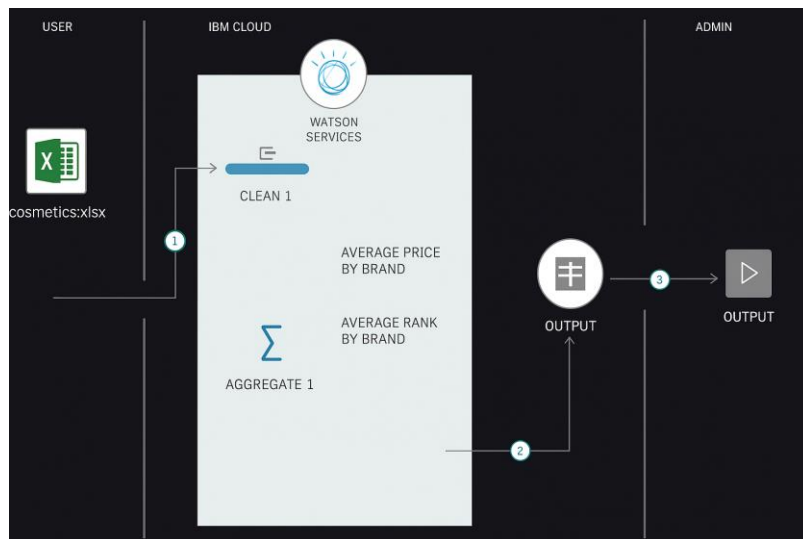


Project Design Phase-II Technology Stack (Architecture & Stack)

Date	31 January 3035
Team ID	
Project Name	
Maximum Marks	4 Marks

Technical Architecture:

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



Guidelines Fulfilled:

- Process flow includes UI, recommendation logic, data filtering and machine learning
- Architecture is deployed on cloud
- External APIs are used for skin diagnosis and product catalog access, Data storage uses hybrid of SQL and file-based methods

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web portal for users to input preferences	HTML, CSS, JavaScript, React JS
2.	Application Logic-1	Skin type matching logic	Python Flask
3.	Application Logic-2	Product filtering and ranking engine	Python, Pandas
4.	Application Logic-3	Recommendation based on user reviews and ratings	Scikit-learn, Cosine Similarity Model
5.	Database	Product catalog, user profiles, feedback	MySQL
6.	Cloud Database	Store usage history and ratings	IBM Cloudant
7.	File Storage	Store uploaded skin analysis images	IBM Cloud Object Storage
8.	External API-1	Product Information API (for cosmetics catalog)	Flipkart Public API / Dummy JSON
9.	External API-2	Skin diagnosis (optional image-based detection)	AWS Rekognition / Custom ML Model
10.	Machine Learning Model	Recommend best-fit products based on skin and budget	Scikit-learn
11.	Infrastructure	Application Deployment	IBM Cloud Kubernetes / Local Dev

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Use of Flask, Scikit-learn, Pandas, React	Python, JavaScript
2.	Security Implementations	Role-based access control, Input sanitization, API key auth	JWT, HTTPS, SHA-256
3.	Scalable Architecture	Modular microservice-based architecture	Docker, Kubernetes
4.	Availability	Cloud deployment with horizontal scalability	IBM Load Balancer, Cluster Nodes
5.	Performance	Caching popular products, optimized SQL queries, responsive UI	Redis, Indexed DB, React Virtual DOM