

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

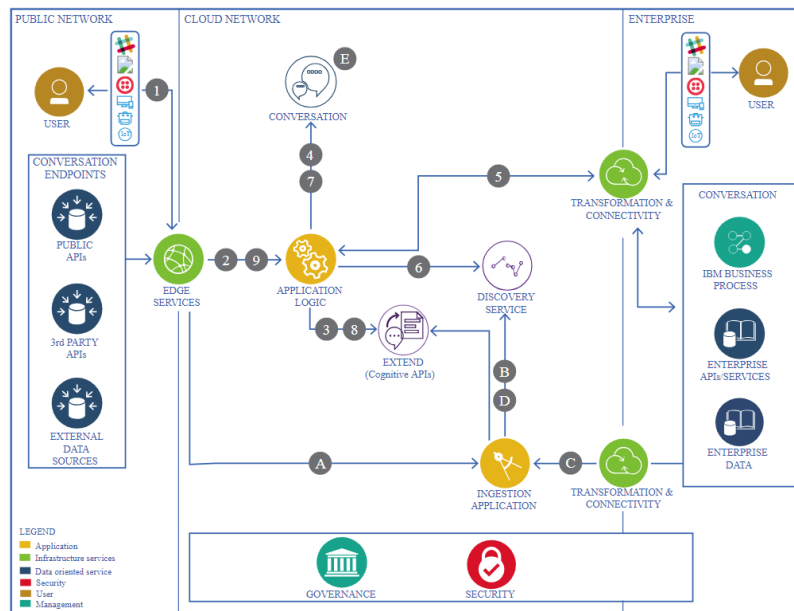
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|---------------|---|
| Date          | 16 october 2022   |
| Team ID       | PNT2022TMID40151  |
| Project Name  | Project-AI-powered Nutrition Analyzer for Fitness Enthusiasts |
| Maximum Marks | 4 Marks   |

### Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

**Example: Order processing during pandemics for offline mode**

**Reference:** <https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/>



### Guidelines:

1. Include all the processes (As an application logic / Technology Block)
2. Provide infrastructural demarcation (Local / Cloud)
3. Indicate external interfaces (third party API's etc.)
4. Indicate Data Storage components / services
5. Indicate interface to machine learning models (if applicable)

**Table-1 : Components & Technologies:**

| <b>S.No</b> | <b>Component</b>                | <b>Description</b>  | <b>Technology</b>  |
|-------------|---------------------------------|---|--|
| 1.          | User Interface                  | How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.                                     | HTML, CSS, JavaScript / Angular Js / React Js etc.             |
| 2.          | Application Logic-1             | Logic for a process in the application  | Java / Python  |
| 3.          | Application Logic-2             | Logic for a process in the application  | IBM Watson STT service   |
| 4.          | Application Logic-3             | Logic for a process in the application  | IBM Watson Assistant   |
| 5.          | Database                        | Data Type, Configurations etc.  | MySQL, NoSQL, etc.   |
| 6.          | Cloud Database                  | Database Service on Cloud   | IBM DB2, IBM Cloudant etc.                                     |
| 7.          | File Storage                    | File storage requirements   | IBM Block Storage or Other Storage Service or Local Filesystem |
| 8.          | External API-1                  | Purpose of External API used in the application   | IBM Weather API, etc.  |
| 9.          | External API-2                  | Purpose of External API used in the application   | Aadhar API, etc.   |
| 10.         | Machine Learning Model          | Purpose of Machine Learning Model   | Object Recognition Model, etc.                                 |
| 11.         | Infrastructure (Server / Cloud) | Application Deployment on Local System / Cloud<br>Local Server Configuration:<br>Cloud Server Configuration : | Local, Cloud Foundry, Kubernetes, etc.                         |

**Table-2: Application Characteristics:**

| S.No | Characteristics          | Description   | Technology  |
|------|--------------------------|---|---|
| 1.   | Open-Source Frameworks   | List the open-source frameworks used  | Technology of Opensource framework                  |
| 2.   | Security Implementations | List all the security / access controls implemented, use of firewalls etc.  | e.g. SHA-256, Encryptions, IAM Controls, OWASP etc. |
| 3.   | Scalable Architecture    | Justify the scalability of architecture (3 – tier, Micro-services)  | Technology used                                     |
| 4.   | Availability             | Justify the availability of application (e.g. use of load balancers, distributed servers etc.)                            | Technology used                                     |
| 5.   | Performance              | Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc. | Technology used                                     |

**References:**

<https://c4model.com/>

<https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/>

<https://www.ibm.com/cloud/architecture>

<https://aws.amazon.com/architecture>

<https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d>