

Project Design Phase-II Technology Stack (Architecture & Stack)

Date	
Team ID	
Project Name	ShopEZ:One-Stop Shop for Online Purchases
Maximum Marks	4 Marks

Technical Architecture:

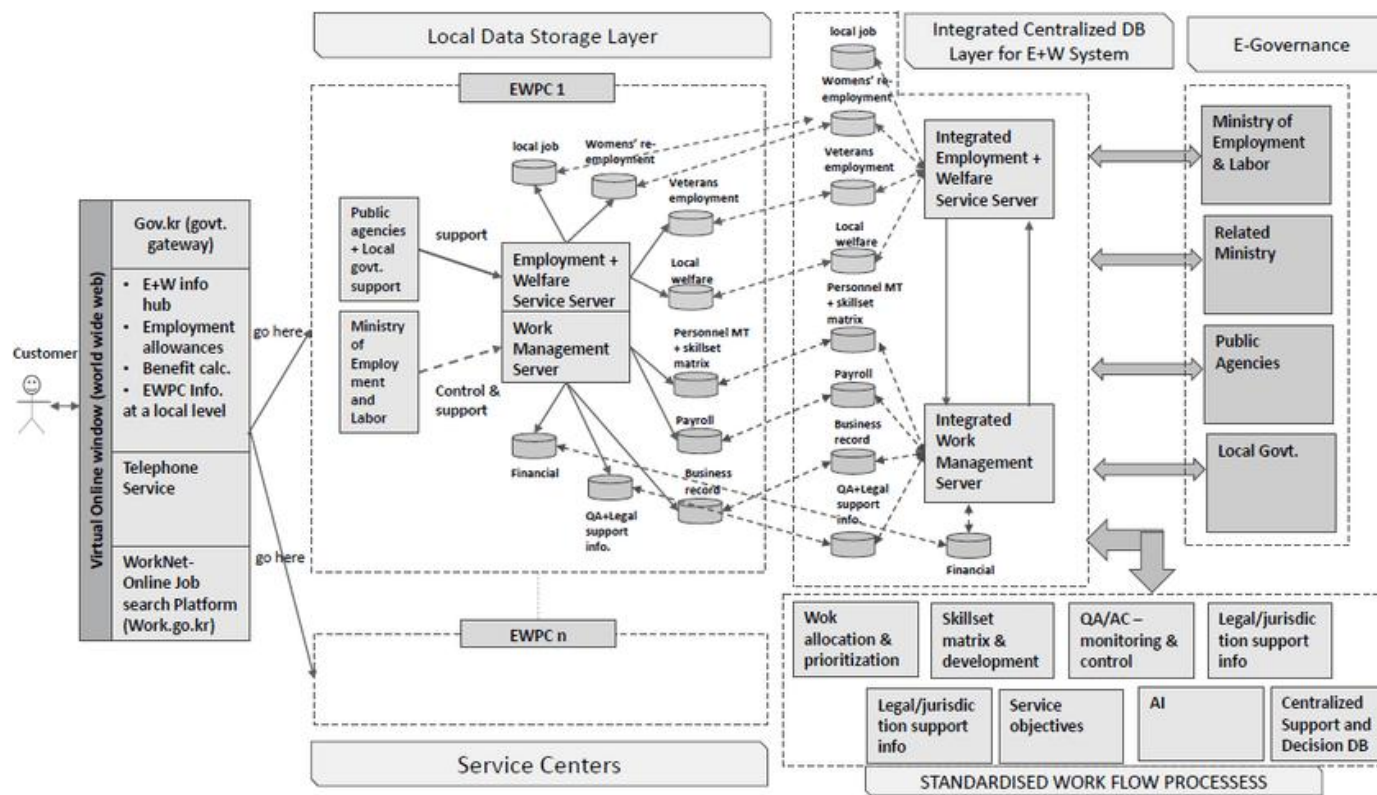


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web app where users browse and buy products	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	Handles user registration, login, product catalog	Java / Python
3.	Application Logic-2	Payment processing and cart operations	IBM Watson STT service
4.	Application Logic-3	Chatbot support for customer queries	IBM Watson Assistant
5.	Database	Stores user data, orders, inventory	MySQL, NoSQL, etc.
6.	Cloud Database	Cloud backup of transactional data	IBM Cloudant
7.	File Storage	Stores product images and invoices	IBM Block Storage
8.	External API-1	Payment gateway integration	Razorpay API / Stripe API
9.	External API-2	Delivery tracking via courier service	Shiprocket API
10.	Machine Learning Model	Product recommendation engine based on user behavior	Collaborative Filtering (Python)
11.	Infrastructure	Application deployed in cloud	IBM Cloud Foundry / Kubernetes

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	ReactJS for frontend, Spring Boot for backend, MySQL, Python ML libraries	ReactJS, Spring Boot, Scikit-learn
2.	Security Implementations	User authentication, encrypted data, secure payment APIs	HTTPS, JWT Tokens, OAuth, SHA-256
3.	Scalable Architecture	3-tier scalable microservices for high traffic	Microservices, Docker, Kubernetes
4.	Availability	Hosted on cloud with backup servers and load balancers	Load Balancer, Redundancy Setup
5.	Performance	Optimized with caching, CDN for static files, async requests	Redis Cache, Cloudflare CDN