User Manual

A guide to help our users understand the features and functionalities of our application ALLTREE.

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1 Introduction

1.1 Glossary

TEA (EN)	_TEA_ (PT)	Description (EN)
Calendar	Calendário	A diary is a mechanism for organization of the week's work. Each diary entry will define a task, a team that will carry out that task and a certain time interval.
Collaborator	Colaborador	A systemUser who carries out _tasks_ such as design, maintenance or construction.
Diagrama de sequência de sistema (SSD Diagram)	Diagrama de sequência de sistema	System Sequence Diagram, is a visual representation used to depict the flow of interactions between external actors and the system under consideration.
Domain Model	Modelo de domínio	A domain model is a visual representation used to depict the essential entities, attributes, relationships, and behaviors within a specific problem domain.
Equipment	Equipamento	The equipment includes sprayers, lifting platforms, chainsaws, brush cutters, blowers, ladders, cisterns and the various elements that can be attached to tractors, such as disc harrows, weeders, aerators and scarifiers.
Garden	Jardim	A garden is a small green space, it can have trees, it may have a basic _irrigation system._
Green spaces	Espaços verdes	A green space is a vegetated area, those can be forests, trees, big parks, allotments, small parks.
GSM	Gestor dos Espaços Verdes	Green Spaces Manager, person responsible for managing green spaces.
GSU	Utilizador dos Espaços Verdes	Person who uses the green spaces managed by the organization, they can make comments and report faults through the portal.
HRM	Gestor de Recursos Humanos	Human Resources Manager, a person who plans, coordinates, and directs the administrative functions of an organization.
Irrigation system	Sistema de rega	The irrigation system is the system implemented for watering the different _green spaces._
Job	Emprego	A job is a collaborator's main occupation and each collaborator must have one job.

TEA (EN)	_TEA_ (PT)	Description (EN)
Large-sized park	Parque de grandes dimensões	A Large-sized park is a _green space_ with multiple functions with diverse garden spaces, and woods including varied equipment and services.
Machine	Máquina	The machines include tractors, backhoe loaders and rotating machines, lawn mowers, among others.
Medium-Sized park	Parque de tamanho médio	A medium-sized park is a _green space_ with a few hundred or thousands of square meters with a wooded garden area, some infrastructures, drinking fountains, irrigation systems and lighting.
MS	MusgoSublime	Company in charge of managing the different _green spaces._
Skills	Capacidades	A Skill is an attribute given to a _collaborator_, when registered, a collaborator is given one or more skills that will define in which groups of work he will be working.
Software Application	Aplicação de _Software_	Is a computer program designed to help people perform an activity.
SSD Diagram	Diagrama de sequência de sistema	System Sequence Diagram, is a visual representation used to depict the flow of interactions between external actors and the system under consideration.
System User	Utilizadores do sistema	Individuals who interact with the system, including HRM, FM, Collaborators, GSM, GSU.
Task	Tarefa	Tasks are carried out on an occasional or regular basis in one or more green spaces, for example: tree pruning; installation of an irrigation system; installation of a lighting system.
Team	Equipa	Teams are temporary associations of employees who will carry out a set of tasks in one or more green spaces.
Team Proposal	Proposta de equipa	A proposal generated automatically by the system for the formation of teams, typically created by the Human Resources Manager (HRM) based on the skills and availability of collaborators to carry out specific tasks in green spaces.
User Portal	Portal do Utilizador	The user portal is used by the _GSU_ to report faults and leave comments.
US	História de utilizador	User story, a tool in Agile software development used to capture a description of a software feature from a user's perspective.
VFM	Gestor da Frota	Vehicle and Equipment Fleet Manager, a person that manages the fleet park, the machines, equipment, and vehicles, ensuring their good condition and assigning them to the tasks to be carried out.
Vehicle	Veículo	Vehicles are needed to carry out the tasks assigned to the teams as well as to transport machines and equipment. This type of vehicle can be only for passengers or mixed, light or heavy, open box or closed vans or trucks.

1.2 Purpose and Scope of the application

In an increasingly urbanized world, access to green spaces plays a vital role in enhancing the quality of life for residents.

Recognizing the significance of green spaces in urban contexts, MusgoSublime (MS) is working to effectively manage these spaces. However, they encounter some obstacles when it comes to efficiently organizing, building, and sustaining urban green spaces.

Therefore, MS has adopted this Software that serves as a comprehensive solution to the innumerable challenges encountered by this organization and others involved in similar endeavours.

This manual is designed to provide you with all the necessary information to effectively utilize our application ALLTREE to manage green spaces for collective use in urban environments.

Whether you are a Human Resources Manager (HRM), a Vehicle and Equipment Fleet Manager (VFM), a Collaborator, a Green Spaces Manager (GSM) or a Green Spaces User (GSU), this manual will guide you through the features and functionalities of the system.

2 System Overview

2.1 Overall description

Through innovative approaches and meticulous administration, this application delivers a comprehensive software solution for planning, constructing, and maintaining green spaces.

In order to do it, the system integrates various functionalities and tools tailored to the specific needs of the organizations, which are:

- **Collaborator Management:** Human Resources Managers can efficiently manage the workforce by registering new collaborators, assigning jobs, and managing skills. This functionality enables effective allocation of resources based on expertise and availability.
- **Team Proposal Generation:** Human Resources Managers can generate team proposals automatically based on predefined criteria such as maximum team size and required skills. This feature streamlines the process of forming teams for specific tasks and projects.
- **Vehicle and Equipment Management:** Fleet Managers can oversee the organization's fleet of vehicles, machinery, and equipment. This includes registering vehicles, tracking maintenance schedules, and ensuring optimal utilization of resources.
- **Agenda Management:** The system provides a centralized platform for scheduling tasks and activities within green spaces. GSM can plan and coordinate various maintenance activities, ensuring timely execution and efficient resource allocation.
- **Green Spaces Management:**The system provides comprehensive tools for scheduling and managing tasks within green spaces. Tasks related to landscaping, maintenance, and construction are added to the agenda, and teams are assigned to these tasks based on their skills and availability. This ensures that all activities are well-coordinated, resources are used efficiently, and projects are completed on time. Teams can view their assigned tasks, track progress, and update statuses, facilitating seamless collaboration and communication.

2.2 Structure of the application

The following diagrams illustrate an abstract structure of the application and makes clear the relation between each role and the feature.

