# PROJECT DESIGN PHASE-II
# TECHNOLOGY STACK (ARCHITECTURE & STACK)

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| Date | 15 October 2022 |
| Team ID | PNT2022TMID39975 |
| Project Name | Project – Retail store stock inventory analysis |

**TECHNICAL ARCHITECTURE:**

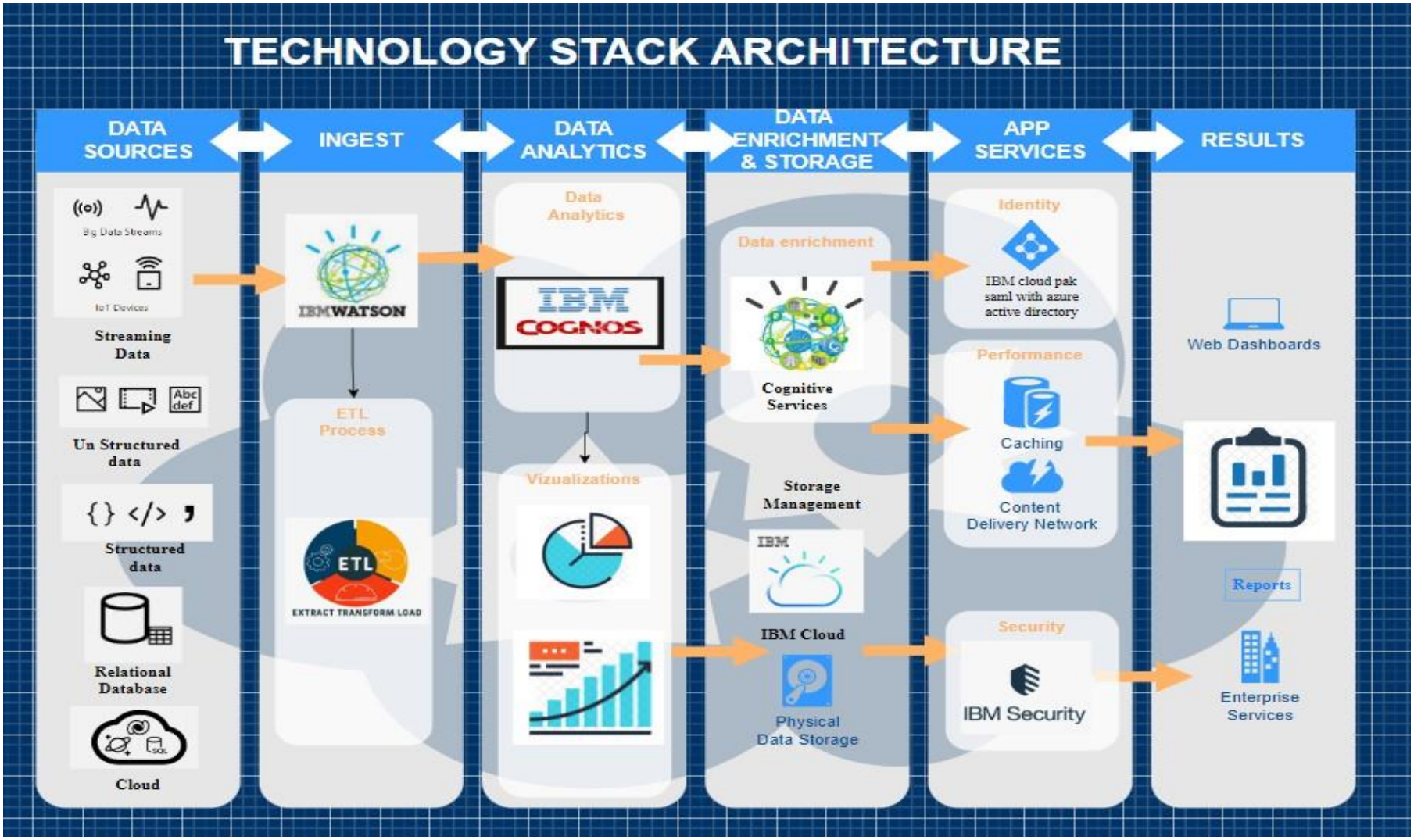

**TABLE-1 :**

**COMPONENTS & TECHNOLOGIES:**

| S.No | Component | Description | Technology |
|---|---|---|---|
| 1. | User Interface | The user interaction with the application e.g. Web UI, Mobile App, Chatbot etc. | HTML, CSS, JavaScript |
| 2. | Application Logic-1 | Logic for a process in the application | Python |
| 3. | Application Logic-2 | Logic for a process in the application | IBM Watson Assistant |
| 4. | Upload data | The data is uploaded | IBM Cognos |
| 5. | Process data | The processing of the data | IBM Cognos |
| 6. | Visualize data | The visualization of the data | IBM Cognos |
| 7. | Database | The storage of data | MySQL |
| 8. | Analyze data | The data is analyzed and report to improve sales and increase profit | IBM Cognos |
| 9. | Cloud Database | Database Service on Cloud | IBM DB2, IBM Cloudant |
| 10. | File Storage | File storage requirements | IBM Block Storage or Other Storage Service or Local Filesystem |
| 11. | External API-1 | Purpose of External API used in the application | IBM Data analytics API. |
| 12. | Machine Learning Algorithms | The machine learning algorithms are used to visualize the data and analyze the data | Object Recognition Model, Python, Jupyter notebook. |

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|---|---|---|---|
| 13. | Infrastructure (Server / Cloud) | Application Deployment on Local System / Cloud Local Server Configuration, Cloud Server Configuration | Local, Cloud Foundry, Kubernetes. |

**TABLE-2:**

**APPLICATION CHARACTERISTICS:**

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 1. | Open-Source Frameworks | open-source frameworks | Python- pandas, numpy, scikit, Matplotlib. |
| 2. | Security Implementations | The data are secured using the various encryption algorithms | SHA-256, Encryptions, IAM Controls, OWASP |
| 3. | Scalable Architecture | 3 – tier application architecture - presentation layer, application layer, and database layer. | Presentation layer: Html, Css<br>Application layer: Python<br>Database layer: Mysql, IBM cloud |
| 4. | Availability | The software can be accessed by the multiple users at the same time. The traffic can be managed. | IBM cloud load balancer |
| 5. | Performance | The performance of the software can be used to reduce the traffic. Load balanced are used to reduce the traffic and cache is used to temporary data storage | IBM cloud load balancer |