

COIS 4000Y Complete Project Design

GROUP - 2

Members of the group

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We are the company the Trent Innovation Group.

Purpose of the project: (Devashish)

The purpose of the project is to redesign the database management system for the Ministry of National Resources and Forestry. Our goal is to bring the system up to current production standards and improve the services offered to the clients.

We are introducing an integration system for the customer portal which will allow for easy form submissions and information input directly into the company's database. This includes the integration of the MFPA registration exam, ensuring that all the necessary information is stored in the database for future reference. We understand the importance of secure data, so we will be implementing Access Level security to ensure the confidentiality of the information stored.

Our team will also be creating a web interface for the ministry staff, allowing them to send queries and modify the database based on their access levels. We will also be automating a lot of processes which will streamline many of the previously manual and time-consuming procedures, such as form submissions and data collection for the Municipal Property Assessment Corporation.

We are confident that this redesign will bring significant improvements to the database management system and make it more user-friendly and efficient for both the clients and the ministry staff.

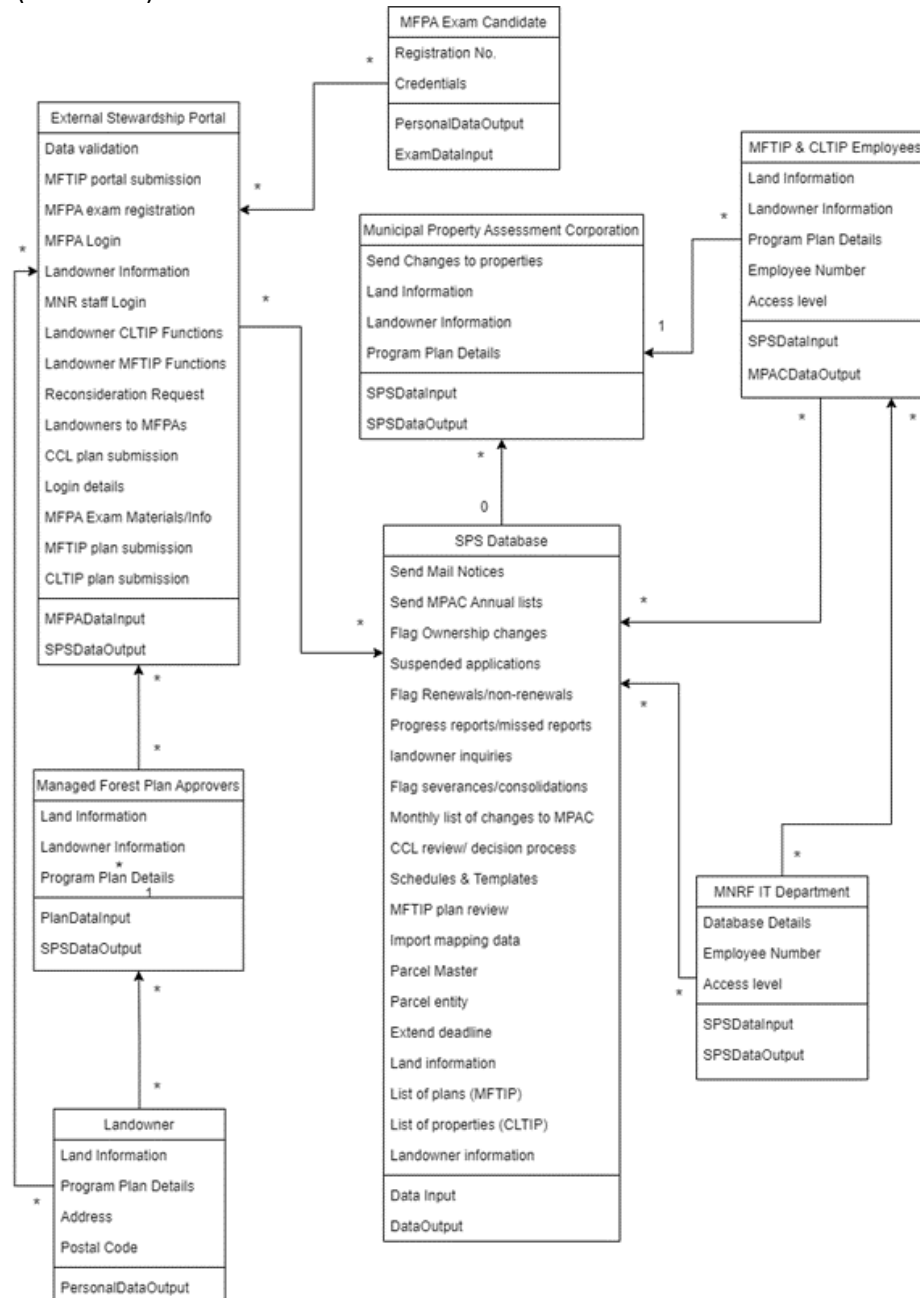
Any terminology or relevant facts which might not be obvious that the graders need to know (Are you using internal company lingo, or talking anything specific about any sort of key subject area, or anywhere that you've needed to pick a term to use that might not be clear what it means)

List of APIs and off the shelf components (Amber)

1. PHP API: For connecting the front-end interface with the back-end database.
2. JavaScript API: For adding interactive and dynamic features to the website and improving the user experience.
3. HTML/CSS API: For creating the structure and design of the website.
4. MySQL API: For managing and accessing the database and its data.
5. jQuery API: For creating and handling animations, event handling, and other front-end functionality.
6. Bootstrap API: For creating responsive, mobile-friendly design and layouts.
7. AWS API: For hosting the website and database, providing reliable and scalable infrastructure.
8. Microsoft Dynamics API: For automating business processes and managing customer data.

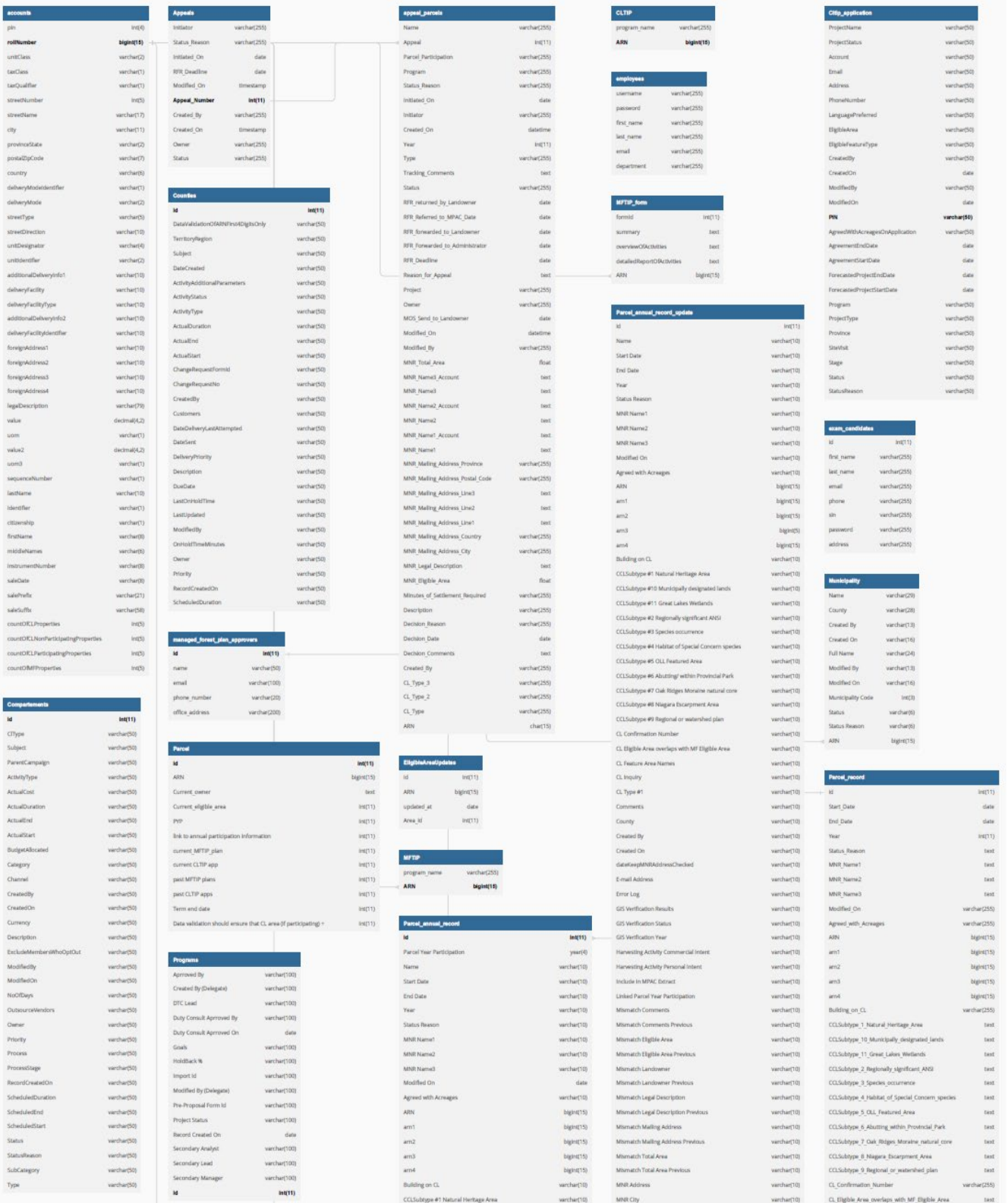
9. Power Apps API: For creating custom business applications that run on the Microsoft Dynamics platform.
10. Access Level Security API: For managing and securing user access to the database and website.

