**Technical used in the project**

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# Languages and Framework:

## NodeJs:

* Used by many team members.
* Easy to learn.
* Easy for training fresher.
* Have a big community.
* Easy for recruitment.
* Fast for development, debuging.
* Run single thread, so nodejs easy to handle error than multi thread.
* Can control asynchronous task.

## PHP:

* Used by many team members.
* Easy to learn.
* Have a big community
* Easy for recruitment
* Easy debuging.
* This increases concurrency of the system.

## Nestjs framework (nodejs):

* Website: <https://nestjs.com>
* More popular framework for nodejs.
* Provide many usedful modules, functions :
  + Database migration, MySQL, Postgreslq, oracle,…
  + Caching
  + Validation
  + Microservice Transport
  + Task scheduling
  + Queues
  + Logging
  + Events
  + Configurations
  + Model View Controller
  + Performance using fastify
  + ………
* Big community.
* Opensource, easy to customize once libraries no longer supported.
* Easy to learn.
* Clear document.
* Very good for core development.

## Laravel:

* More popular framework for PHP.
* Model view controller
* Big community
* Opensource
* Easy to learn
* Clear document.
* Still trend for next 3 years.

## C/C++

* Linux programing
* Big community to support
* Fast & performance
* Difficulty to learn.
* Used in some special cases, ex: pub/sub, queuing.
* Used by many 3rd party open-source.
* Clear document.
* Hard for recruitment operation.

# 3rd party library:

## Zeromq:

* An open-source universal messaging library.
* Website: <https://zeromq.org/>
* Multiple transport: Carries messages across inproc, IPC, TCP, UDP, TIPC, multicast and WebSocket
* Backed by a large and active open source community.
* Support about 28 programming languages.
* Smart pattern: pub/sub, push/pull, client/server…

## SocketIO:

* + Library support for many programming languages.
  + Socket transport, useful to develop realtime application.
  + Big community.

## Postgresql

* RDMS database system.
* Big community.
* Clear document.
* Popular in all of cloud computing platform.

## Apache Kafka message broker:

* Website: <https://kafka.apache.org/>
* distributed event streaming platform
* High performance data piplines
* Throughput for system
* fault-tolerance
* scalable
* big community.

## Consul:

* Website: <https://www.consul.io/api-docs/libraries-and-sdks>
* service discovery, configuration, and segmentation functionality
* Easy to used
* Small community
* Clear document

## Nginx server, HA proxy, Keepalive:

* High available for system
* Very popular
* Big community
* Easy to deploy
* Stable

## Redis:

* + In-memory database
  + Popular
  + Big community
  + Easy to learn

# Application features analysis

## Master

* Create Merchant Login
* Merchant Details, Company Name, Contact, Email
* Merchant Expiry Date
* Merchant Monthly Fee
* No. of shops (Quota)
* Daily / Weekly / Monthly booking by Merchant
* Popular No. of seats (e.g. 2,3,4,5,6)
* Popular booking time

## Merchants:

* Login and Password
* Create brand, Add photo and thumbnail
* Create shop
* Create login for shop
* Special request management (e.g. Window Seat...etc.)
* SMS Template Management by shop
* Dashboard
* Attendance booking by shop
* Popular No. of seats (e.g. 2,3,4,5,6)
* Popular booking time
* Popular Special Request

## Shop:

* Login and Password
* Create table reservation
  + Name
  + No. of seats
  + Select Time (Hot timeslot function)
  + Mobile Number (1)
  + Mobile Number (2)
  + Email Address
  + Special Request
  + Remark
  + Booking no. will be auto generated
* Take attendance function
* Today, Tomorrow, this week booking
* Coming week booking
* SMS/Email reminder will be sent before 1 day
* Booking Quota Control
  + 2-4 Seats (Quota = 10 Quota), Table No.
  + 5-6 Seats (Quota = 15 Quota), Table No.
* Dashboard
  + Today/Tomorrow/This week booking

# Idea

Use Onesignal to push notification to guest that already installed app in his mobi device.

Link: <https://onesignal.com/>