

## TechBarter Application: Technological Requirements and Learning Plan

### A) Technological Requirements

Technology	Category	Description	Pros	Cons
MongoDB	Database	A NoSQL database, MongoDB is known for its flexibility and scalability, especially for applications with dynamic schemas.	<ul style="list-style-type: none"><li>- Flexible schema for handling diverse data.</li><li>- Highly scalable, fitting applications expecting growth.</li><li>- Provides robust horizontal scaling capabilities.</li></ul>	<ul style="list-style-type: none"><li>- Lacks support for complex transactions compared to SQL databases.</li><li>- High memory usage for large-scale applications.</li></ul>
Flutter	UI Framework	An open-source UI software development kit by Google for crafting natively compiled applications across mobile, web, and desktop from a single codebase.	<ul style="list-style-type: none"><li>- Cross-platform development reduces development time.</li><li>- Fast and high-performing, ensuring smooth user experience.</li><li>- Large community and frequent updates.</li></ul>	<ul style="list-style-type: none"><li>- Larger app size compared to native frameworks.</li><li>- Limited support for certain native features on iOS and Android.</li></ul>
Spring Boot (Java)	Backend Framework	A Java-based framework designed to simplify the bootstrapping and development of new Spring applications, often used for RESTful web services.	<ul style="list-style-type: none"><li>- Well-suited for building robust, enterprise-level applications.</li><li>- Large ecosystem and extensive documentation.</li><li>- Security features are strong for enterprise applications.</li></ul>	<ul style="list-style-type: none"><li>- Steeper learning curve for beginners.</li><li>- High memory usage, which may affect scalability without optimization.</li></ul>

AWS EC2 Instances (not sure about the deployment software. Might change later)	Cloud Infrastructure	Virtual servers provided by Amazon Web Services for running applications, handling workloads, and storing data.	<ul style="list-style-type: none"> <li>- Scalable, allowing easy adjustment to traffic needs.</li> <li>- Extensive integration with AWS services like S3, Lambda, etc.</li> <li>- Supports high availability and fault tolerance.</li> </ul>	<ul style="list-style-type: none"> <li>- Costly for high-traffic and high-storage applications.</li> <li>- Requires experience with cloud configuration to optimize performance and cost.</li> </ul>
Docker (May not use after complete deployment)	Containerization Tool	An open platform for developing, shipping, and running applications in isolated containers, making deployments and environment consistency easier.	<ul style="list-style-type: none"> <li>- Simplifies dependency management and environment configuration.</li> <li>- Facilitates easier deployment across environments.</li> <li>- Enables microservices architecture if needed.</li> </ul>	<ul style="list-style-type: none"> <li>- Learning curve for beginners.</li> <li>- Overhead can lead to slightly higher resource consumption.</li> </ul>

## B) Learning Plan

Team Member	Responsibility	Technical Skills	Existing Skill Level (%)	Learning Plan
Nishita	Backend Development	Java, Spring Boot	70%	<ul style="list-style-type: none"> <li>- Start Date: Jan 5, 2024</li> <li>- End Date: Mar 15, 2024</li> <li>- Resources: Udemy Spring Boot Course, Spring documentation</li> <li>- Goal: Reach 90% proficiency</li> </ul>
Hardik	Frontend Development	Flutter, Dart	50%	<ul style="list-style-type: none"> <li>- Start Date: Jan 10, 2024</li> <li>- End Date: Mar 10, 2024</li> <li>- Resources: Flutter</li> </ul>

				documentation, Code Labs, online tutorials - Goal: Reach 80% proficiency
Ashish	Database Management	MongoDB, Data Modeling	40%	- Start Date: Feb 1, 2024 - End Date: Mar 31, 2024 - Resources: MongoDB University, tutorials, hands-on practice - Goal: Reach 75% proficiency
Sandra	DevOps & Infrastructure Management	Docker, AWS EC2	60%	- Start Date: Feb 5, 2024 - End Date: Apr 15, 2024 - Resources: AWS certification materials, Docker courses - Goal: Reach 85% proficiency
Tanmay	Cross- functional Support & Testing	Testing frameworks, API integration testing	30%	- Start Date: Jan 20, 2024 - End Date: Mar 20, 2024 - Resources: Selenium, Postman, online testing courses - Goal: Reach 75% proficiency