Class Diagram: (Devashish)



Database Design: (Liam, Amber, Devashish)

It's a continuous database design, but do due document limit it has been cut out into pieces.



Ownership_change

Id	int(11)
Project Name	varchar(50)
Project Type	varchar(50)
Account	varchar(50)
Email	varchar(50)
Phone Number	varchar(50)
New Account	varchar(50)
New Email	varchar(50)
New Phone Number	varchar(50)
Project Start Date	date
Project End Date	date
Ownership Change Date	date
Created By	varchar(50)
Created On	date
Modified By	varchar(50)
Modified On	date
PIN	varchar(50)
ARN	bigint(15)

plans

id	int(11)
Aboriginal Groups Involved	varchar(100)
Animal Care Protocol	varchar(100)
Approach or Methodology	varchar(100)
Approval Comments	varchar(255)
Associated Parcels	int(11)
Benefits	varchar(255)
Case	varchar(20)
Census Subdivision	varchar(100)
City	varchar(100)
Claims Overlay Reason	varchar(255)
Client Share (Bowl)	decimal(10,2)
Client Share %	decimal(5,2)
Client Share Amount	decimal(10,2)
Client Type for 1037	varchar(100)
Closure Comments	varchar(255)
Closure Reason	varchar(100)
Community Support	varchar(100)
Construction End Date	date
Construction Start Date	date
Costs Incurred From	date
Costs Incurred To	date
County	varchar(100)
Created By (Delegate)	varchar(100)
Currency	varchar(10)
currencyTemp	decimal(10,2)
currencyTemp (Bowl)	decimal(10,2)
Description	text
Duty To Consult	varchar(100)
EA Approved On	date
Exchange Rate	decimal(10,4)
Executed Date	date
Federal Bidding	varchar(100)
Federal Share %	decimal(5,2)
Federal Share Amount	decimal(10,2)
Federal Share Amount (Bowl)	decimal(10,2)
Final Report Date	date
Final Report Data Multiyear	date
Final Contract Award	date
Final Tender Call	date
Forecasted Construction End Date	date
Forecasted Construction Start Date	date
Project Types Import Id	int(11)

