INSTITUTE FOR ADVANCED COMPUTING AND SOFTWARE DEVELOPMENT AKURDI, PUNE

Documentation On

"E-RTO System"

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Submitted By:

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1. INTRODUCTION

Introduction:

The e-RTO System's aim is to automate the major processes in Regional Transport Offices. The Online RTO system provides citizens with 24/7 access to services like online registration for Learner's licenses & Permanent licenses. Admin can update application status and can also manage time slots for tests. The main motive of the system is to make daily activities efficient and to provide a fast response by storing and retrieving information & informing the users via Email.

Problem Statement:

Now a day's many people are purchasing two-wheelers, four-wheelers, etc. So the RTO employees have a lot of work burden of making registration. License issues, transfers, etc. which required a lot of paperwork. As a result, people cannot get things done at the right time, which wastes the time, and energy. Similarly, the vehicle owner sometimes forgets to carry the license at the time of inquiry. So to overcome these drawbacks we are developing an enhanced e-RTO Management System. Such like that we provide one type of environment which gives a user-friendly means users can access and understand well. The administrator has the power to verify the data entered by the user, processing of data, and provide appropriate solutions.

E-RTO Management system is an advanced system that is designed keeping in view to make the existing registration system easier and faster. It includes the entire registration procedure starting from the initial phase of entering till the results. It is more reliable, accurate time, saving, and free from any misuse. The tedious jobs such as verifying all the records of the applicant, confirming all the personal details are furnished, submission of documents, driving license, registration details, etc. are done in the most convenient way to the administrator. Also, security is being provided in the most proficient way.

Aims and Objective:

The aim is to build a user-friendly webpage where citizens can apply for a learner's license or driving license. The webpage also provides provisions for citizens to submit their complaints. Mainly, the website is used for issuing licenses. An individual can apply for a learning license and driving license online. Accordingly, slots and dates are generated for the respective test. The application received will be verified and approved by the RTO officials. The applicant can monitor the status of their application.

In other words, our E-RTO Management system portal has, the following objectives:

- Simple database is maintained.
- Easy operations for the user and the admin of the system.
- User interfaces are user accommodating and attractive; it takes very less time for the operator to use the system.

2. OVERALL DESCRIPTION

Proposed Methodology:

The proposed system is aimed to automate the major processes in the Regional Transport Office. E-RTO Management System for different License Scope: “RTO Management System” is aimed to automate the major processes in Regional Transport Offices. The scope of the Online RTO Management system includes a complete suite of portals to provide citizens with 24/7 access to services like Online Registration for Learner's license & permanent license, Examination and maintaining results, and Management of time slots for driving tests. The main motive of the system is to make daily activities efficient and provide a fast response by storing and retrieving information & informing users via SMS or E-Mail.

OPERATING ENVIRONMENT:

Server Side:

Processor: Intel® Xeon® processor 3500 series

HDD: Minimum 500GB Disk Space

RAM: Minimum 4GB

OS: Windows 10

Database: MySQL

Client Side (minimum requirement):

Processor: Intel Dual Core

HDD: Minimum 80GB Disk Space

RAM: Minimum 2GB

OS: Windows 7

Design and Implementation Constraints:

- The application will use ReactJs, Axios and CSS as main web technologies.
- HTTP protocol is used as a communication protocol. FTP is used to upload the web application to a live domain and the client can access it via HTTP protocol.
- Several types of validations make this web application a secured one and SQL Injections can also be prevented.
- Since E-RTO SYSTEM is a web-based application, an internet connection must be established.

3. REQUIREMENTS SPECIFICATION.

External Interface Requirements:

User Interfaces:

- All the users will see the same page when they enter this website. This page asks the users for a username and a password.
- After being authenticated with the correct username and password, users will be redirected to their corresponding profile where they can do various activities.
- The user interface will be simple and consistent, using terminology commonly understood by intended users of the system. The system will have a simple interface, consistent with a standard interface, to eliminate the need for user training of infrequent users.

Hardware Interfaces:

- No extra hardware interfaces are needed.
- The system will use the standard hardware and data communication resources.

This includes, but it is not limited to, general network connection at the server/hosting site, network server, and network management tools.

Application Interfaces:
Web Browser:

The system is a web-based application; clients need a modern web browser such as Mozilla Firebox, Internet Explorer, Opera, and Chrome. The computer must have an Internet connection in order to be able to access the system.

