

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

Date	20 October 2023
Team NM ID	B910454B661E3859B93483FA1A091BCD
Project Name	Analysing The Performance & Efficiency of The Radisson Hotels Using Data Visualization Techniques Using IBM COGNOS
Maximum Marks	4 Marks

Technical Architecture:

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

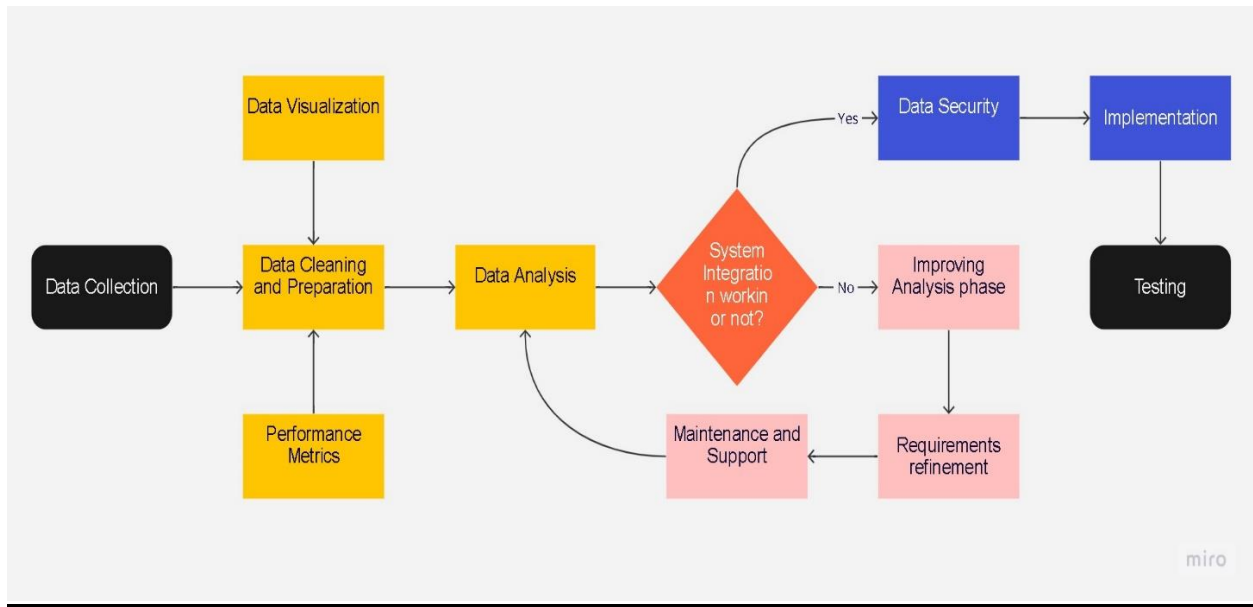


Table-1:

Components & Technologies:

S.No	Component	Description	Technology
1	Data Collection and Analysis	Collect and analyze data for insights.	Data Analytics Tools
2	Guest Feedback Management	Gather guest feedback and categorize it.	Feedback Management Software

S.No	Component	Description	Technology
3	Operational Data Collection	Collect real-time operational data.	IoT Sensors, Data Collection Tools
4	Performance Metrics	Monitor and report on performance metrics.	Data Analytics Tools
5	CRM Integration	Manage guest profiles and personalize services.	Customer Relationship Management Software
6	Personalization	Customize guest experiences based on data.	Machine Learning Algorithms, CRM Data
7	Predictive Analytics	Use data to predict guest behavior and needs.	Data Analytics Tools
8	Operational Efficiency Optimization	Streamline internal processes.	Enterprise Resource Planning (ERP) Software
9	Sustainability and Cost Management	Promote sustainability and manage costs.	Energy-Efficient Technologies, Cost Management Software

S.No	Component	Description	Technology
10	Reporting and Monitoring	Monitor and report on key metrics.	Data Visualization Tools
11	Employee Training and Feedback	Enhance staff skills and gather input.	Learning Management System, Feedback Collection Platforms
12	Technology Integration	Ensure seamless integration of systems.	Integration Middleware
13	Security and Compliance	Protect data and ensure compliance.	Cybersecurity Measures, Compliance Management Tools
14	Change Management	Guide staff through technology adoption.	Change Management Framework
15	Scalability and Future-Proofing	Plan for growth and technology updates.	Scalable Architecture Design