Comments	varchar(10)	MNR Postal Code	varchar(10)	Include in MPAC Extract	varchar(255)
County	varchar(10)	MNR Total Area	varchar(10)	Linked_Parcel_Year_Participation	varchar(255)
Created By	varchar(10)	mnr_FirstName1	varchar(10)	Mismatch_Comments	text
Created On	varchar(10)	mnr_FirstName2	varchar(10)	Mismatch_Comments_Previous	text
Delegate(MNR)AddressChecked	varchar(10)	mnr_LastName1	varchar(10)	Mismatch_Eligible_Area	float
E-mail Address	varchar(10)	mnr_LastName2	varchar(10)	Mismatch_Eligible_Area_Previous	float
Error Log	varchar(10)	mnr_MiddleName1	varchar(10)	Mismatch_Landowner	text
GIS Verification Results	varchar(10)	mnr_MiddleName2	varchar(10)	Mismatch_Landowner_Previous	text
GIS Verification Status	varchar(10)	Modified By	varchar(10)	Mismatch_Legal_Description	text
GIS Verification Year	varchar(10)	MPAC Eligible Area	varchar(10)	Mismatch_Legal_Description_Previous	text
Harvesting Activity Commercial Intent	varchar(10)	MPAC Legal Description	varchar(10)	Mismatch_Mailing_Address	text
Harvesting Activity Personal Intent	varchar(10)	MPAC Mailing Address City	varchar(10)	Mismatch_Mailing_Address_Previous	text
Include in MPAC Extract	varchar(10)	MPAC Mailing Address Country	varchar(10)	Mismatch_Total_Area	float
Linked Parcel Year Participation	varchar(10)	MPAC Mailing Address Line1	varchar(10)	Mismatch_Total_Area_Previous	float
Mismatch Comments	varchar(10)	MPAC Mailing Address Line2	varchar(10)	MNR_Address	text
Mismatch Comments Previous	varchar(10)	MPAC Mailing Address Line3	varchar(10)	MNR_City	text
Mismatch_Eligible_Area	varchar(10)	MPAC Mailing Address Postal Code	varchar(10)	MNR_Eligible_Area	float
Mismatch_Eligible_Area_Previous	varchar(10)	MPAC Mailing Address Province	varchar(10)	MNR_Legal_Description	text
Mismatch_Landowner	varchar(10)	MPAC Name1	varchar(10)	MNR_Mailing_Address_Country	text
Mismatch_Landowner_Previous	varchar(10)	MPAC Name1 Citizenship	varchar(10)	MNR_Mailing_Address_Line2	text
Mismatch_Legal_Description	varchar(10)	MPAC Name1 Type	varchar(10)	MNR_Mailing_Address_Line3	text
Mismatch_Legal_Description_Previous	varchar(10)	MPAC Name2	varchar(10)	MNR_Mailing_Address_Province	text
Mismatch_Mailing_Address	varchar(10)	MPAC Name2 Citizenship	varchar(10)	MNR_Name1_Account	text
Mismatch_Mailing_Address_Previous	varchar(10)	MPAC Name2 Type	varchar(10)	MNR_Name1_Citizenship	text
Mismatch_Total_Area	varchar(10)	MPAC Name3	varchar(10)	MNR_Name1_Type	text
Mismatch_Total_Area_Previous	varchar(10)	MPAC Name3 Citizenship	varchar(10)	MNR_Name2_Account	text
MNR_Address	varchar(10)	MPAC Name3 Type	varchar(10)	MNR_Name2_Citizenship	text
MNR_City	varchar(10)	MPAC Total Area	varchar(10)	MNR_Name2_Type	text
MNR_Eligible_Area	varchar(10)	MPAC Verification Status	varchar(10)	MNR_Name3_Account	text
MNR_Legal_Description	varchar(10)	Municipality	varchar(10)	MNR_Name3_Citizenship	text
MNR_Mailing_Address_Country	varchar(10)	Net Eligible Forest Area (G)	varchar(10)	MNR_Name3_Type	text
MNR_Mailing_Address_Line2	varchar(10)	NonOverlaidMNRData	varchar(10)	MNR_Phone_Number	varchar(255)
MNR_Mailing_Address_Line3	varchar(10)	Other Lands (I)	varchar(10)	MNR_Postal_Code	varchar(255)
MNR_Mailing_Address_Province	varchar(10)	Owner	varchar(10)	MNR_Province	text
MNR_Name1_Account	varchar(10)	Parcel	varchar(10)	MNR_Street_Number	text
MNR_Name1_Type	varchar(10)	Parcel Involved in 1037Consent?	varchar(10)	MNR_Total_Area	float
MNR_Name1_Type	varchar(10)	Participate FPCTRP Before	varchar(10)	MPAC_Address	text
MNR_Name2_Account	varchar(10)	Participate FPCTRP Now	varchar(10)	MPAC_City	text
MNR_Name2_Citizenship	varchar(10)	Participate MFTTP Now	varchar(10)	MPAC_Eligible_Area	float
MNR_Name2_Type	varchar(10)	Participated MFTTP before?	varchar(10)	MPAC_Legal_Description	text
MNR_Name3_Account	varchar(10)	Participation Status	varchar(10)	MPAC_Mailing_Address_Country	text
MNR_Named_Citizenship	varchar(10)	Previous Parcel Year Participation	varchar(10)	MPAC_Mailing_Address_Line2	text
MNR_Name3_Type	varchar(10)	Previous Reason	varchar(10)	MPAC_Mailing_Address_Line3	text
MNR_Postal_Code	varchar(10)	Previous Status Reason	varchar(10)	MPAC_Mailing_Address_Province	text
MNR_Total_Area	varchar(10)	Program	varchar(10)	MPAC_Name1_Account	text
mnr_FirstName1	varchar(10)	Project	varchar(10)	MPAC_Name1_Citizenship	text
mnr_FirstName2	varchar(10)	Property is eligible under CLTP	varchar(10)	MPAC_Name1_Type	text
mnr_LastName1	varchar(10)	Provided On	varchar(10)	MPAC_Name2_Account	text
mnr_LastName2	varchar(10)	Reason	varchar(10)	MPAC_Name2_Citizenship	text
mnr_MiddleName1	varchar(10)	Reason for MPAC Extract	varchar(10)	MPAC_Name2_Type	text
mnr_MiddleName2	varchar(10)	Sent to MPAC On Date	varchar(10)	MPAC_Name3_Account	text
Modified By	varchar(10)	Special Policy	varchar(10)	MPAC_Name3_Citizenship	text
MPAC_Eligible_Area	varchar(10)	Status	varchar(10)	MPAC_Name3_Type	text
MPAC_Legal_Description	varchar(10)	Submitted Eligible Area	varchar(10)	MPAC_Phone_Number	varchar(255)
MPAC_Mailing_Address_City	varchar(10)	Temp CLConfirmationNumber	varchar(10)	MPAC_Postal_Code	varchar(255)
MPAC_Mailing_Address_Country	varchar(10)	Temporary ID	varchar(10)	MPAC_Province	text
MPAC_Mailing_Address_Line1	varchar(10)	Total Conservation Lands (H)	varchar(10)	MPAC_Street_Number	text
MPAC_Mailing_Address_Line2	varchar(10)	Total Elg. Forest Area (G)	varchar(10)	MPAC_Total_Area	float
MPAC_Mailing_Address_Line3	varchar(10)	Total Managed Forest Area (B)	varchar(10)	Original_Data_Entry_Date	varchar(255)
MPAC_Mailing_Address_Postal_Code	varchar(10)	Total Open Area (E)	varchar(10)	Parcel_Identifier	varchar(255)
MPAC_Mailing_Address_Province	varchar(10)	Total Open Area No trees (F)	varchar(10)	Parcel_Identifier_Previous	varchar(255)
MPAC_Name1	varchar(10)	Total Other Lands (I)	varchar(10)	Parcel_Status	text
MPAC_Name1_Citizenship	varchar(10)	Total Residence Area (J)	varchar(10)	Parcel_Status_Previous	text
MPAC_Name1_Type	varchar(10)	Total Summary	varchar(10)	Region	text
MPAC_Name2	varchar(10)	Update Address	varchar(10)	Submitted_By	text
MPAC_Name2_Citizenship	varchar(10)	Update Landowners	varchar(10)	Surveyor_Name	text
MPAC_Name2_Type	varchar(10)	a_record_id	int(11)	Township	text
MPAC_Name3	varchar(10)			Updated_By	text
MPAC_Name3_Citizenship	varchar(10)			Updated_On	varchar(255)
MPAC_Name3_Type	varchar(10)			Verification_Method	text
MPAC_Postal_Area	varchar(10)			Verification_Method_Previous	text
MPAC_Verification_Status	varchar(10)			Work_Order_Number	varchar(255)
Municipality	varchar(10)				
Net Eligible Forest Area (G)	varchar(10)				
NonOverlaidMNRData	varchar(10)				
Other Lands (I)	varchar(10)				
Owner	varchar(10)				
Parcel	varchar(10)				
Parcel Involved in 1037Consent?	varchar(10)				
Participate FPCTRP Before	varchar(10)				
Participate FPCTRP Now	varchar(10)				
Participate MFTTP Now	varchar(10)				
Participated MFTTP before?	varchar(10)				
Participation Status	varchar(10)				
Previous Parcel Year Participation	varchar(10)				
Previous Reason	varchar(10)				
Previous Status Reason	varchar(10)				
Program	varchar(10)				

Sent to MPAC

Project Name	int(11)
Project Type	int(11)
Account	int(11)
Project Start Date	int(11)
Project End Date	int(11)
Created By	text
Created On	date
Modified By	text
Modified On	date
Status	text
Status Type	text
Date Sent	date
Reason Sent	text
MPAC_Id	int(11)

Technical_problems

Id	bigint(11)
Name	varchar(10)
Individual Review Type	varchar(10)
Due Date	varchar(10)
Submitted On	varchar(10)
Owner	varchar(10)
Total Score	varchar(10)
Status Reason	varchar(10)
Modified On	varchar(10)
20 Year Plan Dates Correct	varchar(10)
Approved By	varchar(10)
Approved On	varchar(10)
Assessment Form Id	varchar(10)

Goals: (Amber)

- I. Implement a database management system that eliminates duplicates and unused entities by removing data from obsolete programs not utilized by the MFTIP/CLTIP program.
- II. Normalize data relationships through the use of database normalization techniques to align with actual business processes and real-life relationships.
- III. Develop an external stewardship portal that enables data input from MFPAs, LOs and new MFPA exam registration candidates through the use of forms and secure data inputs.
- IV. Create an intuitive internal MNRF staff portal to allow MNRF staff to easily manage and access data. Enhance the user-experience through the use of descriptive tooltips and an improved interface.
- V. Automate processes through the implementation of workflows that automatically query required data. Examples include handling ownership changes, generating monthly lists for MPAC, and querying RfR applications and appeals.
- VI. Incorporate modifiability into the internal portal views to allow MNRF staff to make changes when necessary, such as updating messages displayed in the external portal, modifying workflows, changing report outputs, and modifying automatically generated emails and letters.
- VII. Provide MNRF with the ability to modify forms, including updating the format, text, and appearance of forms for mailout lists, as well as modifying data displayed on the external portal. Access level security will be in place to ensure the confidentiality of sensitive information. The modifications will be performed by authorized MNRF staff members based on their respective access levels.
- VIII. Provide MNRF with the ability to change forms by updating the format, text, and look of the forms for the mailout lists as well as modify data displayed on the external portal.

