PS-VI

ASSIGNMENT 02

• **Various technical challenges in DevOps and its solutions.**

Ans.

Challenge #1: Getting Development and Operations on The Same Page

People are creatures of habit. It can be extremely difficult to take two different cultures and merge them into one. Development works one way and operations works another. Asking both of them to give up their way of life can be problematic and produce a lot of hostility.

Solution: Focus on Common Goals

You have to get both teams to buy-in to a common set of goals and to understand that when everyone works together, it's easier to achieve those goals, and it's a faster process to get there. Open and frequent communication is key, and every team member has to know that they have a say in the way business gets done. It's a great idea to have a member of the operations team work directly inside the development team and vice versa. This gives each team the ability to see the other's perspective in real time as development happens. This process can lead to greater understanding, increased communication, and a higher quality product.

Challenge #2: Integrating DevOps Tools from Different Domains

Development. Testing. Deployment. All of these processes need to be running in a continuous and iterative loop. This is hard when you have people from different departments using different types of applications. It can be extremely difficult to get employees to adapt to new technologies, which leads to a reduction in productivity as one department has to hand over work to another with an entirely different set of technology tools.

Solution: Utilize One Automated System for Both Development and Operations The more you can automate the interactions between development and operations, the better. Automation will reduce time-consuming repetitive tasks such as data entry, analytical and product research, and marketing. Also, consolidating two different departmental processes into one streamlines the entire production lifecycle and fosters enhanced communication and a mutually-beneficial sharing of knowledge between the two departments. Both teams should be involved in the selection of a cloud-based or open-source solution. Getting buy-in and adoption from the majority of team members will ensure a smooth transition for everyone involved.

Challenge #3: Working with Outdated Systems

It's hard to get into a continuous loop of development, testing, and deployment of state-of-the-art solutions when you're working with outdated legacy systems. Most older applications are plagued with performance issues such as instability, slow load and processing times, and security lapses.

Solution: Replace Legacy Infrastructure With IaaS and Microservices. Utilizing outsourced Infrastructure-as-a-Service (IaaS) for the latest hardware, server and data storage solutions is a cost-effective and efficient way to propel your business processes into the 21st century. Microservices can make your application much easier to build and — even more importantly — easy to scale. If you want to be seen as an innovative company, you can't be operating on dinosaur platforms.

Challenge #4: Dealing with Increased Complexity and Security Requirements

With so many new technologies being utilized in business today — artificial intelligence, machine learning, virtual and augmented reality, etc. — applications are becoming more difficult to develop. Plus, people will not use an application if they think their private information is not protected.

Solution: Invest in A Bigger Development Team and Enhanced Security Practices.To quote the classic line from the Jaws movie, "You're going to need a bigger boat." If you expect to keep up with your competitors and build next-generation solutions, you have to invest in experienced developers who are knowledgeable of all the latest advancements in technology. The good news is that it is easier than ever to grow your team quickly and cost-effectively, thanks to the ability to hire dedicated development teams that can be scaled up or down on demand.

Another area that is worthy of additional investment is security. With so many stories in the news day after day of big name corporations experiencing major security breaches, developing an application with bullet-proof protection can be the one decision that causes a user to choose your solution over a competitor's.

Challenge #5: Creating a Consistent DevOps Environment

Dealing with multiple versions within a DevOps environment can result in slower production timelines and increased bugs and issues. Different developers working on different parts of the

solution with different tech stacks is a recipe for disaster.

Solution: Develop a Culture of Collaboration and Transparency

It's important to change the mindset from individual developers "doing their part" to one cohesive team that is responsible as a collective whole for the outcome of the product. All members of your DevOps team should know exactly what the others are doing at all times. Communication and transparency is key. This can be achieved through communication tools such as Slack or simply with daily stand-up meetings.