**CLOUD APPLICATION DEVELOPMENT**

**WEEK – 2**

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**BATCH – 1(Honors)**

**Problem Statement:** The medicine recommendation system project aims to provide personalized medication recommendations to patients based on their medical history, current symptoms, and other relevant factors using intelligent computing techniques.

**Solution:** I believe AWS is a suitable choice for deploying the medicine recommendation system application. The reasons are:

1. **Scalability:** AWS provides scalable compute, storage, and database services that can be easily scaled up or down based on the application's demand. This means that the application can handle an increase in traffic or user requests without compromising performance or availability. AWS offers services like Amazon Elastic Compute Cloud (EC2) for scalable compute capacity, Amazon Simple Storage Service (S3) for scalable storage capacity, and Amazon Relational Database Service (RDS) for scalable and managed databases.
2. **High-performance computing:** AWS offers access to high-performance computing resources like Graphics Processing Units (GPUs) and Field Programmable Gate Arrays (FPGAs) that can be used to accelerate machine learning model training. These resources can help speed up the training process and improve the accuracy of the models.
3. **Pre-built machine learning frameworks:** AWS offers several pre-built machine learning frameworks like TensorFlow, PyTorch, and MXNet that can be easily deployed and used for training machine learning models. These frameworks provide a robust and optimized set of tools for building and training machine learning models.
4. **Reliability:** AWS has a highly available infrastructure that ensures the application is available and responsive to users at all times. AWS provides several services that can improve the application's reliability, including AWS Elastic Load Balancing (ELB), which distributes incoming traffic across multiple instances, and AWS Auto Scaling, which automatically adjusts compute resources to maintain application performance during traffic spikes or dips.
5. **Security:** AWS offers a wide range of security features and compliance certifications that can help ensure the safe and secure management of sensitive patient data. AWS provides features like identity and access management (IAM), which allows the administrator to control access to resources, and AWS Key Management Service (KMS), which provides secure and scalable key management for encrypting data. AWS is also compliant with several industry-specific regulations like HIPAA, which ensures that the application meets regulatory requirements for managing patient data.
6. **Cost-effective:** AWS offers a pay-as-you-go pricing model, which can help reduce infrastructure costs and improve the application's overall cost-effectiveness. The pay-as-you-go pricing model allows the administrator to pay only for the resources used, which can help reduce infrastructure costs, especially during periods of low demand.
7. **Integration:** AWS offers a variety of services and tools that can be integrated with the application, including API management, content delivery, and domain name system (DNS) web services. For instance, Amazon API Gateway can be used to create, manage, and secure APIs that allow the application to communicate with other systems, while Amazon CloudFront can be used for content delivery to improve the application's performance and user experience.

Overall, deploying our application in AWS can provide several advantages for machine learning model training, including scalable infrastructure, high-performance computing, pre-built machine learning frameworks, cost-effectiveness, and integration with other AWS services.