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1	Real-time Data Processing	Collect and process data in real-time for immediate insights and decision-making.	Data Analytics Tools
2	Scalability	Ability to expand and handle increased data and workload as needed.	Scalable Architecture Design
3	Data Security	Measures to protect data from unauthorized access and breaches.	Cybersecurity Measures
4	Integration Capabilities	Ability to seamlessly integrate with other systems and data sources.	Integration Middleware
5	User-Friendly Interface	Easy-to-use interfaces for guests providing feedback.	User Experience (UX) Design
6	Mobile Compatibility	Compatibility with mobile devices for feedback submission.	Mobile App Development

S.No	Characteristics	Description	Technology
7	Feedback Categorization	Categorize guest feedback for better analysis and response.	Natural Language Processing (NLP)
8	Analytics	Analyze feedback and data to derive meaningful insights.	Data Analytics Tools
9	Sensor Data Integration	Integration of IoT sensors to collect real-time operational data.	IoT Sensors, Data Integration Tools
10	Data Visualization	Present operational data in a visual and easily interpretable manner.	Data Visualization Tools
11	Real-time Monitoring	Continuously monitor operational aspects in real-time.	Real-time Monitoring Tools
12	Data Accuracy	Ensure high data accuracy and reliability for decision-making.	Data Quality Control Measures
13	Customizable Reporting	Customize reports to meet specific informational needs.	Reporting and Analytics Tools

S.No	Characteristics	Description	Technology
14	Guest Profile Management	Manage guest profiles, preferences, and interactions.	Customer Relationship Management (CRM) Software
15	Personalization	Personalize guest experiences based on their profiles and preferences.	Personalization Engines
16	Automated Communication	Automate guest communications based on preferences and interactions.	Marketing Automation Software
17	Data Synchronization	Ensure consistent and updated data across systems.	Data Synchronization Tools
18	Recommendation Engine	Provide personalized recommendations based on guest behavior and data.	Recommendation Engines
19	Machine Learning Algorithms	Utilize machine learning algorithms for predictive analytics and personalization.	Machine Learning Frameworks
20	Process Analysis Tools	Analyze and optimize operational processes for efficiency.	Process Analysis Software

S.No	Characteristics	Description	Technology
21	Workflow Optimization	Improve and automate workflows to streamline operations.	Workflow Management Software
22	Bottleneck Identification	Identify operational bottlenecks and areas for improvement.	Process Optimization Tools
23	Energy-Efficient Technologies	Implement energy-efficient technologies for sustainability.	Smart HVAC Systems, LED Lighting, Energy Management
24	Cost Management	Manage expenses and optimize budgets for cost efficiency.	Cost Management Software
25	Sustainability Reporting	Generate reports on sustainability efforts and progress.	Sustainability Reporting Software
26	Compliance with Standards	Ensure compliance with environmental and regulatory standards.	Compliance Management Tools
27	Real-time Data Visualization	Present operational and performance data in real-time dashboards.	Real-time Data Visualization Tools

S.No	Characteristics	Description	Technology
28	Customizable Widgets	Customize dashboard widgets to display relevant data.	Dashboard Customization Tools
29	Data Drill-Down	Allow users to drill down into data for more detailed insights.	Data Drill-Down Tools
30	Alert Notifications	Send alerts and notifications for critical events and threshold breaches.	Alerting and Notification Systems
31	Course Authoring	Create and manage training courses for employees.	E-Learning Authoring Tools, Learning Management Systems (LMS)
32	User Progress Tracking	Track employee progress and completion of training.	Learning Management Systems (LMS)
33	Certification Management	Manage employee certifications and training achievements.	Certification Tracking Software
34	User Engagement	Engage employees with interactive and effective training.	Gamification Tools, Interactive Content

S.No	Characteristics	Description	Technology
35	Firewall Protection	Implement firewalls to safeguard systems and data.	Firewall Software, Network Security Solutions
36	Intrusion Detection	Detect and respond to unauthorized access and intrusion attempts.	Intrusion Detection Systems, Security Software
37	Data Encryption	Encrypt sensitive data to protect it from unauthorized access.	Encryption Algorithms, Data Security Tools
38	Security Monitoring	Continuously monitor systems and networks for security threats.	Security Information and Event Management (SIEM) Systems
39	Compliance Management Tools	Manage and track compliance with industry and regulatory standards.	Compliance Management Software
40	Change Planning	Plan and schedule changes to processes and systems.	Change Management Software
41	Workflow Automation	Automate workflows to streamline and standardize processes.	Workflow Automation Tools, Business Process Management (BPM)

S.No	Characteristics	Description	Technology
42	Change Impact Assessment	Assess the impact of changes on operations and systems.	Change Impact Analysis Tools
43	Change Approval Workflow	Implement workflows for the approval and implementation of changes.	Workflow Management Software, Approval Automation
44	Scalable Architecture Design	Design the architecture to be scalable, allowing for future growth and technology updates.	Scalable Architecture Frameworks