A PROJECT ON

E-Regional Transport Office Management System

SUBMITTED IN

PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE COURSE OF DIPLOMA IN ADVANCED COMPUTING FROM CDAC



SUNBEAM INSTITUTE OF INFORMATION TECHNOLOGY

Hinjawadi **SUBMITTED BY:**

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UNDER THE GUIDENCE OF:

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Faculty Member

Sunbeam Institute of Information Technology, Pune

ACKNOWLEDGEMENT

A project usually falls short of its expectation unless aided and guided by the right persons at the right time. We avail this opportunity to express our deep sense of gratitude towards Mr. Nitin Kudale (Center Coordinator, SIIT, Pune) and Mr. Yogesh Kolhe (Course Coordinator, SIIT, Pune)

We are deeply indebted and grateful to them for their guidance, encouragement and deep concern for our project. Without their critical evaluation and suggestions at every stage of the project, this project could never have reached its present form.

Last but not the least we thank the entire faculty and the staff members of Sunbeam Institute of Information Technology, Pune for their support.

Patil Ganesh Atul 0225 PG-DAC SIIT Pune



CERTIFICATE

This is to certify that the project work under the title 'E-Regional Transport Office Management System' is done by Patil Ganesh Atul in partial fulfillment of the requirement for award of Diploma in Advanced Computing Course.

Prof. Pooja Jaiswal Project Guide Mr. Yogesh Kolhe Course Co-Coordinator

Date:11th August 2025

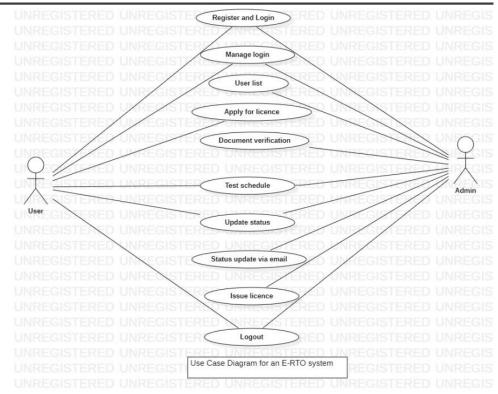
1. INTRODUCTION TO PROJECT

Now-a-days in our country most of the existing RTO offices didn't have systematic driving license verification system. Regional Transport Office (RTO) is an Indian government bureau which is responsible for the registration of vehicles and issue of Driver's License in India. 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 license and Permanent license. Admin can update application status and can also manage time slots for tests. The main motive of the system is to make the daily activities efficient and to provide fast response by storing and retrieving information and informing it to the users via Email.

2.REQUIREMENTS

2.1 FUNCTIONAL REQUIREMENTS

- User registration and authentication: User should be able to register and login with their information/detail. Admin should have separate login with additional privileges.
- Licence application: User should be able to apply for learning and driving licence online. Users should provide necessary document and personal information for the application.
- Document verification: The system should integrate algorithm to scan and verify up loaded documents including proof of identify and residence
- . Licence status check: User should be able to check the status of their licence application



2.1 User Account

The applicant, who will henceforth be called the 'user', will be presented with multiple options by the E-RTO Management System as the first step in their interaction. A user can choose one of these options depending on whether they are a guest or a registered user, and whether they wish to only view licensing information or also apply for and manage their license.

A user who has previously registered with the system would have been provided with a unique User ID and a password. This 'personal information' will henceforth be referred to as the 'profile'. Such a user with a profile in the system database shall be called a registered user.

A registered user will be able to:

- 1. Apply for a Learner's License (LL) or a Permanent License (PL) by filling the required online form.
- 2. Upload necessary identification and address proof documents for OCR-based verification.
- 3. Schedule appointments for driving tests.
- 4. Track the current status of their application.
- 5. Receive notifications via email or SMS about updates in their application process.