Internal Stakeholders: (Liam)

- MFTIP & CLTIP staff
- MNRF IT department
- Finance department
- Management team
- Compliance department

External Stakeholders: (Devashish)

- MPAC (Municipal Property Assessment Corporation)
- MFPAs (Managed Forest Protection Areas)

- Landowners
- Data Entry Service Provider
- Environmental organizations
- Government agencies
- Consultants and contractors.

Constraints: (Devashish)

a. Solution Constraints:

- i. Compliance with government regulations regarding information security, privacy, accessibility, and digital service standards as per the guidelines set by <https://www.ontario.ca/page/information-technology-standards>.
- ii. Reliable network connectivity and infrastructure to ensure seamless communication and data transfer.
- iii. Prevention of security breaches and vulnerabilities through regular security audits and penetration testing.
- iv. Adherence to software development best practices to mitigate risk and ensure compatibility with existing systems.
- v. Proper training and support for end-users to ensure smooth adoption and utilization of the new system.

b. Project Constraints:

- i. Schedule: The project must be completed by April 2023, adhering to the established project timeline.
- ii. Budget: The project must be completed within a budget of 90,000 CAD, and any additional costs must be approved by MNRF.
- iii. Software: Access to acceptable software solutions must be approved by MNRF, and the solutions must align with the project goals and requirements.
- iv. Technical expertise: The project team must possess the necessary technical expertise to navigate the steep learning curves associated with industrial software solutions.
- v. Resources: Adequate resources, including manpower and equipment, must be available to ensure the timely completion of the project.

(Amber)

Naming Convention	Definition
MNRF	Ministry of Natural Resources and Forestry
CLTIP	Conservation Land Tax Incentive Program
MFTIP	Managed Forest Tax Incentive Program
MPAC	Municipal Property Assessment Corporation
RFR	Request for Reconsideration
MFPA	Managed Forest Plan Approver
LO	Land Owner
PYP	Parcel Year Participation
ARN	Assessment Roll Number
PSW	Provincially Significant Wetlands
AES, ALS	Areas of Natural & Scientific Interest Earth and Life
HNE	Niagara Escarpment Natural Areas
ESH	Habitat of certain endangered species
MNRF staff	Ministry of Natural Resources and Forestry employees
ALR	Access Level Restrictions
SFR	System File Restrictions
NDS	Network Data Security
IT	Information Technology
SP	Security Protocols
SDM	System Data Management
DM	Data Management
DR	Data Recovery
Naming Convention	Definition
DRP	Disaster Recovery Plan
BCDR	Business Continuity and Disaster Recovery

Functional Requirements: (Amber & Devashish)

Requirement #: 1

Description: The system must allow Landowners to log in using username and password

Rationale: For Landowners to be able to securely access and upload information about their plan details and 5-year progress reports

Originator: Landowners

Fit Criterion: The access to the account would be granted in less than 20 seconds or less and uploading of the information should be easy.

Customer Satisfaction: 5 **Customer dissatisfaction:** 4

Dependencies: Account creation requirement, Landowner log in requirement

Supporting Material: Scope diagram, business use cases list.

Requirement #: 2

Description: The system must allow MFPA's, MFTIP and CLTIP employees to log in using username and password

Rationale: For employees to be able to securely access/modify information

Originator: MFPA, MFTIP and CLTIP employees

Fit Criterion: The access to the account would be granted in less than 20 seconds or less.

Customer Satisfaction: 2 **Customer dissatisfaction:** 5

Dependencies: Account creation requirement, Employee information requirement

Supporting Material: Scope diagram, business use cases list.

Requirement #: 3

Description: The system must allow the MFTIP and CLTIP employees to create an account for the Landowners.

Rationale: For the Landowners to upload documents and check the status of their application.

Originator: MFTIP and CLTIP employees

Fit Criterion: The account shall contain the correct client details (Name, email, address, phone number, property information) and shall be created in 30 seconds or less after.

Customer Satisfaction: 3 **Customer dissatisfaction:** 5

Dependencies: Account creation requirement, Employee information requirement

Supporting Material: Scope diagram, business use cases list.

Requirement #: 4

Description: The system must send updates to the Landowners when their application has been updated

Rationale: To update the Landowner on the progress of their application.

Originator: MFTIP and CLTIP employees

Fit Criterion: The updates should be sent immediately as the MFTIP and CLTIP employees update their application.

Customer Satisfaction: 5

Customer dissatisfaction: 2

Dependencies: Account creation requirement, Log in requirement

Supporting Material: Scope diagram, business use cases list.

Requirement #: 5

Description: The system must send MPAC Updates about changes to properties' participation status and area for the current and previous tax years

Rationale: To update the MPAC according to the regulations.

Originator: System itself

Fit Criterion: The updates should be sent at the end of each tax year.

Customer Satisfaction: 3

Customer dissatisfaction: 1

Dependencies: Changes in the property programs details

Supporting Material: Scope diagram, business use cases list.

Requirement #: 6

Description: The system must send MPAC annual lists (new, renewals, removals) of newly participating and newly non-participating properties for the following tax year

Rationale: To update the MPAC according to the regulations.

Originator: System itself

Fit Criterion: The updates should be sent at the start of each tax year.

Customer Satisfaction: 4

Customer dissatisfaction: 3

Dependencies: Changes in the property programs details

Supporting Material: Scope diagram, business use cases list.

Requirement #: 7

Description: The system must mail notices and forms including details about land to landowners

Rationale: For the Landowners to upload documents and check the status of their application.

Originator: MFTIP and CLTIP employees

Fit Criterion: The notices and forms should be sent immediately as the MFTIP and CLTIP employees send them.

Customer Satisfaction: 5

Customer dissatisfaction: 3

Dependencies: Changes in their property's program details.

Supporting Material: Scope diagram, business use cases list.

Requirement #: 8

Description: The system must allow Program staff make updates to individual records in the database

Rationale: The Program staff need to work on the applications of the programs

Originator: MFTIP and CLTIP employees

Fit Criterion: The editing of different records should have an easy-to-use interface.

Customer Satisfaction: 5 **Customer dissatisfaction:** 5

Dependencies: MFTIP or CLTIP employee Log in, Record creation or updating

Supporting Material: Scope diagram, business use cases list.

Requirement #: 9

Description: The system must allow the MNRF IT department to make changes to the Database to push updates or resolve issues

Rationale: The IT department needs to maintain or trouble-shoot any Database related problems

Originator: MNRF IT department

Fit Criterion: Highest Access level authorization should be provided.

Customer Satisfaction: 5 **Customer dissatisfaction:** 5

Dependencies: Employee Log in

Supporting Material: Scope diagram, business use cases list.

Requirement #: 10

Description: The system must allow MFPA's to submit managed forest plan applications

Rationale: The MFPA's need to submit the applications in-order for MFTIP or CLTIP employees to take action on them

Originator: MFPA's

Fit Criterion: The process of submitting the application should be seamless and easy to use.

Customer Satisfaction: 5 **Customer dissatisfaction:** 5

Dependencies: MFPA Employee Log in

Supporting Material: Scope diagram, business use cases list.

Requirement #: 11

Description: The system must import data provided by MPAC into the database

Rationale: The Property details provided by MPAC defines what properties come under the programs

Originator: MPAC

Fit Criterion: The integration of data from MPAC should be seamless.

Customer Satisfaction: 5 **Customer dissatisfaction:** 4

Dependencies: Data being provided by MPAC

Supporting Material: Scope diagram, business use cases list.

Requirement #: 12

Description: The system should check the information uploaded through forms according to the respective entities.

