**Research task – bootcamp – 9.5.23**

Task Research CI/CD pipeline look into:

**Jenkins**

[Getting started with the Guided Tour (jenkins.io)](https://www.jenkins.io/doc/pipeline/tour/getting-started/)

*What is it*?

“Jenkins is a tool that is used for automation, and it is an open-source server that allows all the developers to build, test and deploy software. It works or runs on java as it is written in java. By using Jenkins we can make a continuous integration of projects(jobs) or end-to-endpoint automation.” [What is Jenkins? - GeeksforGeeks](https://www.geeksforgeeks.org/what-is-jenkins/)

*How they are involved in the Ci/CD pipeline.*

Combines with other tools to automate the testing and software building. This helps support early sight of errors and getting that continuous feedback to be able to deliver deployable code more frequently.

[What Is Jenkins? How & Why To Use It? (lambdatest.com)](https://www.lambdatest.com/blog/what-is-jenkins/)

**Docker**

[Get Docker | Docker Documentation](https://docs.docker.com/get-docker/)

*What is it?*

Gives the ability to run applications in a container (isolated environment)  
   
*how they are involved in the Ci/CD pipeline*

Used to develop code locally that is then shared via these containers. Docker can then be used to push applications to different environments where automated and manual tests can be done.

[Docker overview | Docker Documentation](https://docs.docker.com/get-started/overview/)

**Docker Swarm**

*What is it?*

Allows for scaling of the docker containers   
 *how they are involved in the Ci/CD pipeline.*

Allows for replication of containers where dev work can be done

[What is Docker Swarm Mode and When Should You Use It? (howtogeek.com)](https://www.howtogeek.com/devops/what-is-docker-swarm-mode-and-when-should-you-use-it/)

Ansible

What is it?

“Ansible® is an open source IT automation tool that automates provisioning, configuration management, application deployment, orchestration, and many other manual IT processes. Unlike more simplistic management tools, Ansible users (like system administrators, developers and architects) can use Ansible automation to install software, automate daily tasks, provision infrastructure, improve security and compliance, patch systems, and share automation across the entire organization.”  
[What is Ansible? (redhat.com)](https://www.redhat.com/en/technologies/management/ansible/what-is-ansible)

*how they are involved in the Ci/CD pipeline.*

Facilitates the build and scaling of automation

**Terraform**

What is it?

“Terraform is an infrastructure as code tool that lets you build, change, and version cloud and on-prem resources safely and efficiently”

[What is Terraform | Terraform | HashiCorp Developer](https://developer.hashicorp.com/terraform/intro)

*how they are involved in the Ci/CD pipeline.*

“automate infrastructure tasks. It is used to automate the provisioning of your cloud resources”

[Terraform Tutorial for Beginners : Everything You Should Know (k21academy.com)](https://k21academy.com/terraform-iac/terraform-beginners-guide/)