A new user, on the other hand, will either have to:

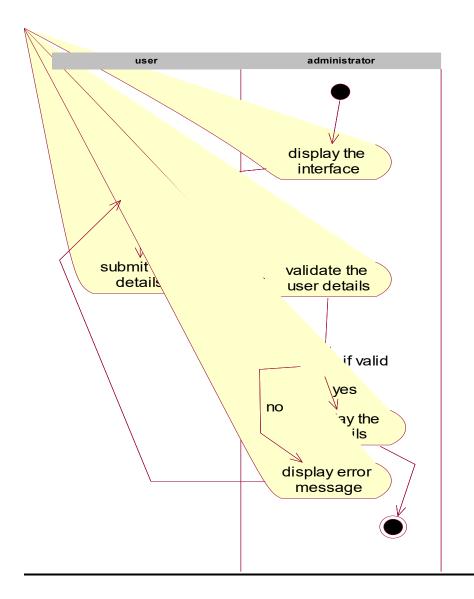
- a) Register themselves by providing personal details and creating login credentials, or
- b) Continue as a guest.

In case of a, the new user becomes a registered user with full access to application and scheduling features.

In case of b, the guest user can only view general licensing information, RTO guidelines, and available test slots — they cannot apply for a license or manage an application.

2.2 Registration and creation of user profile

The system shall require a user to register, in order to apply for license. It will ask the user for the following information at the least – a user id, a password, first name, last name, address, phone number, email address, sex, age and other necessary details. Then user can Login to system and apply for learner license first and then after generating learner license user can apply for permanent license.



1. Quick Search

The **Quick Search** feature on the E-RTO Management System homepage is designed to provide users with instant access to essential services and information without requiring them to navigate deep into the site. It serves as a central point for frequently accessed features, allowing both registered and guest users to quickly retrieve relevant details.

The Quick Search section contains the following elements:

Search for Application Status

Users can enter their Application Number or User ID to instantly check the current status of their Learner's License or Permanent License application.

1. The search result displays key information such as submission date, verification status, test appointment date, and final approval/rejection updates.

2. Making license application -

After having taken the user through the step 2.2, , The system allow users to apply for license . If yes, and

- 1. if the user has been a guest, he will have to first register and become a registered user and then log onto the system.
- 2. If the user is already a registered user, and if he has logged on already, he can apply for license but if he has been acting as a guest, he will have to log on.

Having ensured that the user is logged on validly .then user has to fill all the required details in learning license registration form an them he has to submit the details .

User can give mock test related to driving rules and all the regulation that has to be followed by every citizen to drive vehicles and to maintain all the laws.

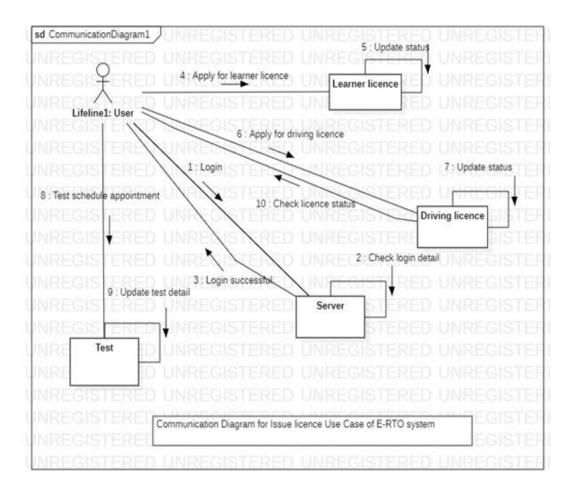
After applying for learning license, admin will verify the users detail and then he will update the status of users application form like completed, partially completed, failed, pending etc. this updated status will be visible to applicant in their profile by clicking in view license status.

When admin validate all the details of learning license application, user will be able to apply for driving license and then again same process will be followed by admin and learning license will get generated this generated license can be downloaded by user.