Rationale: To make sure the database has accurate information and for security purposes.

Originator: Landowner, MFPA's

Fit Criterion: A system should be in place to check all the information is in accordance to the database

Customer Satisfaction: 5

Customer dissatisfaction: 4

Dependencies:

Supporting Material: Scope diagram, business use cases list.

Requirement #: 13

Description: The system must flag and send changes to property information to MFTIP and CLTIP monthly

Rationale: To update the employees on property information.

Originator: Landowner

Fit Criterion: They should be able access the information with ease.

Customer Satisfaction: 4

Customer dissatisfaction: 2

Dependencies: Employee log in, change in property information

Supporting Material: Scope diagram, business use cases list.

Requirement #: 14

Description: The system should allow registration for MFPA exam and provide the registered candidates access to exam information and study materials

Rationale: To automate the process of registration on MFPA exam.

Originator: Potential MFPA candidates

Fit Criterion: The process of registering for the exam should not be complicated.

Customer Satisfaction: 5

Customer dissatisfaction: 3

Dependencies: Candidates accurate information

Supporting Material: Scope diagram, business use cases list.

Functional Requirements: (Liam)

User Story 1: Form Submission As a user, I want to be able to submit forms to the Ministry of National Resources and Forestry through the customer portal, so that my information can be stored in the database.

Acceptance Criteria:

1. The user can access the form submission page through the customer portal.
2. The user can fill out the form and submit it to the database.
3. The form fields are validated to ensure all required information is provided.
4. The form submission is successful and the information is stored in the database.

User Story 2: Data Access As a user, I want to be able to access my data stored in the database, so that I can view and modify my information.

Acceptance Criteria:

1. The user can access their data through the customer portal.
2. The user can view their stored information.
3. The user can modify their information as needed.
4. The changes made by the user are saved to the database.

User Story 3: Query Submission As a staff member of the Ministry of National Resources and Forestry, I want to be able to submit queries into the database and modify the database according to my access level, so that I can perform my job duties effectively.

Acceptance Criteria:

1. The staff member can access the query submission page through the web interface.
2. The staff member can submit a query to the database.
3. The query is executed, and the results are displayed to the staff member.
4. The staff member can modify the database according to their access level.
5. The changes made by the staff member are saved to the database.

Use Case: Submit Forms (Liam)

Actors: Ministry Staff, Landowners

Pre-conditions: User must be registered and have access to the customer portal.

Flow of events:

1. User logs in to the customer portal.
2. User selects the option to submit a form.
3. User fills in the necessary information and submits the form.
4. System validates the information and saves it to the database.
5. System sends a confirmation message to the user.

Use Case: Query the Database

Actors: Ministry Staff

Pre-conditions: User must be registered and have access to the database.

Flow of events:

1. User logs in to the database management system.
2. User selects the option to query the database.
3. User enters the desired search criteria.
4. System returns the relevant information based on the search criteria.
5. User can modify or delete the information as needed.

Use Case: Automate Data Collection

Actors: Ministry Staff, Municipal Property Assessment Corporation

Pre-conditions: User must be registered and have access to the database.

Flow of events:

1. System automatically collects data from the database.
2. System processes the data and sends it to the Municipal Property Assessment Corporation.
3. Municipal Property Assessment Corporation receives the data and updates its own database.

Use Case: Access Level Security

Actors: Ministry Staff, Landowners

Pre-conditions: User must be registered and have access to the database.

Flow of events:

1. User logs in to the database management system.
2. System verifies the user's access level.
3. System only allows access to information that the user is authorized to view.
4. User can only modify or delete information that the user is authorized to modify or delete.

Use Case: Multilingual Support Actors: Ministry Staff, Landowners Pre-conditions: User must be registered and have access to the customer portal. Flow of events:

1. User logs in to the customer portal.
2. User selects the desired language (English or French).
3. System displays the customer portal in the selected language.
4. User can submit forms, view information, and interact with the system in the selected language.

Non-Functional Requirements: (Devashish)

a. User Interface Requirements:

Objective: To provide a user-friendly and accessible interface for all users.

Justification: The system will be used by individuals of all ages, including elderly landowners, so the interface must be simple and intuitive.

Compliance: The system will undergo user testing and certification with the involvement of elderly users to ensure ease of use.

b. Performance Requirements:

Objective: To provide constant and reliable access to the database.

Justification: The MNRF workflow is continuous, and the database is always online, so the system must be available 24/7.

Compliance: The servers and database will be robust and equipped with backup mechanisms to ensure reliability. In case of network overload, the system will have the intelligence to redirect and distribute traffic efficiently.

c. Cross-Browser Compatibility Requirements:

Objective: To make the system accessible on all browsers.

Justification: Users have different browser preferences, so the system must be compatible with all popular browsers.

Compliance: The system will be developed using cross-browser compatible libraries and frameworks and will undergo testing on various browsers to ensure full compatibility.

d. Maintenance and Support Requirements:

Objective: To ensure the system operates smoothly with minimal maintenance.

Justification: Regular maintenance is crucial for the system's smooth operation.

Compliance: The system will be certified to comply with this year's corporate branding standards and will require a maximum of 2 hours of maintenance every 3 months.

e. Security Requirements:

Objective: To provide secure access to confidential data.

Justification: The system will handle confidential data, so security is crucial to prevent data breaches.

Compliance: The system will implement industry-standard encryption techniques and server firewalls to ensure data security. User credentials will be verified with the database and unauthorized access attempts will be blocked by the server firewall. The system will also be available in both English and French, with different servers dedicated to each language.

f. Legal Requirements:

Objective: To comply with Canadian privacy laws.

Justification: To ensure proper legal compliance and prevent malpractice.

Compliance: The legal department or company will certify that the system complies with Canadian privacy laws.

g. Usability Requirements:

Objective: To improve user experience and enhance productivity.

Justification: A user-friendly and intuitive interface will enhance the user experience and increase productivity.

Compliance: The system will undergo thorough user testing and feedback to ensure the user experience meets the desired standards.

h. Scalability Requirements:

Objective: To accommodate increasing demand and data volume.

Justification: To ensure the system can handle future growth and expansion.

Compliance: The system will be designed with scalable architecture that can be easily expanded as needed.

i. Availability Requirements:

Objective: To provide near-constant system availability.

Justification: To ensure the system is always available for use.

Compliance: The system will be regularly monitored and maintained to prevent downtime and ensure a minimum availability rate of 99.9%.

j. Integration Requirements:

Objective: To allow for seamless integration with other systems and applications.

Justification: To improve overall efficiency and ensure seamless integration with other systems.

