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*Oyo – Hotels and* ***Parking***

*Course: ITC 6420*

*Course Name: Introduction to Cloud Computing Applications and Management*

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# Problem Statement

There is a vast gap in the demand and supply of privately-owned parking spots. Instead of capping the exiting availability, there is a new multistory infrastructure created to resolve it. There is a need for **parking solutions** to bridge this gap between demand and supply of parking spots, without constructing additional infrastructure. The solution must be **global, reliable, marketed** very well to all masses.

# Introduction of the Company

OYO also known as Oyo Hotels & Homes, is an Indian hospitality chain of leased and franchised hotels, homes, and living spaces. The company was founded in the year 2013 by Ritesh Agarwal, and since then it has expanded well in millions of rooms in India, Malaysia, UAE, Nepal, China, the United States, Indonesia to name a few. The company further expanded to have a multi-brand approach which includes – OYO LIFE, YO!HELP, Capital O to name a few. The basic idea with the operation of OYO is using an unutilized residential area (later expanded to hotels) by listing it for accommodation on the OYO app until the vacancy is available. The spot/building, however, must meet the standards stated by OYO for being verified for sale. It is the easiest way to list your property for use online, given that OYO has earned market monopoly and was India’s largest hospitality company in 2019.

# Current Business Model

OYO currently uses a partnership model for homes and hotels. If anyone wants to list its property on OYO, they have to sign up, provide details of the available rooms, and wait till it is verified. Oyo charges a 22% commission fee from hotel owners, 10-20% commission from room reservation, subscription membership fee, and advertising fee.

Everything was going well for OYO until the COVID pandemic struck the world, and like most businesses, OYO faced major losses. According to its CEO, the business was unprepared for a 0% reservation.

# Project Proposal

The current business model of OYO can be expanded to solve a major “**Parking Problem”** faced throughout the globe. Just like property owners to list their room or hotel availability for rent/lease, going one step forward, OYO can include the design to allow property owners to list their available parking spots. In COVID times the current OYO business is at a standstill, and it is unknown when the scenario for bookings will gain pace as pre-COVID times. More importantly, already having earned the **trust** and **popularity** across the globe, the **same** model could be used to solve a crisis parking problem worldwide.

Increasing development is leading to transportation problems which are being solved by many private entrepreneurs by bringing in data-driven technology based on the mobile-data and the real time availability. For instance, Boston is considered as a walking city as people find it extremely difficult first find a parking space and next, find the parking away from the destination and need to walk to it!

Who will benefit from it?

* Anyone willing to rent out their spare parking lot on hourly or monthly basis
* Anyone looking to rent a parking lot on hourly or monthly basis
* Hotel, hospital, school, church, with unutilized parking area

What can be the reason to rent a parking spot?

* Parking spot close to your residential area, and you don’t have a spot
* Parking spot walking distance to you work location
* Parking area needed for a family gathering or corporate event

What is the reason for selecting OYO to solve the parking problem?

* **Business model fits** in the parking problem solution
* It has gained a monopoly in market for room renting and hotel booking
* The popularity of the app gets the easy “**Marketing Advantage**” on introduction of this new feature

How to list a spot or area for parking?

* Sign up the OYO – parking app
* Enter details including spot images, location, ownership verification document, price
* Wait for the team to verify the details
* If successfully verifies, the parking spot gets listed on the website.

# Project Objectives and Technology Solutions

In order to achieve success on the project, the following objectives must be met within the designated time and budget allocations:

* Develop a solution to manage the parking space efficiently
* Complete list of required hardware/software which meets budget allocation
* Design & Develop a comprehensive solution which allows no security breaches and complete testing
* Implement the solution within utmost care and deliberation
* Onboarding of parking spot owners
* Onboarding of customers looking for parking space

The project’s primary objective is the idea of onboarding parking spot owners where they can create listings of the available spots to be made visible to the users for a specific fee based on different plan structures (hourly/monthly).

Once the listings are made available, users can browse the listings based on the location, city, and the spots available for parking. This mapping is taken care of by the system automatically. The registered spot owners will be able to view the bookings and once the payment is confirmed the users will be allowed to park their vehicles. The registered spot owners can see their bookings, revenue in the form of an analytics dashboard.

An AI-based Chatbot within the website will help the users if they are in need of any information regarding the services, pricing, and other topics of their choice.

This will be an extension to the OYO business for easy marketing and reaching the public at large.

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| --- | --- |
| **ACTORS** | **DESCRIPTION** |
| **Users** | End users/consumers who are looking for parking spots |
| **Parking Spot Owners** | The actual owners of parking spot who are willing to rent the space |
| **Oyo Parking** | Platform to find parking spots, connecting users and parking spot owners |

|  |  |
| --- | --- |
| **TECHNOLOGIES** | **DESCRIPTION** |
| **Cloud Computing** | SaaS based web application is hosted in AWS  Tech Stack: Java EE / MySQL / React JS / HTML/CSS |
| **Analytics** | Real time statistics for users and parking spot owners |
| **AI** | AI Chatbot |
| **Social Computing** | Help Users, Spot Owners connect and login using social media platforms |

The web application will be a SaaS based application using Open Source technologies for development and hosted in Amazon AWS. The tech stack we are proposing is Java, AWS Aurora, React JS, HTML/CSS and third-party integrations like payment gateway and others.

# Constraints, Risks and Advantages

The following are the constrains with regards to the project:

* Selection of right cloud solution provider and services for our current platforms
* Necessary technical resources will be provided as resources for this project
* Customers can cancel the orders if they are not satisfied and arrangement should be made for full refund

The following risks should be considered with respect to the project. The implementation team members will determine and employ the necessary risk mitigation/avoidance strategies in as appropriate to minimize the likelihood of these risks:

* Potential disruption to operations during technical solution deployment
* Threats breaching of security in payments and data theft

This platform will help access relevant data easily, deliver value, improve efficiency and parking space. Other advantages include

* Improved Outcomes
* Increase Consumer Engagement
* Reduce Costs and Improve Efficiency

# Project Abstract

In our project, we will create 2 tabs, one for OYO hotels, which will continue hosting the existing business. On the other tab, we will host the OYO- parking website. This is the section on which this project resides. The website uses AWS Aurora as the database, which was hosted at the VPC along with a subnet. The REST API used is Java Spring Boot and the site is hosted on an Apache Tomcat server.

The website will be from the client’s end, where he can see the listing of all the available parking spots available, on entering the location at which he is looking the parking. The listing will include the image of the spot, distance from the location entered, and price listed by the vendor.

The user can either request more information, wherein an email will be sent out to the vendor or make a payment. If he makes a payment; he will be shown a pop upon successfully making the payment. Or if he requests more information, he can enter details and click on the send button. And email will be sent to the registered vendor.

The part project primarily shows the integration of AWS Aurora DB, Apache Tomcat server, and Java REST API. We will also integrate AI Chatbot, to enhance the user experience.

# Process Flow

Diagram, timeline

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# Data Flow Diagram

Diagram

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# Flowchart

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# Control Flow

**Pages:**

**Customer App**

* Login / Signup
* Home Page
* Booking Page
* Confirmation Page
* My Bookings
* Parking Spot Listings

**Optional**

**Parking Spot Owner**

* Login / Signup
* List Parking Spots
* My Listings
* Bookings List

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