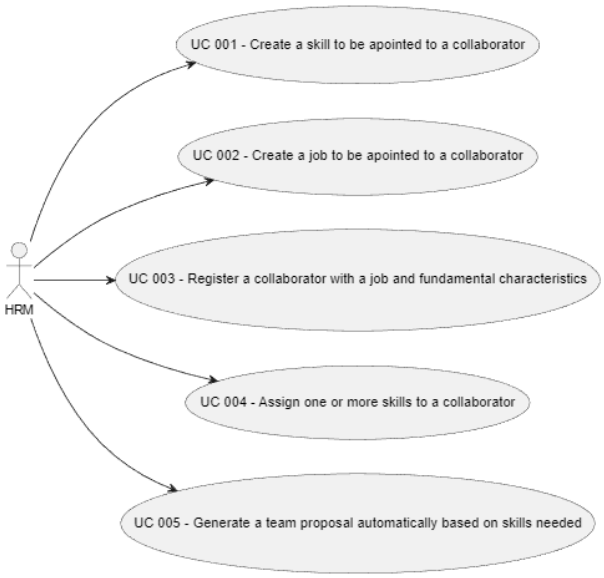


Figure 1: HRM activity

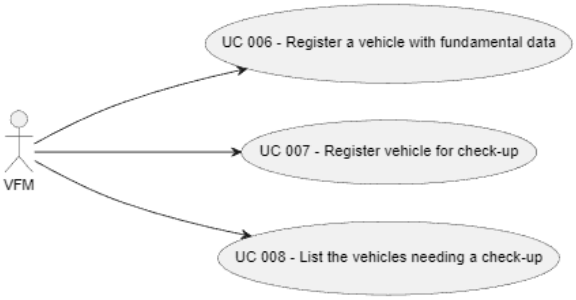


Figure 2: VFM activity

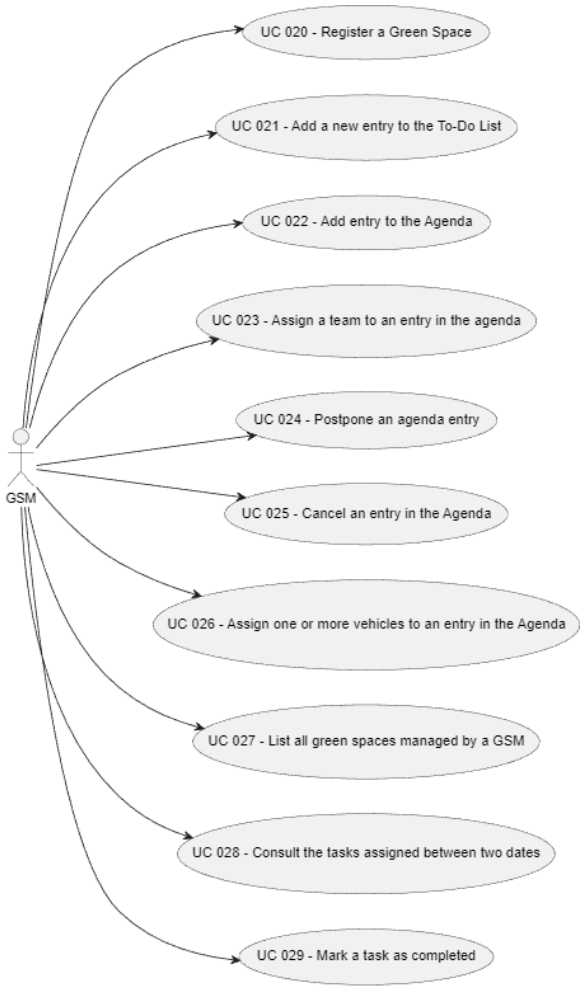


Figure 3: GSM activity

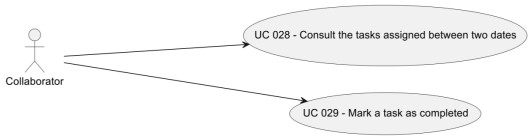


Figure 4: Collaborator activity

2.3 System Requirements

2.3.1 Compatible Operating Systems

- Windows 10 or later
- macOS 10.12 or later
- Linux distributions (Ubuntu 18.04 LTS, CentOS 7, etc.)

2.3.2 Software Dependencies

- Java Development Kit (JDK) 11 or later

2.3.3 Disk Space

- Minimum 500 MB for application installation
- Additional space required for data storage (depends on usage)

2.3.4 RAM

- Minimum 2 GB RAM
- Recommended 4 GB or higher for better performance

2.3.5 Processor Speed

- Intel Core i3 processor or equivalent
- Faster processors recommended for large-scale data processing

3 Installation Procedures

3.1 Console

1. Download the application package (.jar files) from the provided source. Go to "View - Tool Windows - Maven and then Lifecycle - package

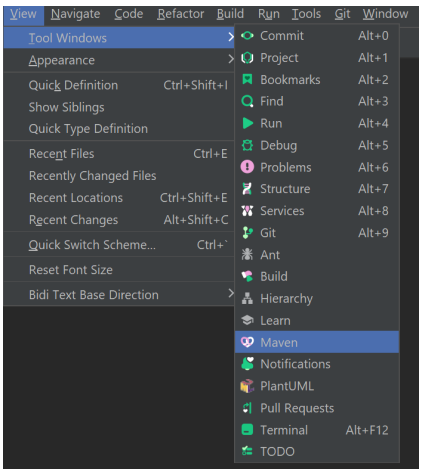


Figure 5: View and Tool Windows

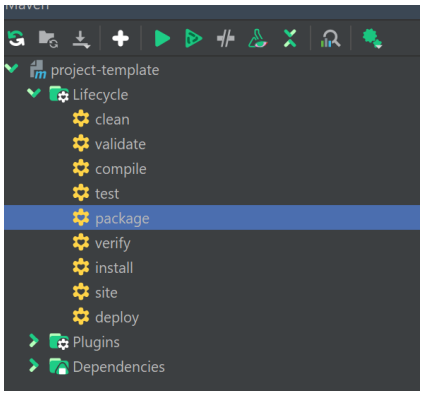


Figure 6: Lifecycle and Package

2. Install Java Development Kit (JDK) if not already installed.

3. Find the .jar file

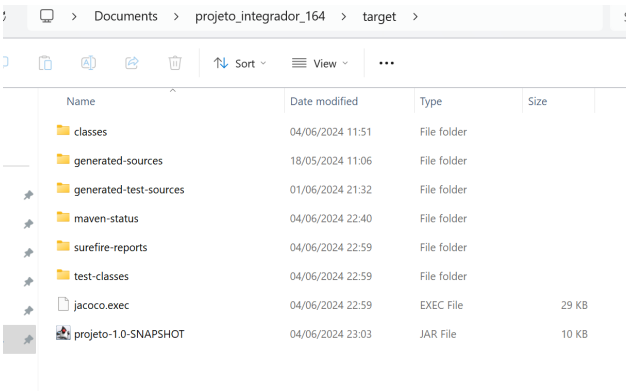


Figure 7: snapshot in target folder

4. Run the application using the command `java -jar <filename>.jar` in the terminal or command prompt.

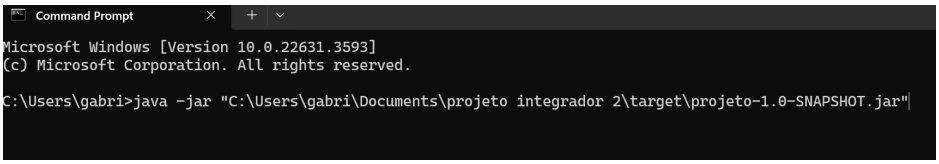


Figure 8: command prompt

3.2 JavaFX

1. Ensure you have Java Development Kit (JDK) installed on your system. You can download it from the official Oracle website or use a package manager if you're on a Linux distribution.

