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

Date	03 October 2023
Team ID	NM2023TMID00041
Project Name	Analysing the performance&Efficiency of Radisson hotel
Maximum Marks	4 Marks

Technical Architecture:

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
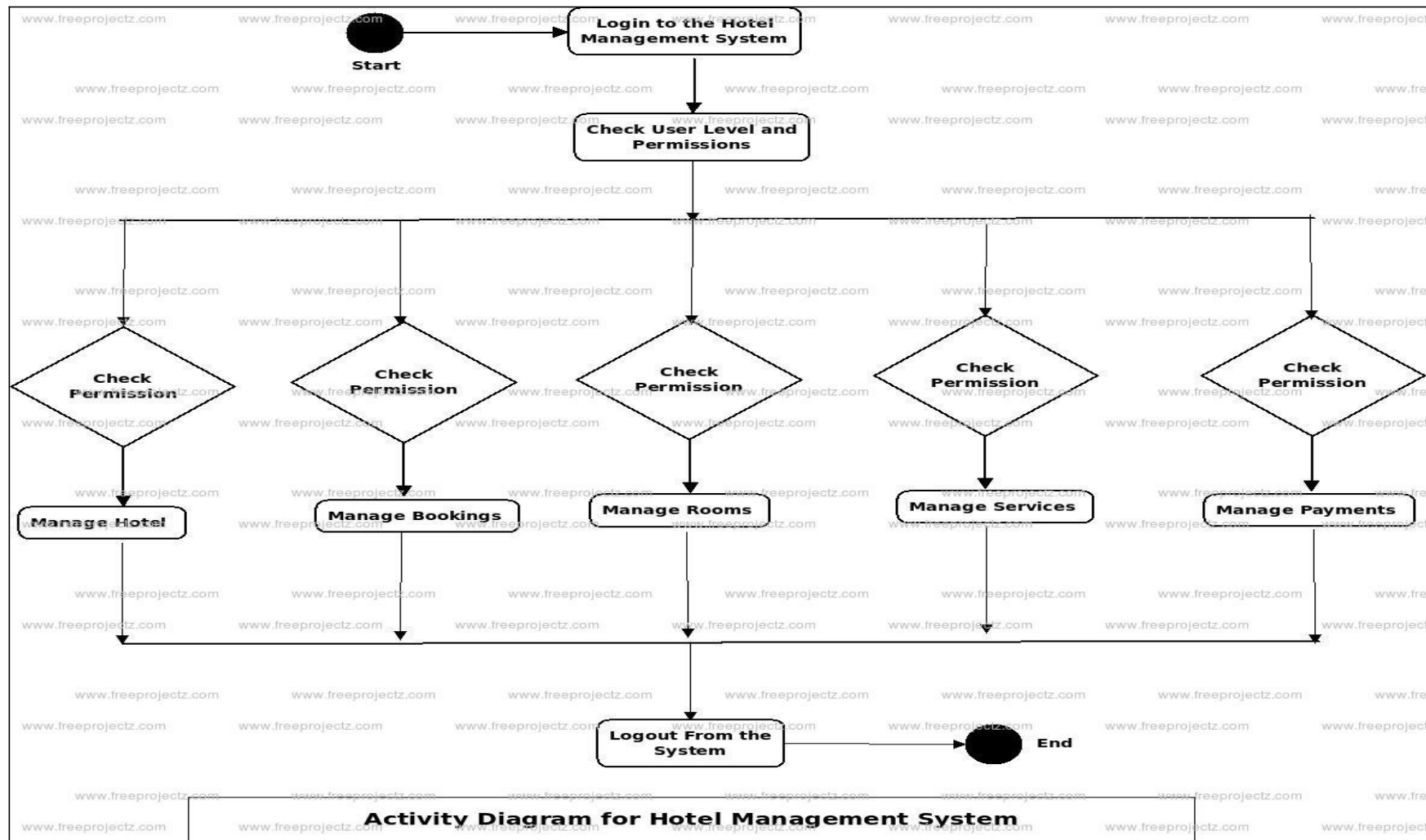5. Indicate interface to machine learning models (if applicable)

Start

Login to the Hotel Management System

Check User Level and Permissions

Check Permission

Check Permission

Check Permission

Check Permission

Check Permission

Manage Hotel

Manage Bookings

Manage Rooms

Manage Services

Manage Payments

Logout From the System

End

Activity Diagram for Hotel Management System

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
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 Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	TensorFlow and PyTorch	Python
2.	Security Implementations	security / access controls implemented, use of firewalls etc.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.

S.No	Characteristics	Description	Technology
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	Hadoop, Apache spark, NoSQL databases
4.	Availability	Review the specific data analytics programs, degrees, and specializations offered by each university.	NumPy, Pandas, scikit-learn
5.	Performance	Examine the research opportunities available at each university, such as labs, centers, and projects related to data analytics	Tableau, Power BI

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