1. View license list-

The admin here can view the list of license application by using its profile by login using his/her id and password .after user logged in one learning license and permanent license list will be visible to him, then admin can modify the status of license application or delete the application if any user has wrong information or any for any other reason. After status updation by admin .users can see their status and also download the license

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1. NON FUNCTIONAL REQUIREMENTS

- 2.2.1Security: The system must ensure the security of user data like personal information and login credentials
- 2.2.2 Performance: Response time for document verification and status check should be fast. System should handle large no of users.
- 2.2.3Accessibility: The system should be available 24x7 with minimal downtime.
- 2.2.5 Integration: The system should integrate with OCR for document verification.
- 2.2.5 Usability: User interface should be intuitive and user friendly, ensure that user can easily navigate and interact with the system.

2.2.6Other Requirements:

- 1. Hardware Interfaces
 - 1)4GB or more
 - 2) Multi-core processor
 - 3)Storage 120GB or more

Software Interfaces

1)Front-end: HTML, CSS, JS

2)Back-end: Java EE- Spring Boot

3)Libraries: ReactJs

4) Editor: VS Code Editor, Spring Tool Suite(STS)

3. DESIGN

3.1 Database Design

The following table structures depict the database design.

<u>Table1: User Info</u>

Key Type/ Constraint	Column Name	Data Type	Length	Allow Null (1=Yes;0=No)
1	UserID	int	4	0
1	email	varchar	50	0
0	First_name	Varchar2	15	1
0	Last_name	Varchar2	15	1
0	password	Varchar2	200	0
0	role	enum	-	1

Table2: Learning

Field	type	null	Key	default	
Applicant_id	Int	No	PRI	null	
Aadhar_No	Varchar	No	UNI	Null	
Appointment_date	Date	Yes		Null	
Appointment_time	Time	Yes		null	
Blood_group	Varchar	Yes		Null	
Created_at	Varchar	Yes		Null	
District	Varchar	Yes		Null	
dob	Date	Yes		Null	
Email	Varchar	Yes		Null	
First name	Varchar	Yes		Null	
Gender	Varchar	Yes		Null	
Identification_mark	Varchar	Yes		Null	
Landmark	Varchar	yes		Null	
Last_name	Varchar	Yes		Null	
Appointment_status	Enum	Yes		Null	
Mobile_no	Varchar	Yes		Null	
Pincode	Varchar	Yes		Null	
State	Varchar	yes		Null	
Street	Varchar	Yes		Null	
Village	Varchar	Yes		null	
Written_test_flag	Varchar	Yes		Null	

Table 3-Permanent-

Table 3-Permanent-					
Field	type	null	Key	default	
Applicant_id	Int	No	PRI	null	
Aadhar No	Varchar	No	UNI	Null	
Appointment date	Date	Yes		Null	
Appointment time	Time	Yes		null	
Blood_group	Varchar	Yes		Null	
Created_at	Varchar	Yes		Null	
District	Varchar	Yes		Null	
dob	Date	Yes		Null	
Email	Varchar	Yes		Null	
First_name	Varchar	Yes		Null	
Gender	Varchar	Yes		Null	
Identification_mark	Varchar	Yes		Null	
Landmark	Varchar	yes		Null	
Last_name	Varchar	Yes		Null	
Appointment_status	Enum	Yes		Null	
Mobile_no	Varchar	Yes		Null	
Pincode	Varchar	Yes		Null	
State	Varchar	yes		Null	
Street	Varchar	Yes		Null	
Village	Varchar	Yes		null	
Written test flag	Varchar	Yes		Null	
User id	int	Yes		null	

Table4: images

Field	Туре	Null	key	Default	Extra
User_id	int	no	Pri	null	
Profile_picture	varchar	yes		null	

E-R Diagram, Dataflow diagram and Class Diagram:

Go to Appendix A

4. CODING STANDARDS IMPLEMENTED

1. Naming and Capitalization

Below summarizes the naming recommendations for identifiers in Pascal casing is used mainly (i.e. capitalize first letter of each word) with camel casing (capitalize each word except for the first one) being used in certain circumstances.