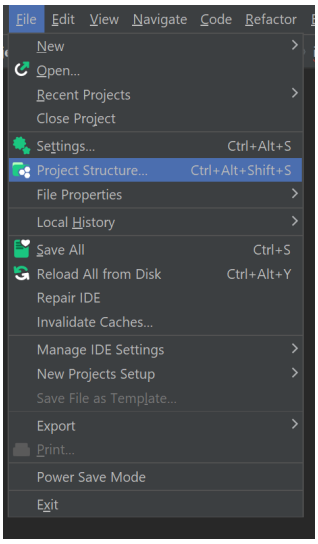


Figure 9: Project Structure

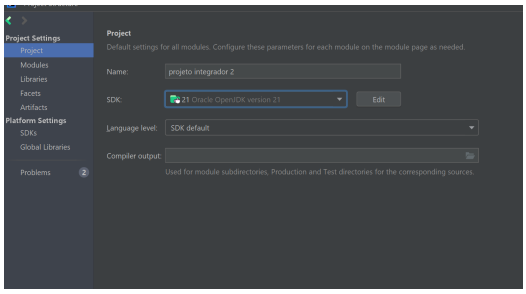


Figure 10: Project and SKD

2. Search for “system environment variables” and create a new one.

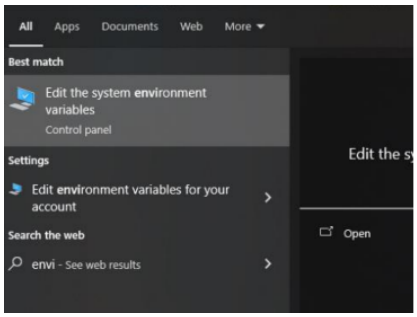


Figure 11: ”system environment variables

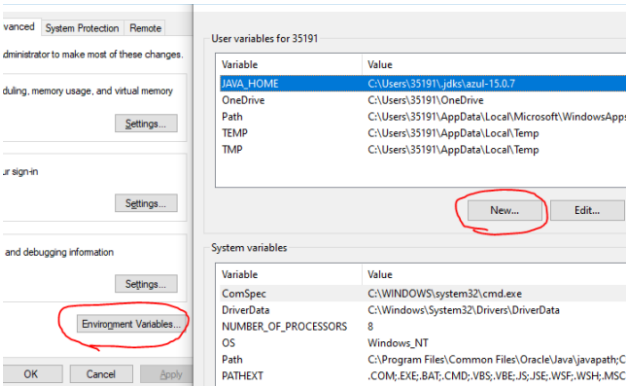


Figure 12: creation of a new environment variable

3. Create a new variable called “JAVA HOME” with the path to your previously installed JDK.

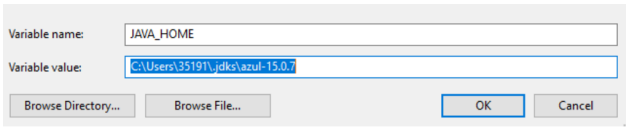


Figure 13: name of variable

4. Edit the variables on “Path” and add the path to the JDK plus “bin”

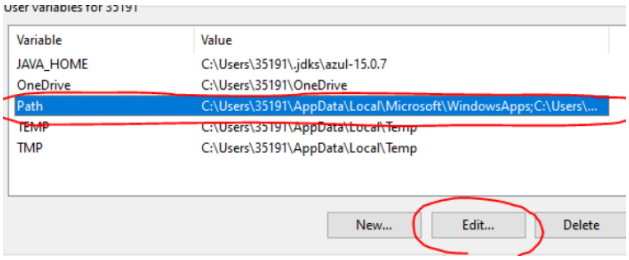


Figure 14: editvariable

5. In IntelliJ, Run the maven option “mvn javafx:run”

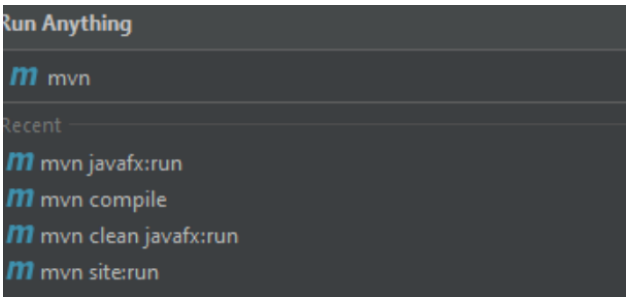


Figure 15: run maven

4 System Features - Console

4.1 Login UI

1. Select "Do Login" by the corresponding number ("1"). This allows you to authenticate yourself in order to have access to your menu.

Figure 16: Main Menu

2. Enter your credentials. Depending on your role, you will be directed to either the HRM or VFM menu

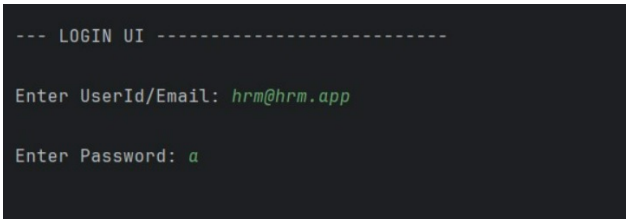


Figure 17: Login HRM

Figure 18: Login VFM

3. HRM Menu - This display all the available permissions you have as a Human Resource Manager

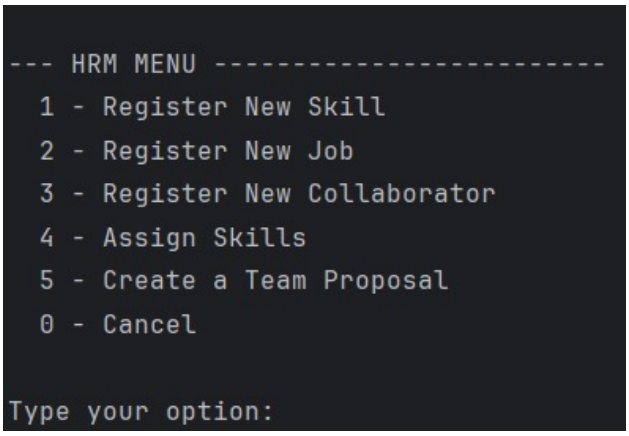


Figure 19: HRM Menu

4. VFM Menu - This display all the available permissions you have as a Vehicle Fleet Manager

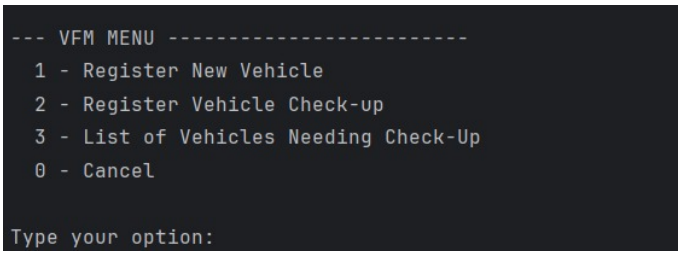


Figure 20: VFM Menu

4.2 Development Team

1. To familiarize yourself with the development team, enter the appropriate number ("2"). This will show you the names of 4Real team members.