Communications Interfaces:

- This system uses communication resources which include but are not limited to, HTTP protocol for communication with the web browser and web server and TCP/IP network protocol with HTTP protocol.
- This application will communicate with the database that holds all the booking information. Users can contact with server-side through HTTP protocol by means of a function that is called HTTP Service. This function allows the application to use the data retrieved by the server to fulfill the request fired by the user.

4. SYSTEM DIAGRAMS

- Activity Diagram:

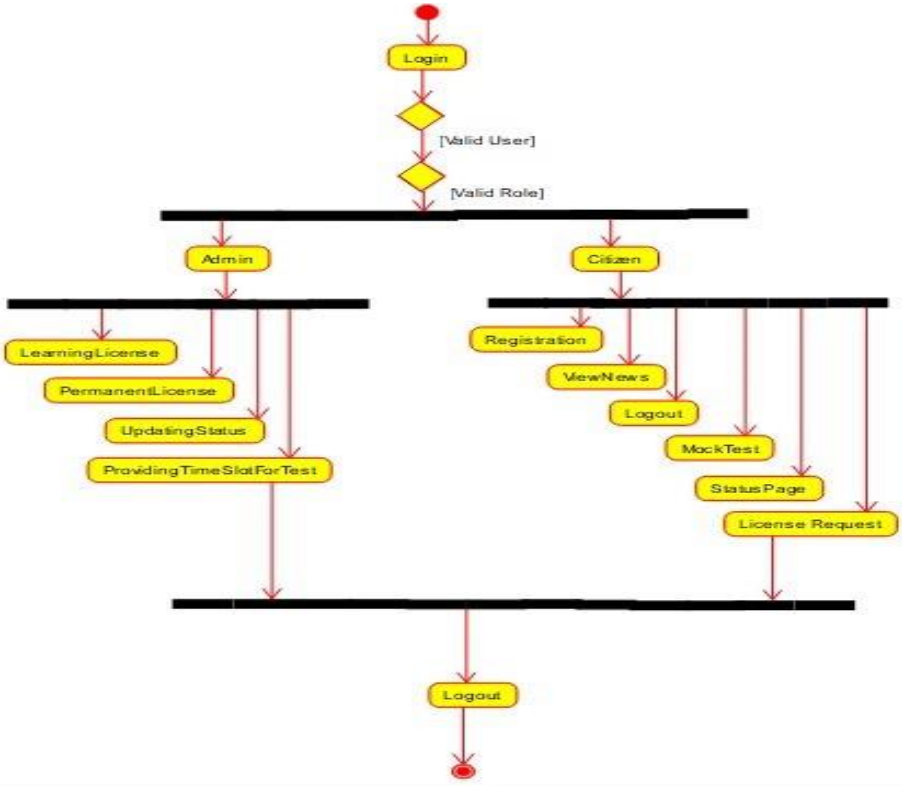

Fig:-1

- **Sequence diagram:**

- **Admin's Sequence**:-

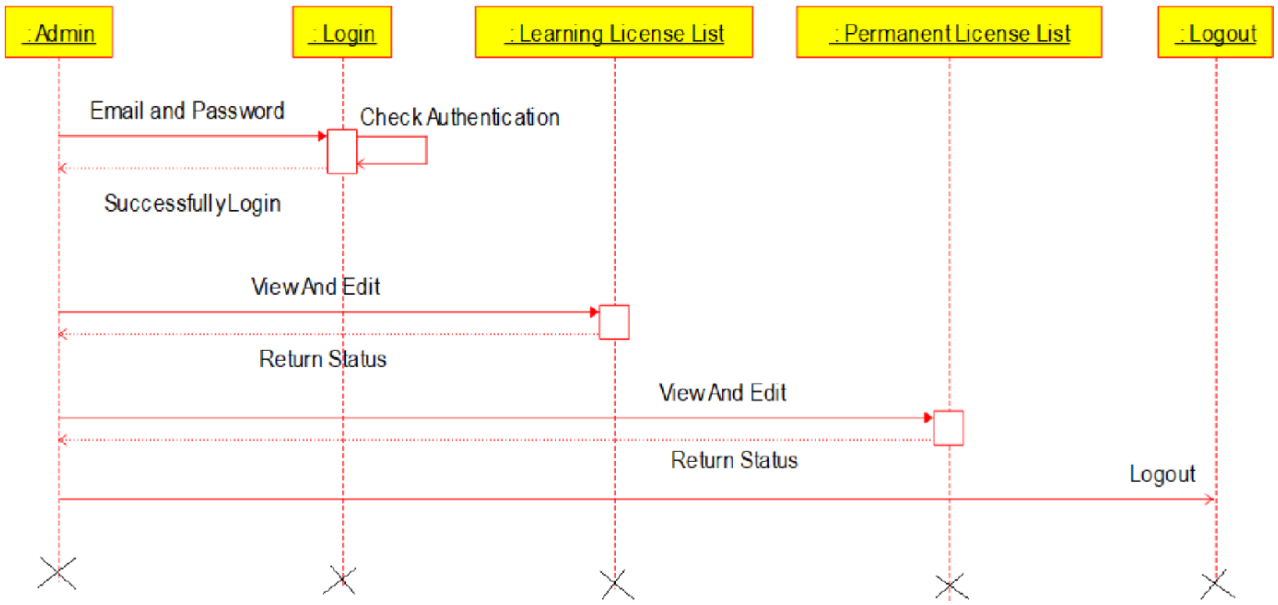

Fig:-2

- **Citizen's Sequence**:

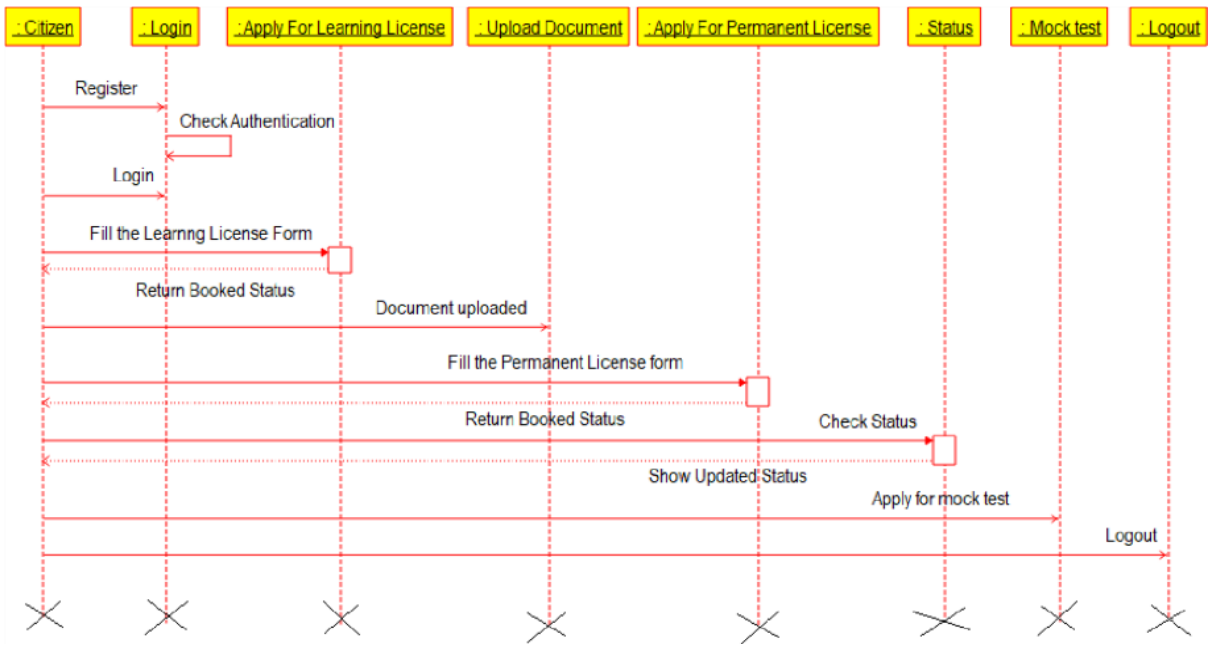

Fig:-3

- **Use Case Diagrams:**

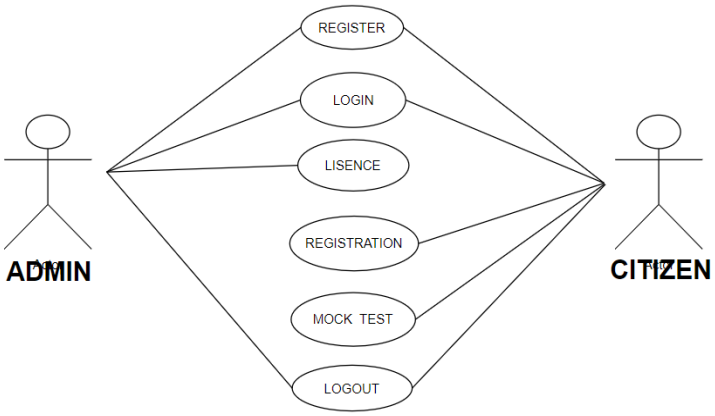

Fig:-4

- **Class-Diagram:**

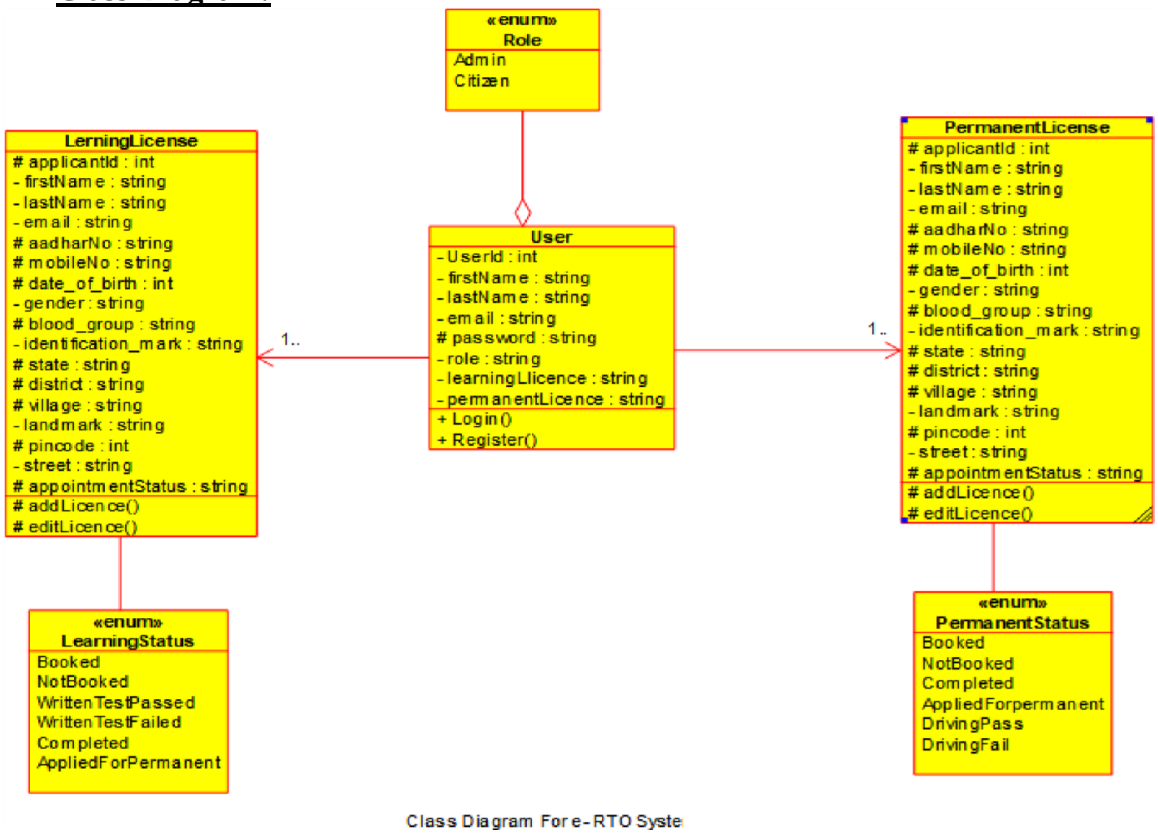

Fig:-5

- **ER-Diagram:**

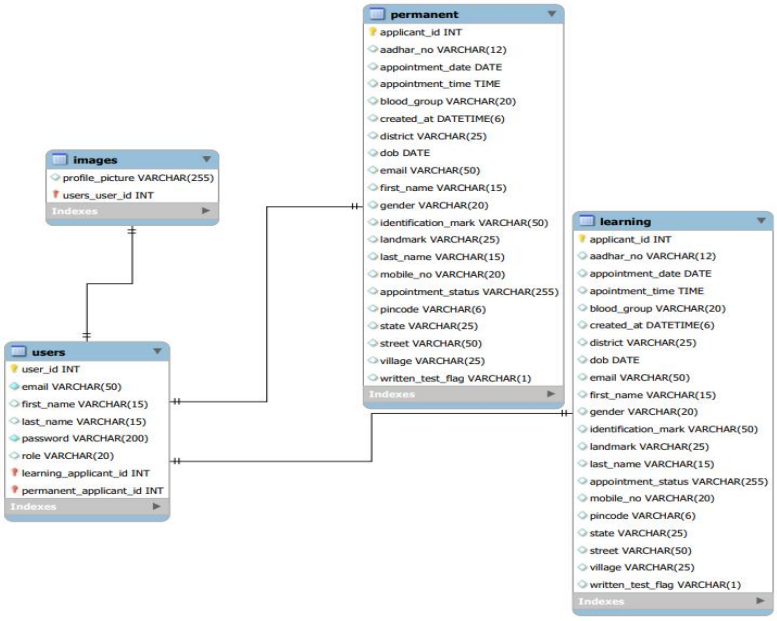

Fig.6

- **Flow Diagram:**

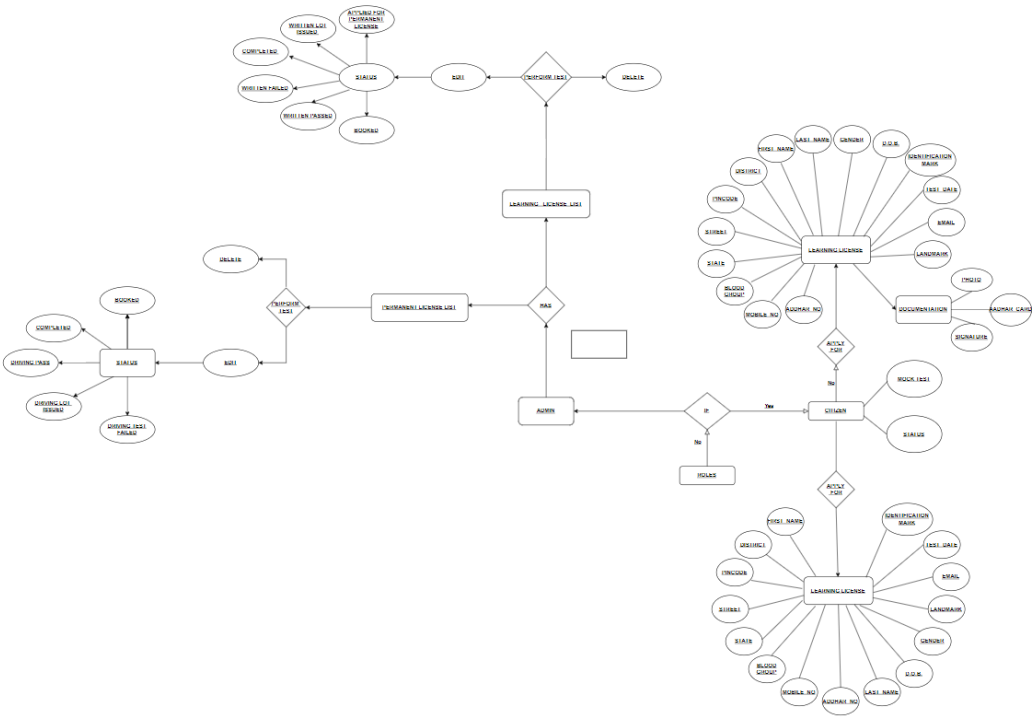

Fig:-7

5. TABLE STRUCTURE

- **Users:**

```
+------------+--------------+------+-----+---------+----------------+
| Field      | Type         | Null | Key | Default | Extra          |
+------------+--------------+------+-----+---------+----------------+
| user_id    | int          | NO   | PRI | NULL    | auto_increment |
| email      | varchar(50)  | NO   | UNI | NULL    |                |
| first_name | varchar(15)  | YES  |     | NULL    |                |
| last_name  | varchar(15)  | YES  |     | NULL    |                |
| password   | varchar(200) | NO   |     | NULL    |                |
| role       | varchar(20)  | YES  |     | NULL    |                |
+------------+--------------+------+-----+---------+----------------+
6 rows in set (0.02 sec)
```

