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Module 1.3 Assignment: The History of DevOps

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The History of DevOps

What is DevOps?

DevOps, or Development Operations, is the approach to software development that aids teams to build, test and release software in a shorter lead time. It is a combination of cultural philosophies, practices, and tools all with the aim to deliver applications and services swiftly. The lean movement, the agile manifesto, and the continuous delivery movement all have an ingredient that makes a delicious DevOps cake.

The Lean Movement

First, Lean Software Development refers to the concept of optimizing efficiency and emphasizes minimizing waster in the software development process. It started off as the Lean Manufacturing Movement from the automotive industry. Henry Ford integrated a mass production system for his company that allowed his business to fabricate and assemble components of his cars in a short span of time rather than days and weeks. The system allowed for not only swift production in manageable chunks but the components of the process can be changed with ease. Eiji Toyoda, nephew of the founder Toyoda, met with Ford to learn about the process. It was learned the process would not carry over across the seas so the two teams developed a new system of production in the late 1900s. The Goal was for faster product, lower costs, shorter lead time, higher quality, and more variety. This idea became the Toyota Production System or the Toyota Way philosophy which carried on across multiple industries. From 1991-2003 several books would coin the term Lean, that took great observations from the Toyota Way in order to develop the principles of Lean for software engineering and the development process. In brief the principles are:

1. Identify Value
2. Map the Value Stream
3. Create Flow
4. Establish Pull
5. Seek Perfection

The Lean Movement created a foundation for many other modern methodologies including DevOps. The framework of lean can be applied to DevOps to help enhance the workflow through waste elimination, customer value orientation and allows for continuous improvement.

The Agile Manifesto

The Agile Manifesto released in 2001 that composed off the fundamental principles and core values for software development. The need for the manifesto sprouted after traditional software development in the 90s faced challenges in regards to adapting to changing project requirements. The four values that came from these challenges are:

1. Individuals and Interactions over process and tools
2. Working software over comprehensive documentation
3. Customer Collaboration over contract negotiation
4. Responding to change over following a plan

In DevOps, incorporating agile principles and practices enables teams to release software faster and more efficiently. It can be thought that DevOps is another more evolved for of agile practices but using them both in unison aids for better software development. For instance, where agile emphasizes the flow of software from ideation to code completion, DevOps carries out the focus to delivery and maintenance.

The Continuous Delivery Movement

The Continuous Delivery Movement grew out from agile as it is a software practice that highlights getting code changes into production quickly, safely, and sustainably. In relation to DevOps, Continuous delivery aims for speed through automation of building, testing and preparation of releases. Popularized the early 2010s, the core of Continuous delivery is:

1. Always deployable software
2. Automated Build, test, and release pipeline
3. Frequent and small releases
4. Culture of collaboration
5. Risk reduction through feedback

Both Continuous Delivery and DevOps have a shared goal through speedy deployment of software. Without CD practices, DevOps is just philosophy; without DevOps culture, CD is hard to sustain at scale.

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