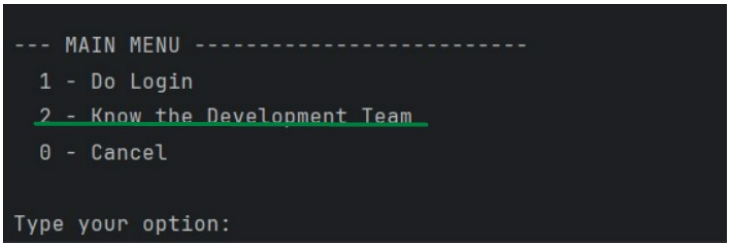


Figure 21: Develop Team Section

4.3 HRM MENU

4.3.1 Register a new skill(single skill input)

Step 1: To register a new skill, select option number (”1”)

Step 2: Now select option number (”1”) again

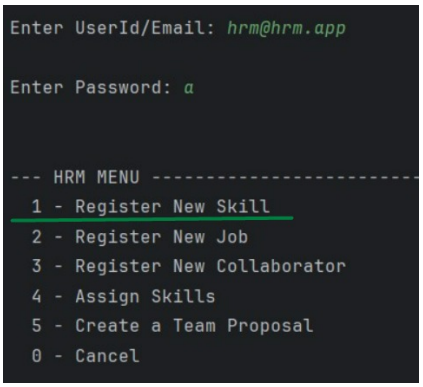


Figure 22: Step 1

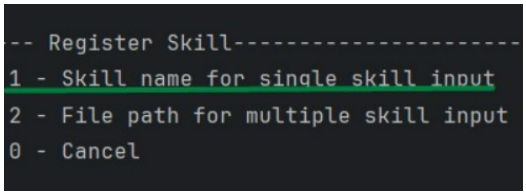


Figure 23: Step 2

Step 3: Write the skill that you want to register

Figure 24: Step 3

Step 4: If you have followed the previous steps, it will appear a success message and you will be redirected to the HRM menu again

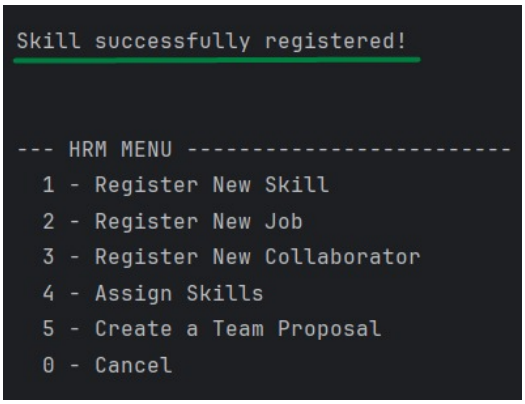


Figure 25: Step 4

4.3.2 Register a new skill (multiple skill input from file))

Step 1: To register a new skill, select option number ("1") in the HRM menu

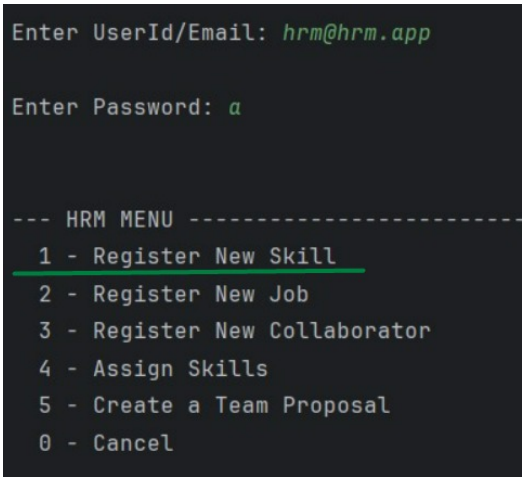


Figure 26: Step 1

Step 2 Now select option number ("2")

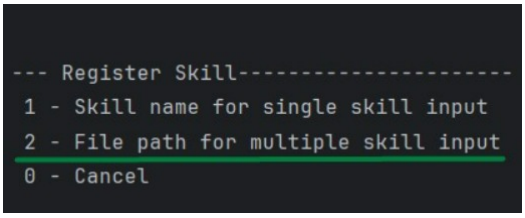


Figure 27: Step 2

Step 3: In a text file, write the skills that you want to register

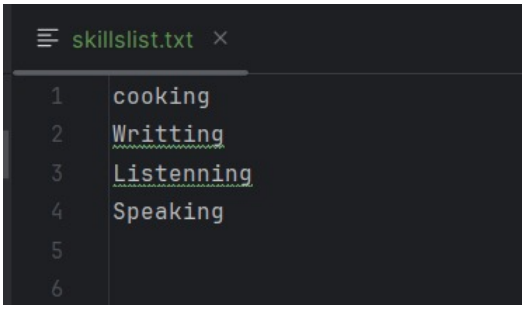


Figure 28: Step 3

Step 4: Now copy the path

Figure 29: Step 4

Step 5: If you have followed the previous steps, it will appear a success message and you will be redirected to the HRM menu again

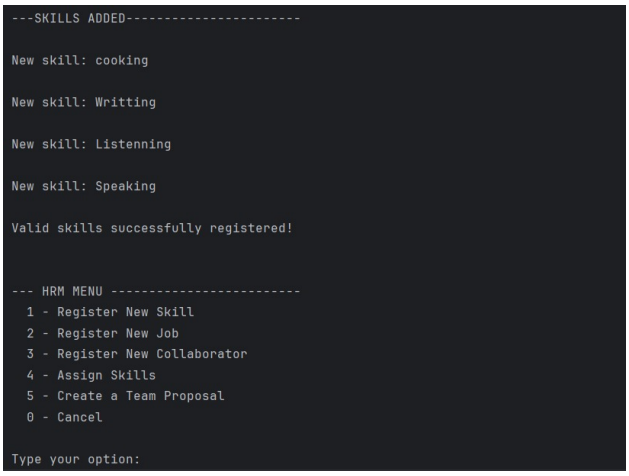


Figure 30: Step 5

4.3.3 Register a new job

Step 1: To register a new job, select option number ("2")

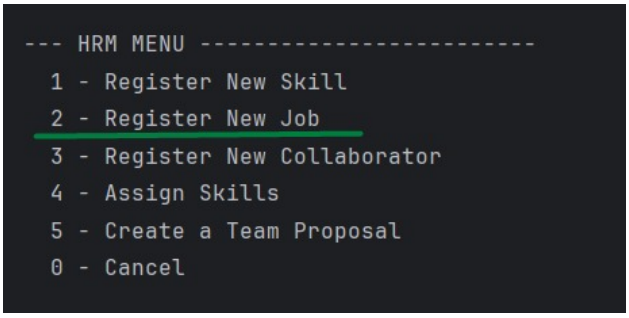


Figure 31: Step 1

Step 2: Then write the job name

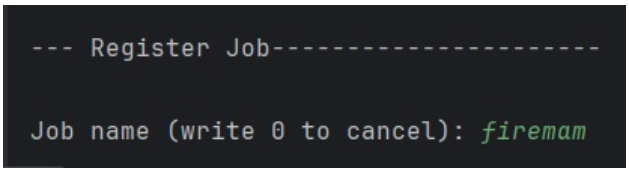


Figure 32: Step 2

Step 3: If you have followed the previous steps, a success message will appear and you will be redirected to the HRM menu again

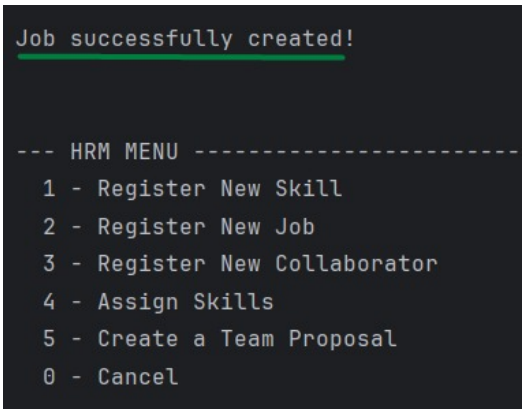


Figure 33: Step 3

4.3.4 Register New Collaborator

Step 1: To register a new collaborator select option number ("3")

