**Individual Weekly Report – Week 9**

**Project: E-commerce Web Application TechPlaza**

**Role: DevOps Engineer**

**Completed Tasks:**

1. **Infrastructure as Code with Terraform:** We've successfully adopted Infrastructure as Code principles using Terraform, an open-source infrastructure automation tool, to manage and provision Azure resources. This enables us to define infrastructure configurations as code, providing a consistent, reproducible, and efficient approach to managing infrastructure.
2. **Terraform Modules Implementation**: We've started using Terraform modules to define reusable and modular infrastructure components, allowing for a streamlined management of our Azure resources. These modules encapsulate related resources and configurations, promoting code reusability and enhancing maintainability.
3. **Azure Resource Provisioning with Terraform**: We've successfully employed Terraform to provision and manage a broad range of Azure resources. This has granted us full access to the Azure services spectrum, allowing us to create a tailored infrastructure to meet our specific needs.
4. **Terraform State Management**: We've implemented an Azure Storage Account to store the Terraform state file, accurately tracking changes over time and providing a reliable source of truth for our infrastructure.

**Ongoing/In-Progress Tasks:**

1. **Optimization of Terraform Implementation:** We are continuously working on improving our Terraform modules and configurations to ensure high performance, consistency, and cost-effectiveness.
2. **Integration of Terraform with Other Azure Services**: While Terraform has been successfully deployed, we are working on further integrating it with other Azure services to improve its efficiency and utilization.

**Issues/Challenges:**

1. **Issue 1**: Ensuring smooth integration and optimal utilization of Terraform can be challenging due to the intricacies involved in managing diverse Azure resources. We're mitigating this through careful study and exploration of Terraform modules, monitoring their performance, and making necessary adjustments.
2. **Issue 2**: Balancing the need for security, compliance, and efficiency in the implementation of Infrastructure as Code practices can be a challenge. We're addressing this by incorporating security controls into the infrastructure configurations and adopting best practices for IaC from the beginning.