# Experiment 01 - Case Study

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| Class | D15-B |
| Subject | DevOps  Lab |
| LO Mapped | LO1:  To understand the fundamentals of DevOps engineering and be fully proficient with DevOps terminologies, concepts, benefits, and deployment options to meet your business requirements |
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**Aim**: To understand DevOps: Principles, Practices, and DevOps Engineer Role and Responsibilities.

## Introduction:

A compound of development (Dev) and operations (Ops), DevOps is the union of people, process, and technology to continually provide value to customers.
What does DevOps mean for teams? DevOps enables formerly siloed roles—development, IT operations, quality engineering, and security—to coordinate and collaborate to produce better, more reliable products. By adopting a DevOps culture along with DevOps practices and tools, teams gain the ability to better respond to customer needs, increase confidence in the applications they build, and achieve business goals faster.

## Case Study:

 Before devops came to existence the developer developed software and features. Then the operations team had to  test, deploy and maintain it. This created a lot of problems. Miscommunication between the development team and operations team lead to delays which in turn created backlog. Clients talked to operations team which then conveyed the requests to development team. This took a lot of time.
Also deployment was done in first in first out basis. This made development and deployment expensive and difficult.
This was tackled by implementing DevOps. DevOps works on ther principle of continuous development, continuous deployment (CI/CD).
Different companies had different ways of implementing devops into their organization.
The Daily Telegraph used a three phase method. They gradually moved from 2 deployments per week to more than 60 per day.
Amazon made the transition to DevOps in 2010. They moved all there data to remote data centers. This helped to save resources as scaling was introduced. Amazon also began using a continuous deployment process managed by an internal system called Apollo, which gives developers the ability to deploy code whenever they want to whatever servers they need.By May 2011, Amazon was deploying new software to production servers an average of every 11.6 seconds. In the busiest hour, 1,079 new deployments were sent into the production environment.DevOps is designed to increase the frequency of deployment, but the most successful companies know that quality and risk management are as important as speed. Amazon's implementation of a new load balancer ensured that only one out of every 100,000 deployments resulted in an outage on the Amazon website. According to John Jenkins, a former lead engineer at Amazon, the transition to agile DevOps is saving millions.

Even Nasa started using DevOps which helped them to analyze millions of data points sent daily by the mars rover. This allowed systems engineers and data scientists to quickly develop, analyze, and share their visualizations and algorithms. Data can be stored and processed using AWS services and scalable APIs.

## **DevOps Engineer Roles and Responsibilities**:

Test, build, design, deployment, and ability to maintain continuous integration and continuous delivery process using tools like Jenkins, maven Git, etc.
Must know how to choose the best tools and technologies which best fits the business needs.
Ability to automate test and deploy the code and monitor.
Work in close coordination with the development and operations team such that the application is in line with performance according to the customer's expectation.

## **Conclusion**

Understood the principles, responsibilities and role of a DevOps engineer.