Step 2: Then choose one job

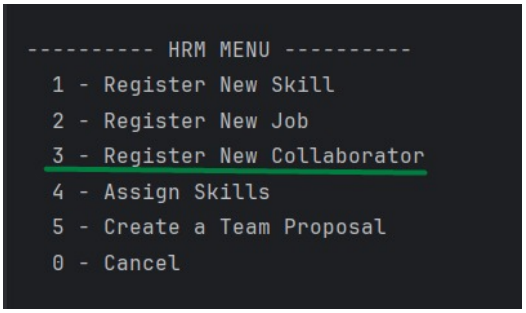


Figure 34: Step 1

Figure 35: Step 2

Step 3: Now choose the document type that you want to fill out

Step 4: Fill out all the criteria

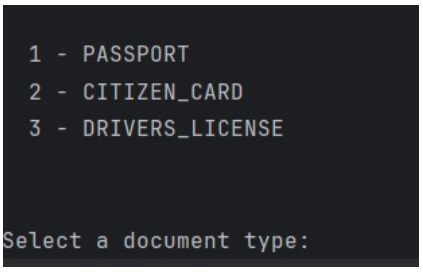


Figure 36: Step 3

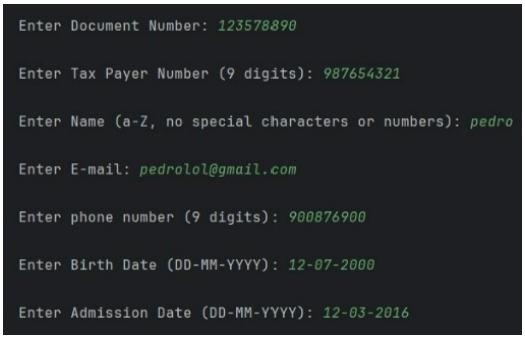


Figure 37: Step 4

Step 5: If you have followed the previous steps, a success message will appear and you will be redirected to the HRM menu again

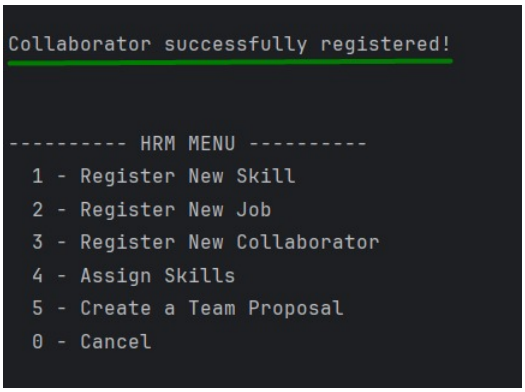


Figure 38: Step 5

4.3.5 Assign Skills

Step 1: To assign skills to a collaborator select option number ("4")

Step 2 Start by choosing the collaborator that you want to assign skills

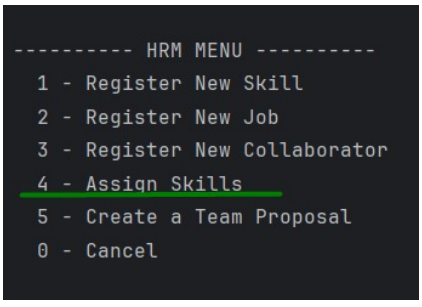


Figure 39: Step 1

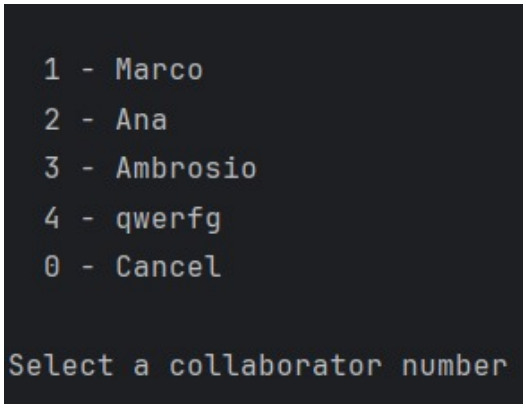


Figure 40: Step 2

Step 3: Choose the skills to assign to the collaborator. Enter the desired skill number. To stop adding skills, enter 0.

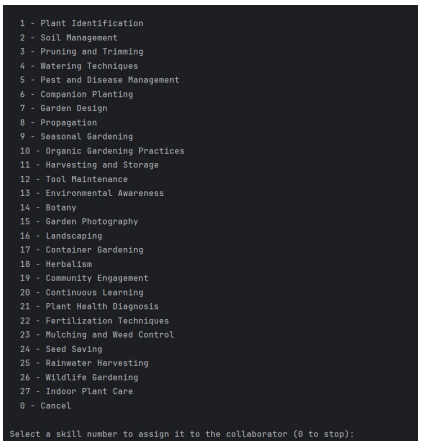


Figure 41: Step 3

Step 4: If you have followed the previous steps, it will appear a success message and you will be redirected to the HRM menu again

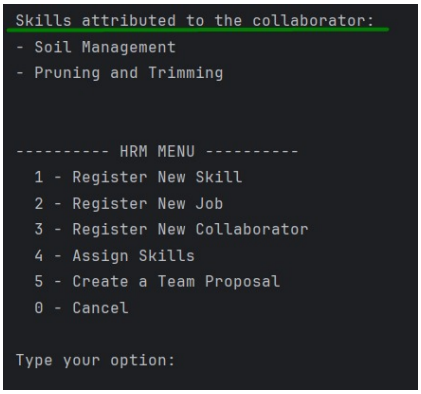


Figure 42: Step 4

4.3.6 Create a Team Proposal

Step 1 To create a team proposal select option number ("5")

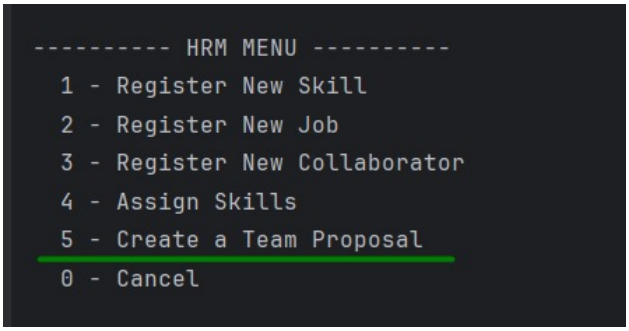


Figure 43: Step 1

Step 2 Start by typing the maximum and the minimum number of collaborators

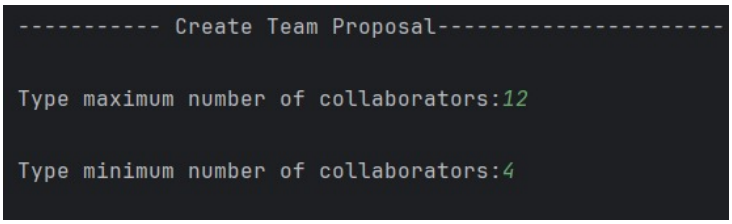


Figure 44: Step 2

Step 3 Enter the index of the skill you want to add (or type 'done' to finish): type 'exit' to cancel.