Compliance: The system will have APIs and integration tools to facilitate easy integration with other systems.

k. Data Backup and Recovery Requirements:

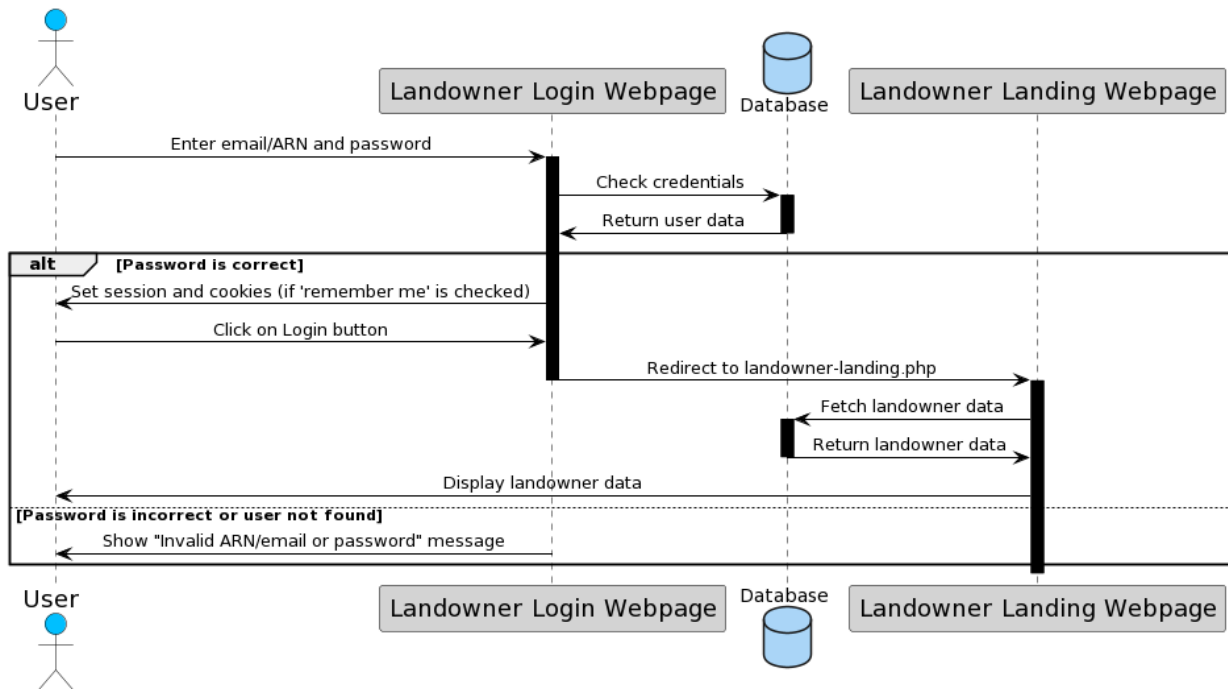
Objective: To ensure the security and availability of data.

Justification: To prevent data loss in case of system failures.

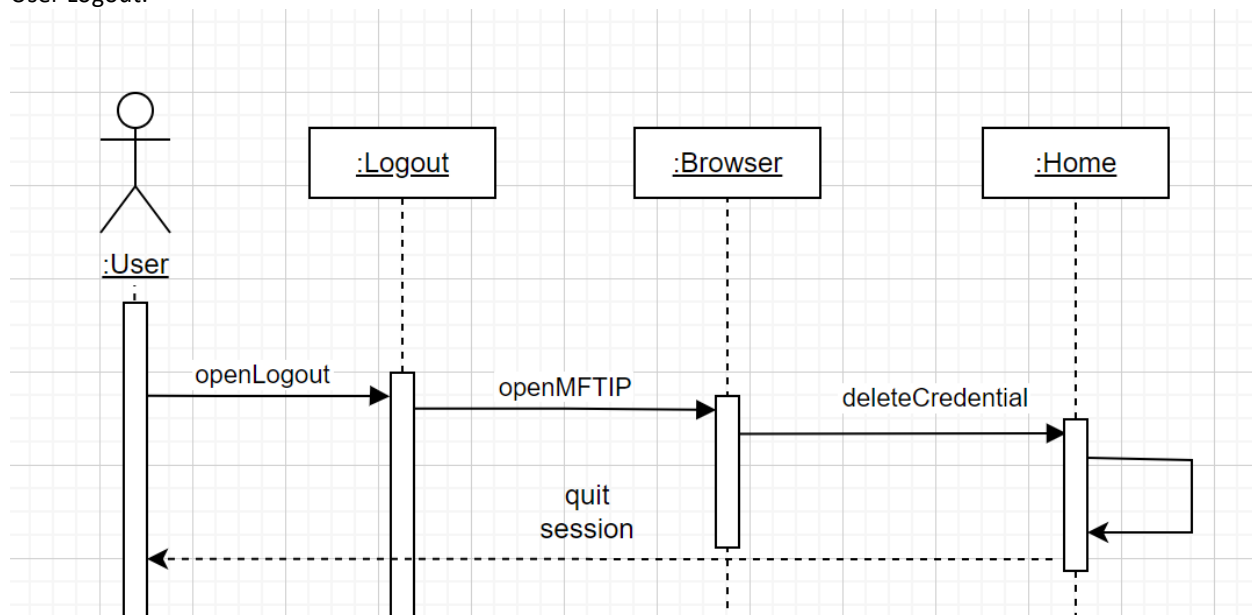
Compliance: The system will have regular data backups and a disaster recovery plan in place to minimize data loss and downtime.

Sequence Diagrams: (Amber, Liam, Devashish)

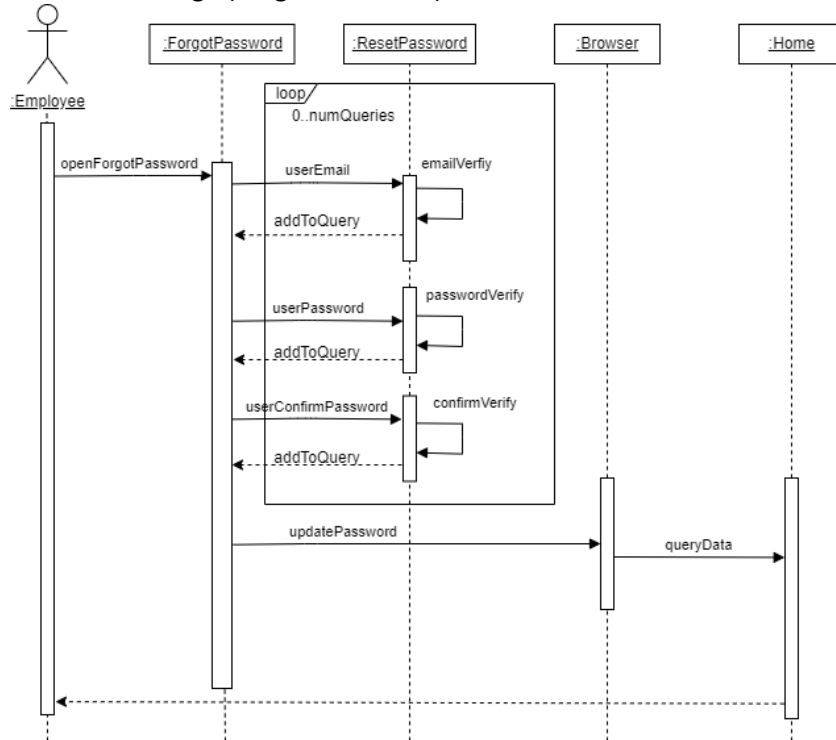
User Login:



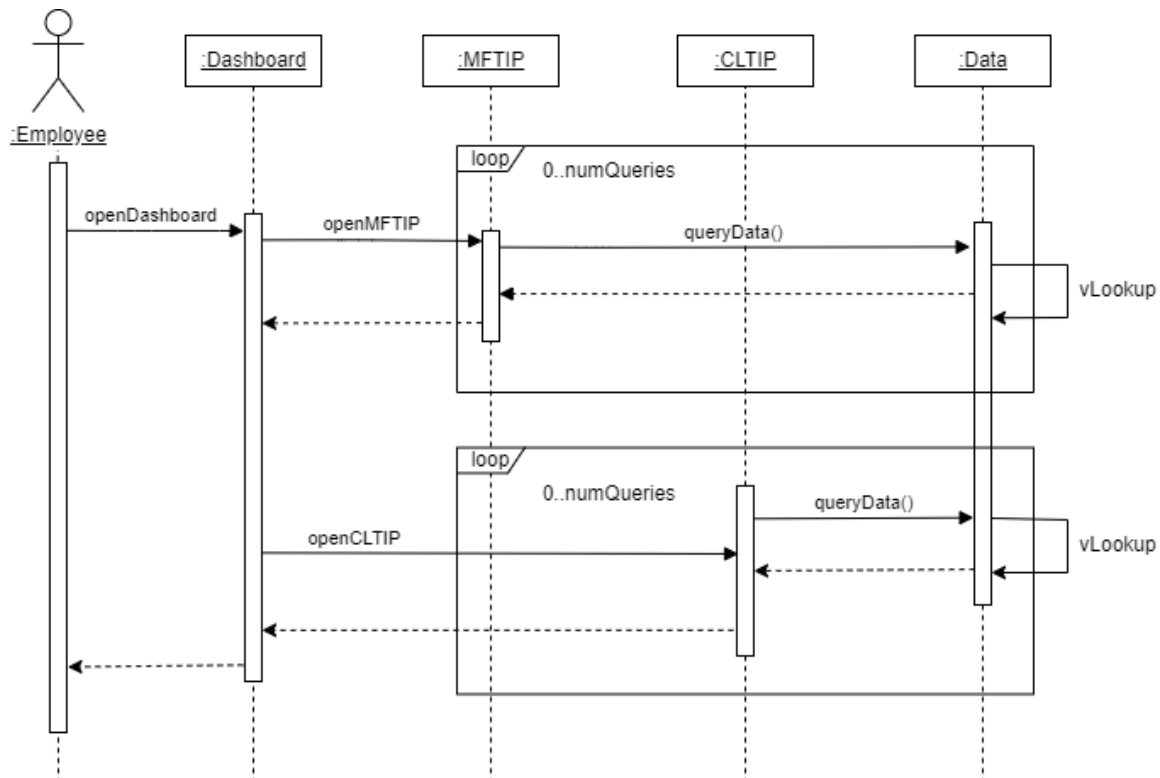
User Logout:



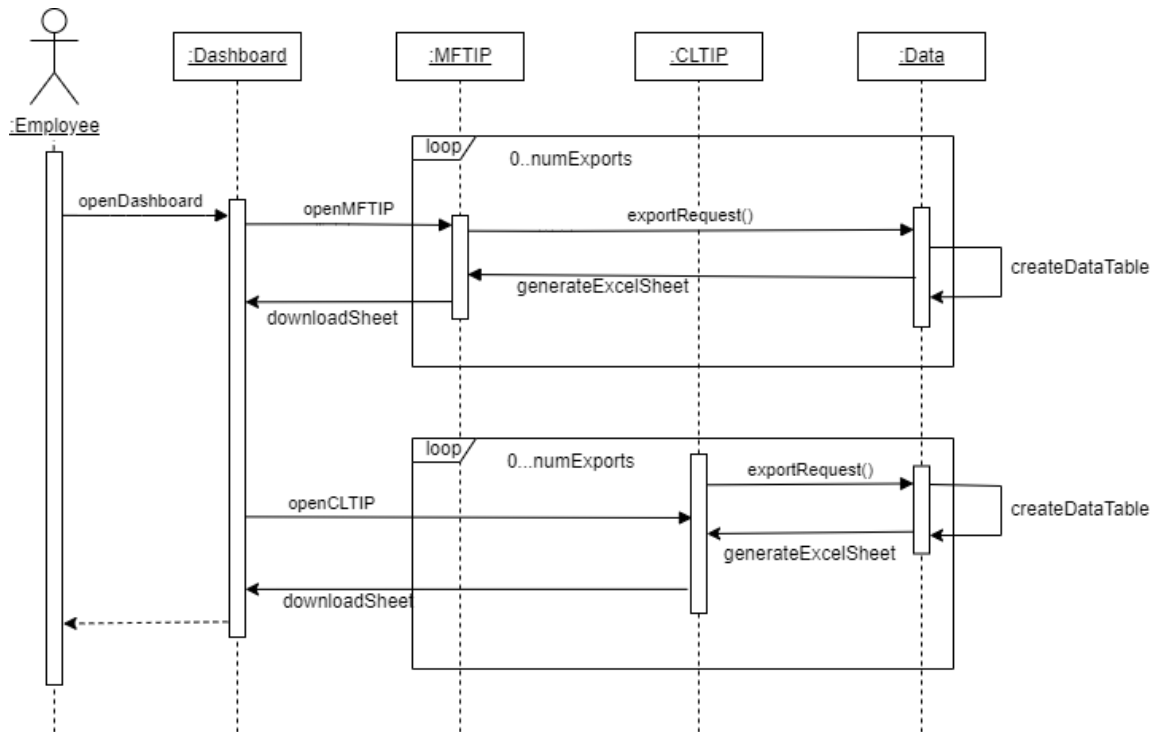
Password Change (Forgot Password):



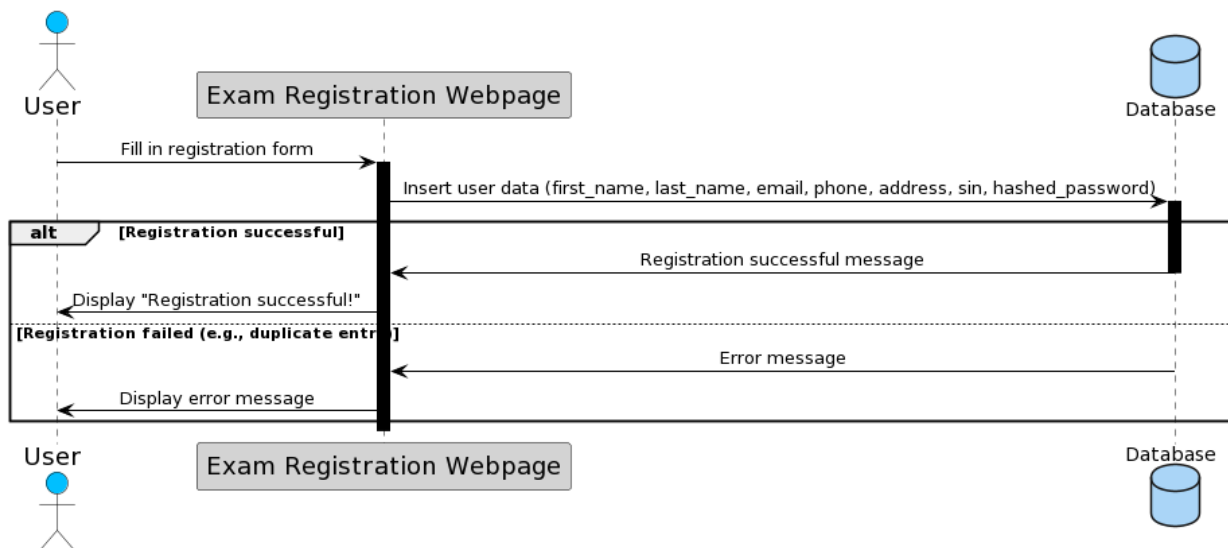
Staff Query Search:



Export Data:



MFPA Exam Registration:



Open project issues: (Amber)

1. Data Migration: The current database is hosted on a loki server, and there is a need to determine the method for migrating it with the client's existing database system.
2. Technical Limitations: The original plan was to utilize Microsoft Dynamics and Power Apps as the client's database and internal portal but access to these systems was not obtained.
3. Development Progress: The application is currently being developed using PHP, JavaScript, and HTML/CSS. The landowner and MFPA portal component has been completed, but the internal staff portal component is dependent on requirements from the client which are yet to be provided.
4. Client Requirements: The internal staff portal component requires specific requirements from the client, which have not yet been received, but the client has stated that they are in the process of creating a document for these requirements.
5. Database Implementation: The database has been implemented using PhpMyAdmin, and the development team is awaiting the client's requirements to complete the code.
6. Deployment Dependencies: To deploy the application, the client's requirements are required to finish coding. The client's data is confidential, and they are taking time to provide access and permissions to the development team.
7. Testing: No features have been tested as the coding is yet to be completed.
8. Website and Database Security: The website and database security will be dependent on the client's server, with limited protection from potential attacks.
9. Work Division and Implementation: Due to the change in technologies used, the work needs to be divided and assigned. The development team needs to figure out how to implement the queries using PHP, JavaScript, and HTML for the internal portal, which is approximately 60% of the work.