- **Learning:**

```
+---------------------+-------------+------+-----+---------+-------+
| Field               | Type        | Null | Key | Default | Extra |
+---------------------+-------------+------+-----+---------+-------+
| applicant_id        | int         | NO   | PRI | NULL    |       |
| aadhar_no           | varchar(12) | YES  | UNI | NULL    |       |
| appointment_date    | date        | YES  |     | NULL    |       |
| apointment_time     | time        | YES  |     | NULL    |       |
| blood_group         | varchar(20) | YES  |     | NULL    |       |
| created_at          | datetime(6) | YES  |     | NULL    |       |
| district            | varchar(25) | YES  |     | NULL    |       |
| dob                 | date        | YES  |     | NULL    |       |
| email               | varchar(50) | YES  |     | NULL    |       |
| first_name          | varchar(15) | YES  |     | NULL    |       |
| gender              | varchar(20) | YES  |     | NULL    |       |
| identification_mark | varchar(50) | YES  |     | NULL    |       |
| landmark            | varchar(25) | YES  |     | NULL    |       |
| last_name           | varchar(15) | YES  |     | NULL    |       |
| appointment_status  | varchar(255)| YES  |     | NULL    |       |
| mobile_no           | varchar(20) | YES  |     | NULL    |       |
| pincode             | varchar(6)  | YES  |     | NULL    |       |
| state               | varchar(25) | YES  |     | NULL    |       |
| street              | varchar(50) | YES  |     | NULL    |       |
| village             | varchar(25) | YES  |     | NULL    |       |
| written_test_flag   | varchar(1)  | YES  |     | NULL    |       |
| user_id             | int         | YES  | MUL | NULL    |       |
+---------------------+-------------+------+-----+---------+-------+
22 rows in set (0.01 sec)
```

- **Permanent:**

Field	Type	Null	Key	Default	Extra
applicant_id	int	NO	PRI	NULL	
aadhar_no	varchar(12)	YES	UNI	NULL	
appointment_date	date	YES		NULL	
appointment_time	time	YES		NULL	
blood_group	varchar(20)	YES		NULL	
created_at	datetime(6)	YES		NULL	
district	varchar(25)	YES		NULL	
dob	date	YES		NULL	
email	varchar(50)	YES		NULL	
first_name	varchar(15)	YES		NULL	
gender	varchar(20)	YES		NULL	
identification_mark	varchar(50)	YES		NULL	
landmark	varchar(25)	YES		NULL	
last_name	varchar(15)	YES		NULL	
mobile_no	varchar(20)	YES		NULL	
appointment_status	varchar(255)	YES		NULL	
pincode	varchar(6)	YES		NULL	
state	varchar(25)	YES		NULL	
street	varchar(50)	YES		NULL	
village	varchar(25)	YES		NULL	
written_test_flag	varchar(1)	YES		NULL	
user_id	int	YES	MUL	NULL	

22 rows in set (0.01 sec)

- **app _id:**

Field	Type	Null	Key	Default	Extra
next_val	bigint	YES		NULL	

1 row in set (0.00 sec)

- **images:**

Field	Type	Null	Key	Default	Extra
user_id	int	NO	PRI	NULL	
profile_picture	varchar(255)	YES		NULL	

2 rows in set (0.00 sec)

CONCLUSION:

- The system generated only a limited number of reports. If more detailed reports are required the system can be directed Even though the system has well communication facility, it's not enough.
- The mail service can be enhanced with features bcc, cc, etc. The system has full security but the account information is for the customer credit information.
- Improved communication, and ease of access to RTO resources such as Registration forms, etc, will help foster a stronger user relationship.
- e - RTO management will empower you to spend more time and effort developing your users' lifelong learning license.
- In this e-RTO management completes the global Module. (Anywhere Any Time)
- In this system the main entity is Admin who has all the rights.
- Here the main tasks of admin are update/delete registration, and license.

Future Scope:

This project can be enhanced further by adding some more features. The application is designed in such a way that any further enhancements can be done with ease. The system has the capability for easy integration with other systems. New modules can be added to the existing system with less effort. In future, a new function or procedure can be easily added to the system through these classes. Or even a new class can be added.

The software is flexible enough to be modified and implemented as per future requirements. We have tried our best to present this free and user–friendly website to Regional Offices.

5. REFERENCES

References:

- React Tutorial (w3schools.com)
- Learn Spring Boot | Baeldung
- Spring Data JPA - Reference Documentation
- React – A JavaScript library for building user interfaces (reactjs.org)
- Bootstrap · the most popular HTML, CSS, and JS library in the world. (getbootstrap.com)