Identifier	Case	Examples	Additional Notes	
		Person, BankVault,	Class names should be based on "objects" or "real	
Class	Pascal	SMSMessage,	things" and should generally be nouns . No '_' signs	
		Dept	allowed. Do not use type prefixes like 'C' for class.	
Method	Camel	getDetails,	Methods should use verbs or verb phrases.	
Wicthod		updateStore	victious should use verbs of verb phrases.	
	Camel		Use descriptive parameter names. Parameter names	
Parameter		personName,	should be descriptive enough that the name of the	
rarameter		bankCode	parameter and its type can be used to determine its	
			meaning in most scenarios.	
Interface	Pascal with "I"	Disposable	Do not use the '' sign	
Interrace	prefix	Disposable	Do not use the _ sign	

Property	Pascal	ForeColor, BackColor	Use a noun or noun phrase to name properties.
Associated private member variable	_camelCase		Use underscore camel casing for the private member variables
Exception Class	Pascal with "Exception" suffix	WebException,	

Comments

- 1. Comment each type, each non-public type member, and each region declaration.
 - 2. Use end-line comments only on variable declaration lines. End-line comments are comments that follow code on a single line.
- 3. Separate comments from comment delimiters (apostrophe) or // with one space.
- 4. Begin the comment text with an uppercase letter.
- 5. End the comment with a period.
- **6.** Explain the code; do not repeat it.

5. TEST REPORT

Another group called Linux did the testing and the report of the testing is given hereunder. GENERAL TESTING:

	EKAL TESTI			ERROR MESSAGE
SR-	TECT CACE	EVECTED DECILIT	ACTUAL DECULT	
NO	TEST CASE		ACTUAL RESULT	
		Redirected to Next		
1	Register Page	page	OK	Nothing
				Please enter
				username and
2	Login Page	Pop-up will come	Ok	password again .
		Only users password		
3		will be reseted	Ok	Nothing
		Gives all license		
4	of license	details	Ok	Nothing
		All the fields should be		
5	filling	filled for submission	Ok	Nothing
	Checking	User is logged in or		
6	login or not	not	Ok	Nothing
		Add informations		
	details for	according to type of		
7	license	license	Ok	Nothing
	Goto to	Set added information		
8	license page	about person	Ok	Nothing
	Add			
	information			
	in permanent	Save this all data into		
9	form	license table	Ok	Nothing
		status updated in		
10	verification	users login	Ok	Nothing
		It shows the status in		
11	View status	license application	Ok	Nothing
	Status	meenee application	1 0	Hoeming