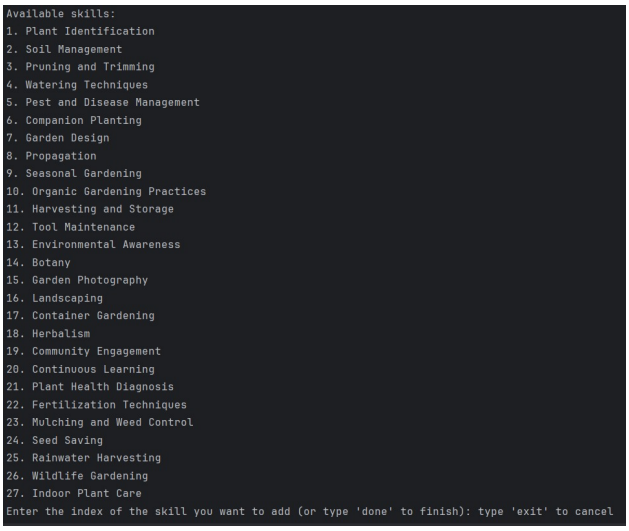


Figure 45: Step 3

Step 4 If you have followed the previous steps, a success message will appear and you will be redirected to the HRM menu again

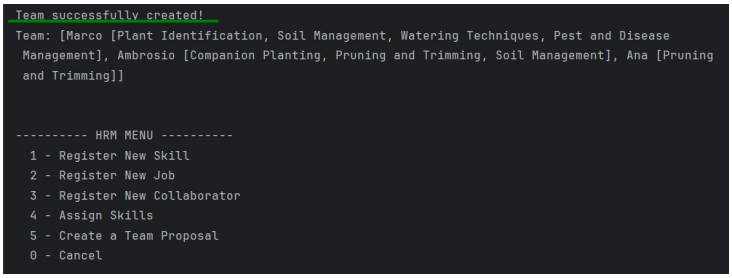


Figure 46: Step 4

4.4 VFM MENU

4.4.1 Register Vehicle

Step 1: To register a new vehicle, select option number ("1")

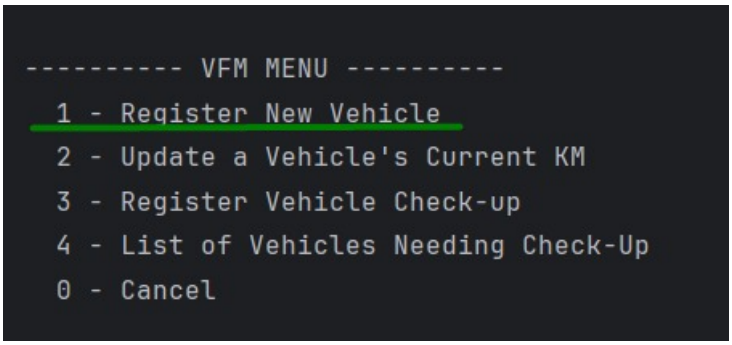


Figure 47: Step 3

Step 2: Now select the vehicle type

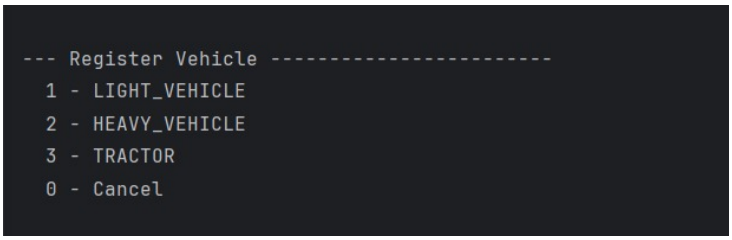


Figure 48: Step 4

Step 3: Now fill out all the criteria

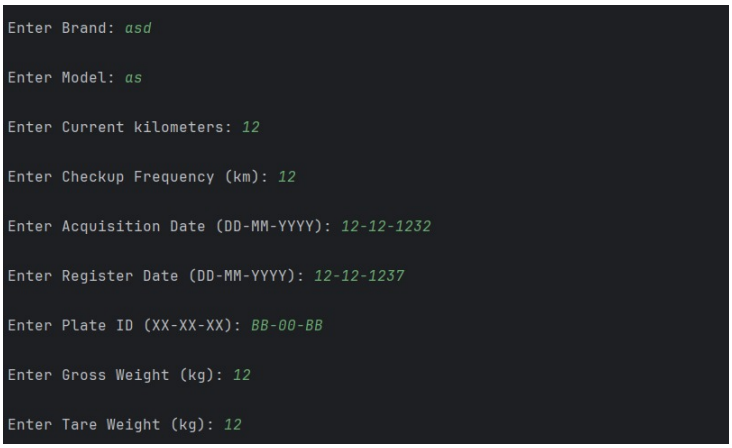


Figure 49: Step 3

Step 4: If you have followed the previous steps, a success message will appear and you will be redirected to the VFM menu again

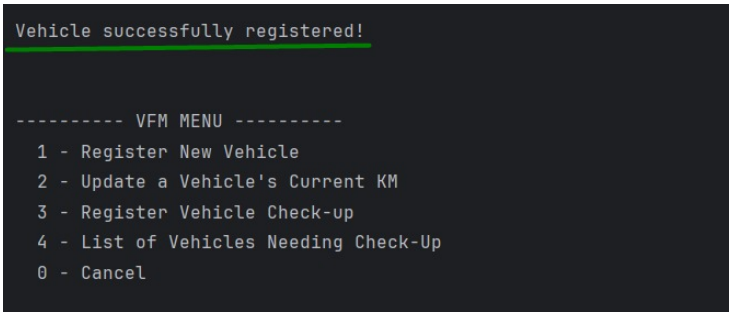


Figure 50: Step 4

4.4.2 Update a Vehicle's Current KM

Step 1: To update a vehicle's current KM, select option number ("2")

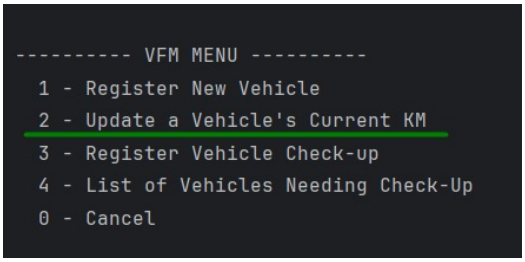


Figure 51: Step 1

Step 2: Now select the vehicle that you want to update

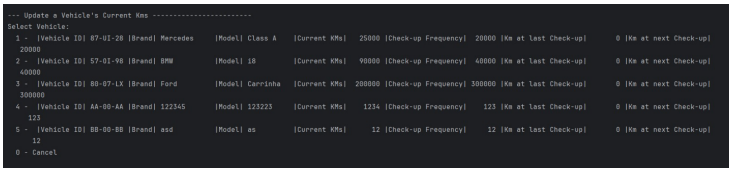


Figure 52: Step 2

Step 3: Now enter the new value and a success message will appear and then you will be redirected to the VFM menu again

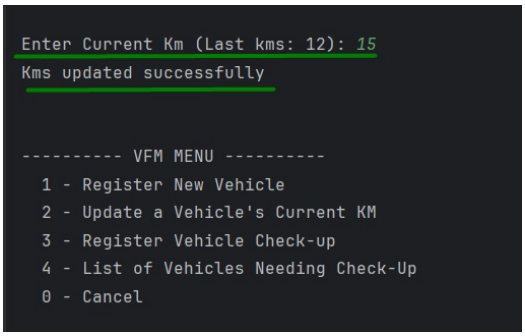


Figure 53: Step 3

4.4.3 Register Vehicle Check-up

Step 1: To register vehicle check-up, select option number ("3")