Risks: (Liam)

1. Data Migration: The client's existing database system is currently running on a loki server, and the migration of data from the existing system to the new one may cause data loss or corruption.
2. Technical Limitations: The team was unable to gain access to the original plan of utilizing Microsoft Dynamics and Power Apps for the client's database and internal portal, which may lead to technical limitations in the new system.
3. Client Requirements: The internal staff portal component is dependent on requirements from the client, which have not yet been received. This may lead to delays in the project or require additional work to accommodate the client's specific requirements.
4. Website and Database Security: The website and database security will rely on the client's server, with limited protection from potential attacks. This poses a risk to the confidentiality of the client's data.
5. Deployment Dependencies: The deployment of the application is dependent on the client's requirements and their willingness to provide access and permissions to the team, which may lead to delays or disruptions in the project.

User Interface: (Devashish, Amber, Liam)

Home Page:

About Us

Managed Forest Tax Incentive Program (MFTIP)

The Managed Forest Tax Incentive Program (MFTIP) is a voluntary program available to landowners who own four hectares or more of forest land, and who agree to prepare and follow a Managed Forest Plan for their property. Under the MFTIP, participating landowners have their property reassessed and classified as Managed Forest and taxed at 25 percent of the municipal tax rate set for residential properties. To participate in the MFTIP, landowners must agree to certain conditions including preparing and following a managed forest plan for their forest. The plan must be approved by an individual certified by the Ministry of Natural Resources (MNR) as a Managed Forest Plan Approver. The plan improves the owner's knowledge of the forest and increases the owner's participation in managing the forest. In turn, this helps to encourage the stewardship of Ontario's private forests.

Conservation Tax Incentive Program (CLTIP)

Ontario has a rich and varied natural heritage. Many of Ontario's most significant natural areas are privately owned. As the pressures on such areas increase, it is important to encourage private stewardship of the province's outstanding natural features. The Conservation Land Tax Incentive Program (CLTIP) is designed to recognize, encourage and support the long-term private stewardship of Ontario's provincially significant conservation lands by providing property tax relief to those landowners who agree to protect the natural heritage values of their property. The current tax relief offered is 100 % tax exemption on that eligible portion of the property.

[Public Login](#)

[Employee Login](#)

[MFPA Login](#)

[MFPA Exam Registration](#)

Public Login:

Ministry of Natural Resources and Forestry

HomePublic Login

Landowner Login

Login through either Email or password

Email

example@email.com

OR

ARN

Password

Login

[Forgot password](#)

Staff Login:

Ministry of Natural Resources and Forestry

HomePublic Login

MNRF Staff Login

Email

Password

Log In

Remember me ☐

[Forgot password](#)

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MFPA Login:

Ministry of Natural Resources and Forestry

HomeLogout

Login

Email:

Password:

Login

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Forgot Password:

Ministry of Natural Resources and Forestry

HomePublic Login

Reset Password

Your email

Enter a password

Password must contain at least 1 upper case letter
Password must contain at least 1 number
Password must contain at least 1 special character
Password must be longer than 8 characters

Confirm password

Passwords do not match

Reset Password

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Logout:

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You have been logged out

Thank you!

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Managed Force Plan Approver's Exam Registration

About Managed Force Plan Approvers

Managed Force Plan Approvers are responsible for reviewing and approving Managed Force Plans for organizations. These plans outline the strategies, policies, and procedures that organizations will use to manage their workforce and ensure operational efficiency. The role of a Managed Force Plan Approver is to ensure that the proposed plans align with industry standards, best practices, and regulatory requirements.

To become a certified Managed Force Plan Approver, candidates must pass an exam that tests their knowledge of workforce planning, human resource management, and relevant laws and regulations. Successful candidates will demonstrate a deep understanding of workforce planning principles, the ability to analyze and evaluate proposed plans, and strong communication skills to provide constructive feedback to organizations.

Upon passing the exam, candidates will receive a certification that validates their expertise in Managed Force Plan approval. This certification serves as a valuable credential for professionals seeking career advancement in the field of workforce planning and human resources management.

Register for the Exam

First Name:

Last Name:

Email:

MFPA Landing Page (MFPA Portal):

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- [Human Resource Management](#)
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- [Industry Best Practices](#)
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Search

Find property roll number:

search

15-digits roll number

Find a landowner:

Name:

search

Business/Organization Name:

search

Find a CLTIP application:

PIN:

search

5-digits pin

Search Results:

id	ARN	Current_owner	Current_eligible_area	PYP	link to annual participation information	current_MFTIP_plan	current CLTIP app	past MFTIP plans	past CLTIP apps	Term end date	Data validation should ensure that CL area (if participating) +
0	10100600171400	Josh Stanford	100	5	1	1	1	1	1	20231231	100
1	420839000811300	Patricia Anderson	200	6	2	2	2	2	2	20241231	200

Work process:

MPAC list

Requests for Reconsideration

Annual eligible area updates

Records:

Properties

CLTIP applications

Landowners

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MFTIP Plans:

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Plans

Search Results

Find a Managed Forest Plan

By Plan Number:

5-digit plan number

Search

By Property:

15-digit roll number

Search

By Landowner:

First Name

Last Name

Business/Organization

Search

pin	rollNumber	unitClass	taxClass	taxQualifier	streetNumber	streetName	city
1234567	10100600133000	CL	E	-	1827	COUNTY ROAD 12	APPLE HILL
7654321	10100600171400	CL	E	-	1009	ONADJE	SUMMERSTON
0	420839000811300	MF	T	T	25	PRINCESS	MISSISSAUGA
0	420839000811450	CL	R	T	75325	WELLAND-EUPHRATES	MARKDALE
0	420839000811500	CL	R	T	76345	EUPHRATES-WELLAND	MARKDALE

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Deployment planning: (Amber)

Deployment Plan:

Upon receipt of the necessary client requirements, the work will be divided and assigned among team members based on their skill sets, with an anticipated deployment date of the first week of March.

Client Training:

Minimal training will be required for the client as the application is designed to closely mirror their current system with added features.

Maintenance Documentation: (Liam)

Introduction:

The purpose of this maintenance documentation is to provide the necessary information to the maintenance team on how to maintain the database management system for the Ministry of National Resources and Forestry. The documentation includes details on the technologies used, the architecture of the system, and the processes involved in maintaining the system

Technologies Used:

The database management system is built using the following technologies:

- PHP
- JavaScript
- HTML/CSS
- PhpMyAdmin

Architecture:

The architecture of the system consists of a client portal for landowners and the Municipal Property Assessment Corporation and an internal portal for ministry staff. The client portal allows for form submission and information input that goes directly into the company database. The internal portal allows for staff to send queries into the database and modify the database according to their access levels.

Maintenance Processes:

The maintenance team should follow the following steps to maintain the system:

- Ensure regular backups are taken and stored securely.
- Monitor the performance of the system and resolve any issues promptly.
- Ensure that the system is updated with the latest security patches and software upgrades.
- Monitor the security of the website and database to prevent any attacks.
- Ensure that the user access levels are updated and maintained regularly.
- Provide training to the users on any updates or changes to the system.
- Provide technical support to the users in case of any issues.

Conclusion: (Devashish)

This maintenance documentation provides the necessary information to maintain the database management system for the Ministry of National Resources and Forestry. The maintenance team should follow the processes outlined in this documentation to ensure the smooth functioning of the system.