussed a lot in the last lecture a lot about these, let’s still have a look at the formal definitions of them.
3. 
   1. A container is a **loosely isolated environment** that allows us to build and run software packages **alone in an isolated manner inside your server**.
   2. Similarly, you can have any number of containers running isolated in side **one server**.
   3. So, for 100 microservices, you don’t need 100 servers. Maybe 5 servers would be sufficient. Because your services are so small that you don’t need a separate physical or virtual machine.
   4. When we say container, it means Software Package = Code + Dependencies.  
      Dependencies = Java Installed + Spring Boot Dependencies + Tomcat etc.  
      We call these packages as container images.  
      With just one command, we can run the image to make entire app up and running within a matter of seconds.

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| 1. Running multiple containers (means apps) on a single server so **cost effective**. |
| 1. Multiple instances on the fly where we need to **scale up or down as per demand**. |
| 1. **Portability**: Container image can be run on any computing environment such as AWS, GCP, Azure. |
| 1. **Flexibility:** Can run on physical/virtual machine, Cloud and across multiple Oss. |

1. 
   1. Software containerization is an OS virtualization method that is used to deploy and run containers without using a virtual machine.   
      **Remember**: Each container is an app running isolated in its environment and earlier, to run an app, we needed a separate virtual machine.
   2. Virtual machine is a virtualization concept where a heavy big physical machine is split into small virtual servers,   
      similarly, software containerization is also an operating system virtualization where you can create isolated environment as if they are running in a separate operating with the help of container.
2. 
   1. To create image, run image as container, scale up/down, deploy.
   2. Docker is not the only tool that provides containerization but famous one which is adopted by most of the Fortune 500 companies.