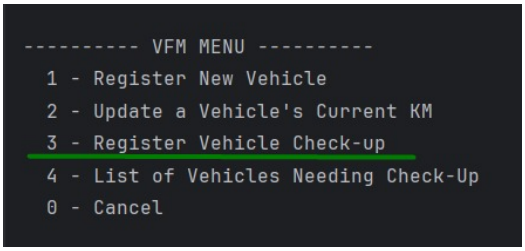


Figure 54: Step 1

Step 2: Now select the vehicle that you want to update

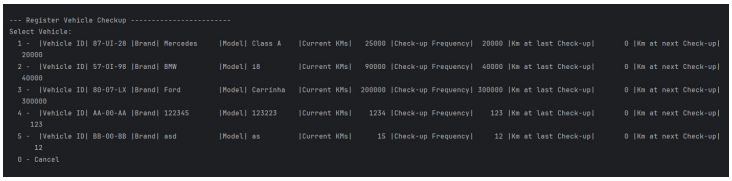


Figure 55: Step 2

Step 3: Now fill out the new criteria and a success message will appear, then you will be redirected to the VFM menu again

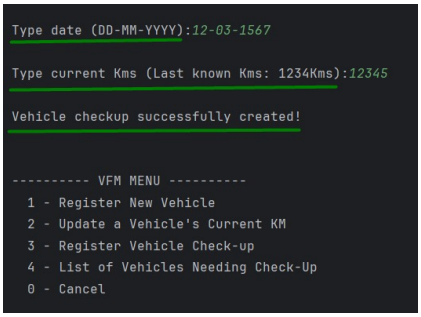


Figure 56: Step 3

4.4.4 List of Vehicles Needing Check-Up

Step 1: To see the list of vehicle needing check-up, select option number ("4"). Then you will be redirected to the VFM menu again

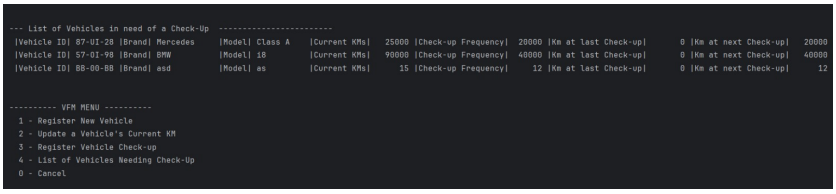


Figure 57: Step 1

5 System Features - GUI

5.1 HRM MENU

5.1.1 Register a new skill

Step 1: In the menu of login, enter your credentials in order to have access of your menu

Step 2: Click on the button of "Skills"

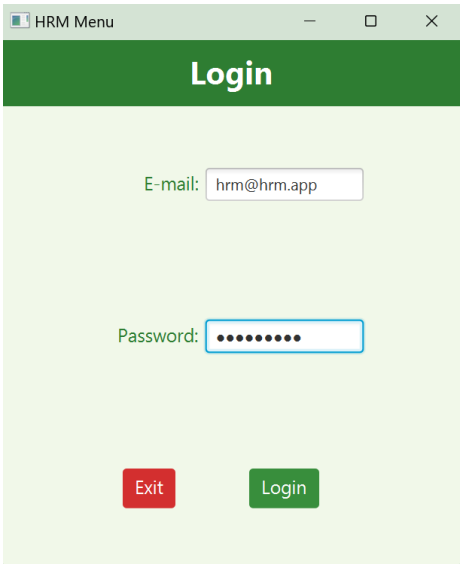


Figure 58: Step 1

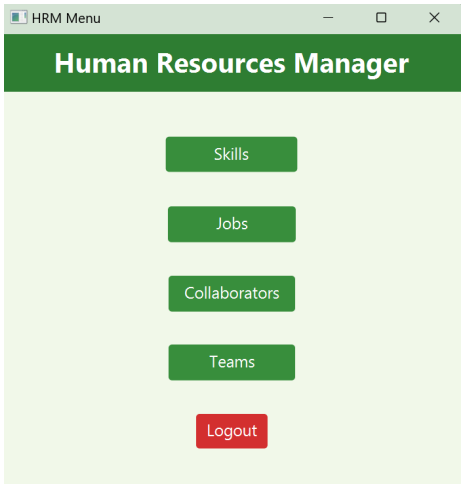


Figure 59: Step 2

Step 3: It will appear the list of skills already registered. To add a new skill click on the button "Register Skills"

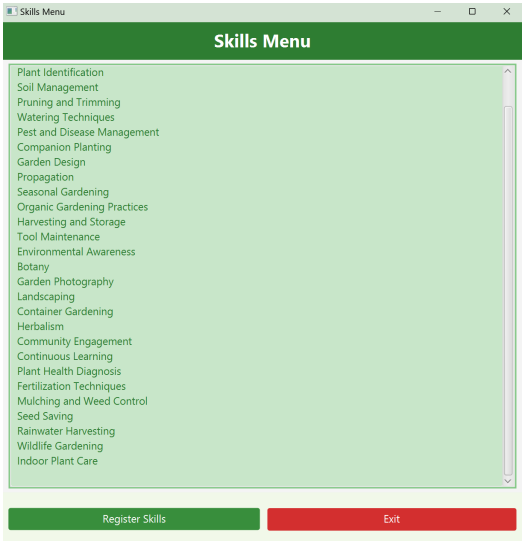


Figure 60: Step 3

Step 4: Enter the name of the skill (no special characters)

Step 5: You will receive a message of the successfull registered skill if you follow the steps above

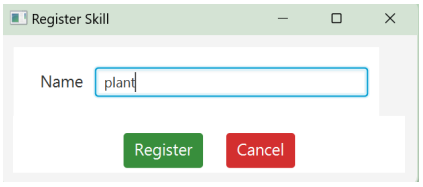


Figure 61: Step 4

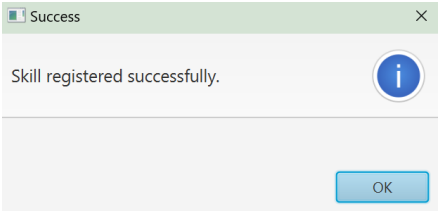


Figure 62: Step 5

5.1.2 Register a job

Step 1: In the menu of login, enter your credentials in order to have access of your menu
Step 2: Click on the button of "jobs"