12		It will logout from user profile.	Ok	Nothing
	STATIC TESTING			
	Commenting not followed	All Web Application		

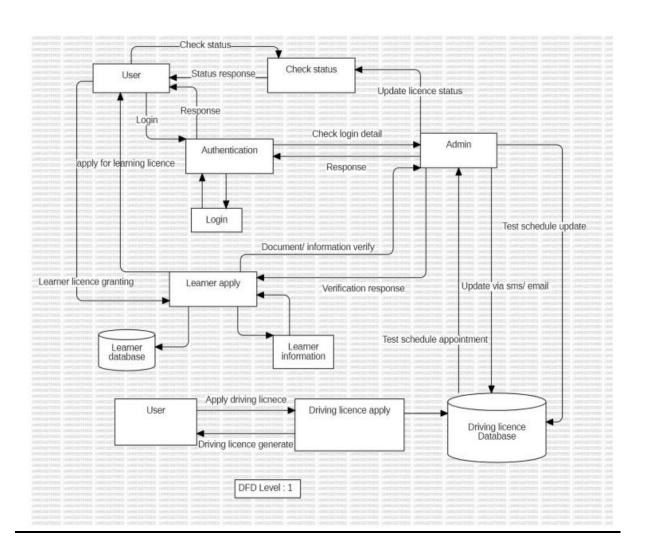
6. PROJECT MANAGEMENT RELATED STATISTICS

DATE	WORK PERFORMED	SLC Phase	Additional Notes
April 1,2025	Project Allotment and User Requirements Gathering		Our team met the client Mr. Nitinkudale (CEO, SIIT Pune) to know his requirements.
April 10,2025	Initial SRS Document Validation And Team Structure Decided	Requirement Analysis (Elicitation)	The initial SRS was presented to the client to understand his requirements better
April 21,2025	Designing the use-cases, Class Diagram, Collaboration Diagram, E-R Diagram and User Interfaces	Requirement Analysis & Design Phase	Database Design completed
May 8,2025	Business Logic Component design Started	Design Phase	
May 20,2025	Coding Phase Started	Coding Phase	70% of Class Library implemented.
May 30,2025	Implementation of Web Application and Window Application Started	Coding Phase	Class Library Development going on.
June 7, 2025	Off	Off	Off
June 20, 2025	Implementation of Web Application and Window Application Continued	Coding Phase and Unit Testing	Class Library Modified as per the need.
July 1, 2025	Implementation of Web Application and Window Application Continued	Coding Phase and Unit Testing	

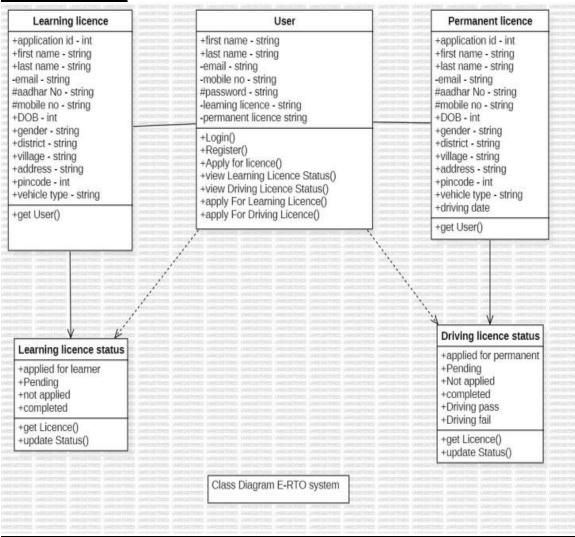
July 16, 2015			Module Integration was done by the Project Manager
July 20 , 2025	The Project was Tested by the respective Team Leaders and the Project Manager	Testing Phase (Module Testing)	
July 29, 2025	The Project was Submitted to Other Project Leader of Other Project Group For Testing	(Acceptance	The Project of Other Team was Taken up by the Team for Testing
August 4, 2025	The Errors Found were Removed	Debugging	The Project was complete for submission
August 11, 2025	Final Submission of Project		

Appendix A Entity Relationship Diagram

Data Flow Diagram:



Class Diagram

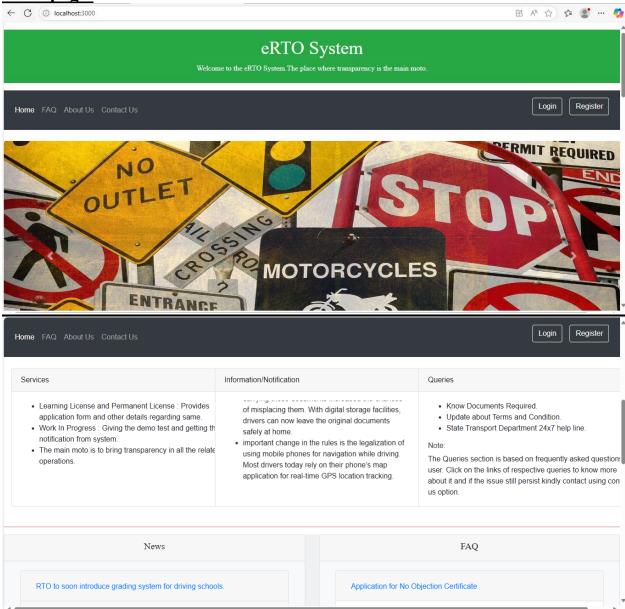


Component Diagram:

| Postabase | Postabas

Appendix B

Homepage:



Login Page:

Our Team

Aditi Thosar

Project Developer Sunbeam Rutuja Manglekar

Project Developer Sunbeam Prathmesh Naraje

Project Developer Sunbeam Ganesh Patil

Project Developer Sunbeam



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eRTO System

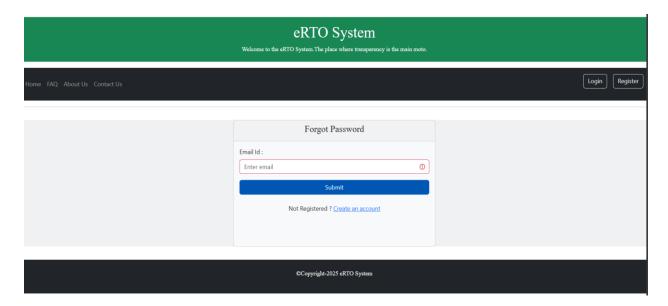
Welcome to the eRTO System. The place where transparency is the main moto.

Home FAQ About Us Contact Us

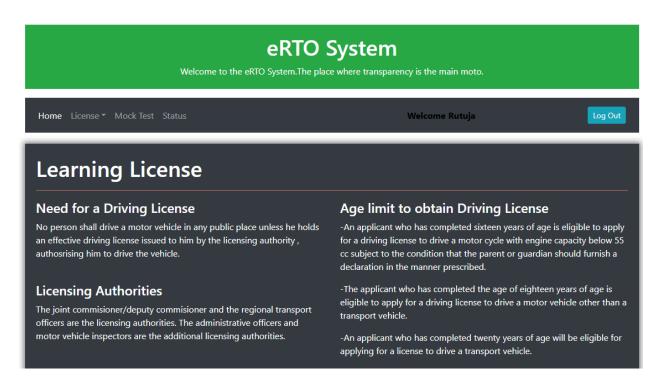
Login				
Email Id :				
rutujamanglekar 2001@gmail.com				
Password:				
Login				
Forgot Password Not Registered ? Create an account				

User Registration: eRTO System Welcome to the eRTO System. The place where transparency is the main moto. Register Home FAQ About Us Contact Us Register/SignUp First Name Last Name Enter First name ① ① Enter Last name Email Id: ① Enter email Password: ① Enter password Your password must be 8-20 characters long .Must contain 1 capital letter and 1 number.Must not Register/SignUp

Forgot Password Page:



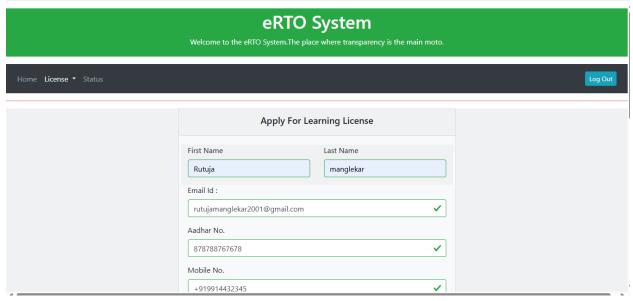
User Profile Page for learning License:

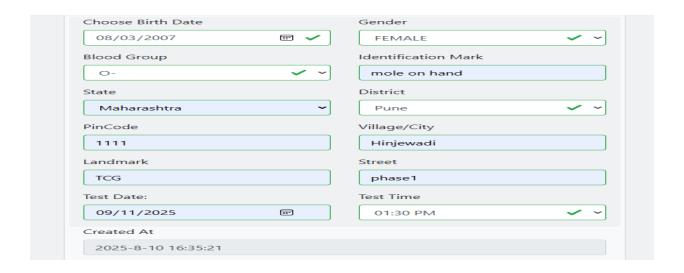


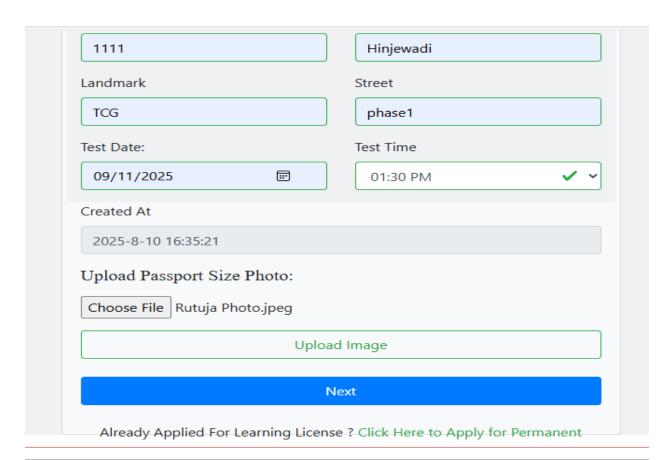
User Profile Page for Permanant License:

Permanent License The faculty of online slot booking for test of completence of driving license has been provided. Please visit the website for scheduling an -The test of competence will be conducted by the competent authority. -The applicant should bring a vehicle of the type to which the application appointment. -The application should satisfy the officer conducting the test regarding his capability to drive the vehicle and his ability to perform the tasks **Procedure:** -Schedule an appointment for the test of competence online by visiting the website or any RTO office where such facility exists. In other cases specified in Rule-15(2) of the CMVR. -The candidate who passes the test of competence successfully will be schedule an appointment directly at the office concerned. issued with a driving license and sent through speed post to the address furnished. -An application in Form 4, for a permanent driving license shall be made along with the learner's license obtained for such class of vehicle. -Fees as prescribed along with user charges. -The applicant who has held a valid Learner's license, for a period of at least 30 days, shall be competent to appear for the test of competence. ©Copyright-2025 eRTO System

LicenseApplicationpage:

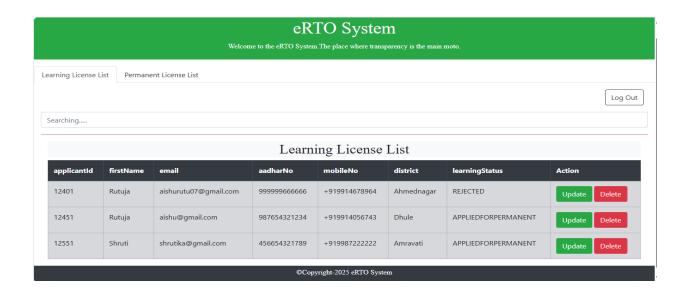




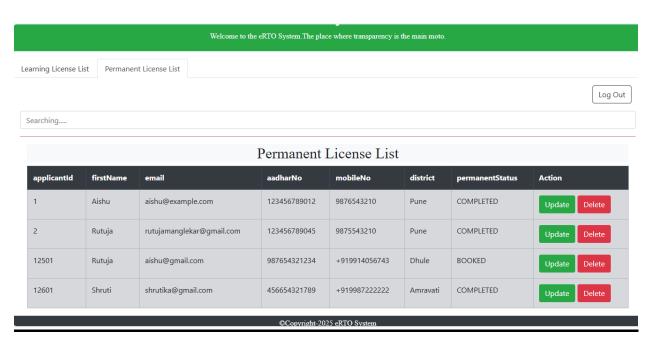


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Admin Login Page (Learning License List):



Admin Login Page (Permanent License List):



7.REFERENCES:

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https://vahan.parivahan.gov.in/vahanservice/vahan/ui/statevalidation/homepage.xhtml?statecd=Mzc2MzM2MzAzNjY0MzIzODM3NjIzNjY0MzY2MjM3NGQ0OA==

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