**Individual Weekly Report – Week 8**

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

**Role: DevOps Engineer**

**Completed Tasks:**

1. **Secrets Management with Azure Key Vault**: We have successfully employed Azure Key Vault for managing and storing application secrets and credentials. This has enhanced our security measures by centralizing sensitive information, ensuring secure storage, providing fine-grained access control, facilitating auditing and monitoring, and integrating seamlessly with other Azure services. Also, it offers developer-friendly APIs and SDKs for secure retrieval of secrets during runtime.
2. **Azure Container Registry for Storing Docker Images**: We have incorporated Azure Container Registry (ACR) into our infrastructure for secure storage and efficient management of Docker images. ACR provides a private environment, supports image versioning and replication, integrates with other Azure services, and offers vulnerability assessment features. It also supports webhook notifications for custom workflows, enhancing the deployment and scalability of our containerized applications.
3. **Azure Storage Solutions for File, Image, and Log Storage:** We have successfully implemented various Azure storage solutions to meet our application's storage needs. Azure Files, Storage Queue, Blob Storage, and Append Blob are now utilized to store files, manage asynchronous communication, store unstructured data, and append data efficiently. These services provide scalable, secure, and cost-effective storage solutions, each catering to specific storage requirements.

**Ongoing/In-Progress Tasks:**

1. **Azure Services Optimization:** We are continually working on improving and optimizing our Azure services and configurations to ensure high performance, cost-effectiveness, and scalability.
2. **Azure Key Vault, ACR, and Storage Services Integration**: While these services are functional, we're working on further integrating them into our application infrastructure and improving their utilization and efficiency.

**Issues/Challenges:**

1. **Issue 1**: Ensuring seamless integration and optimal utilization of Azure Key Vault, ACR, and Azure Storage services can be challenging due to their diverse functionalities. We're mitigating this through careful study and exploration of these services, monitoring their performance, and making necessary adjustments.
2. **Issue 2**: Optimizing the use of Azure storage services for diverse storage needs can be challenging. We're addressing this by studying the performance and costs associated with each storage service and adjusting our usage accordingly to achieve optimal storage solutions.