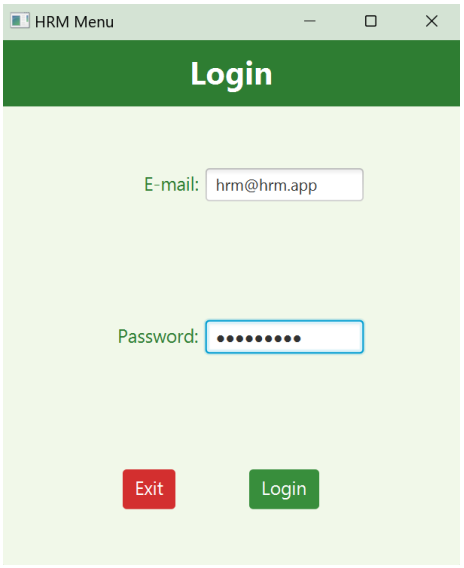


Figure 63: Step 1

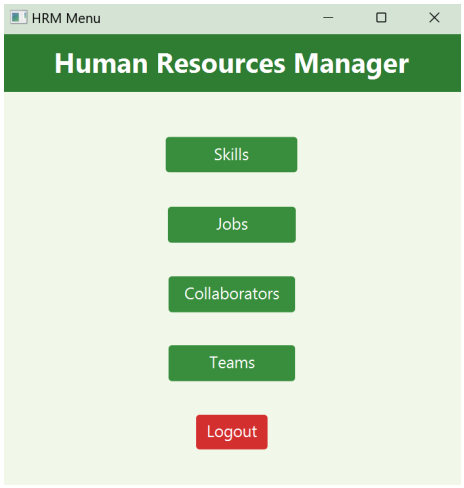


Figure 64: Step 2

Step 3: It will appear the list of jobs already registered. To add a new job click on the button "Register job"

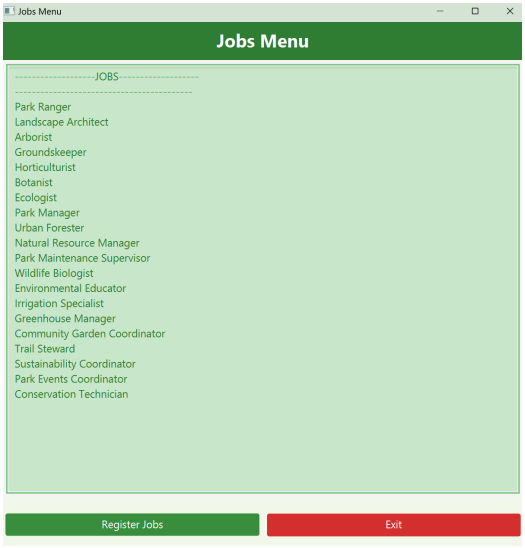


Figure 65: Step 3

Step 4: Enter the name of the job (no special characters)

Step 5: You will receive a message of the successfull registered job if you follow the steps above

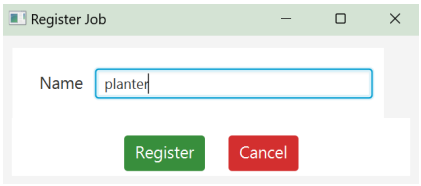


Figure 66: Step 4

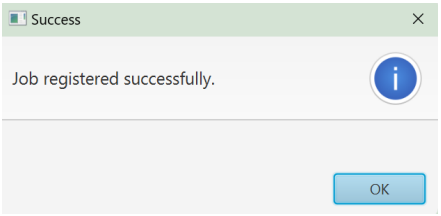


Figure 67: Step 5

5.1.3 Register a Collaborator

Step 1: In the menu of login, enter your credentials in order to have access of your menu

Step 2: Click on the button of "Collaborators"

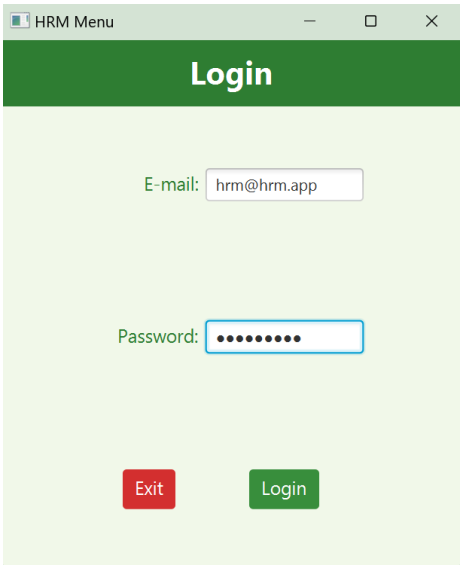


Figure 68: Step 1

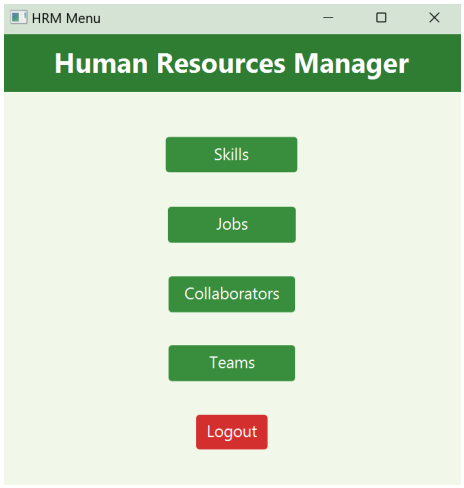


Figure 69: Step 2

Step 3: It will appear the list of collaborators already registered. To add a new collaborator click on the button "Register Collaborators"

Step 4: Complete the information needed

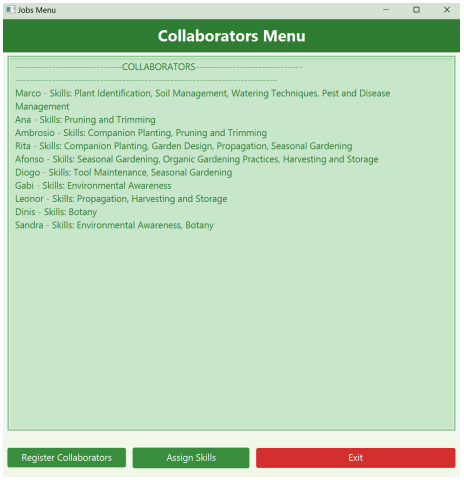


Figure 70: Step 3

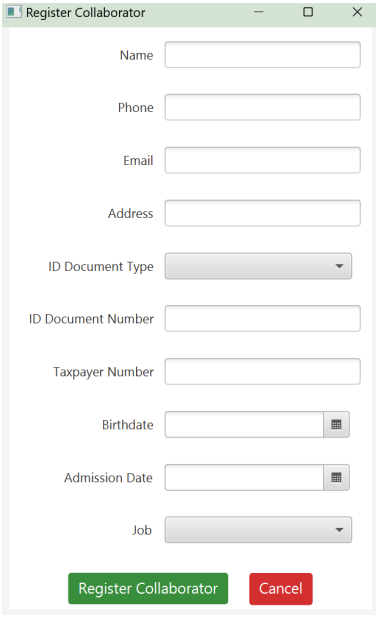


Figure 71: Step 4

5.1.4 Assign Skills

Step 1: In the menu of login, enter your credentials in order to have access of your menu

Step 2: Click on the button of "Collaborators"

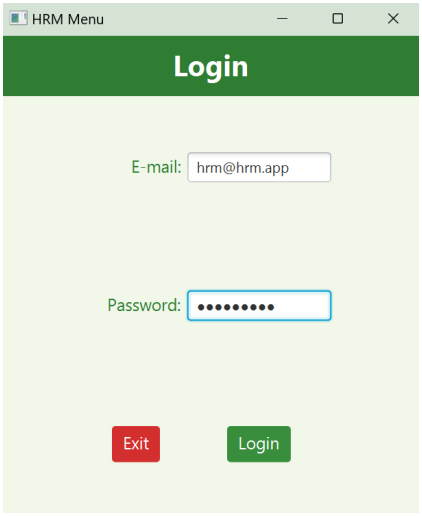


Figure 72: Step 1

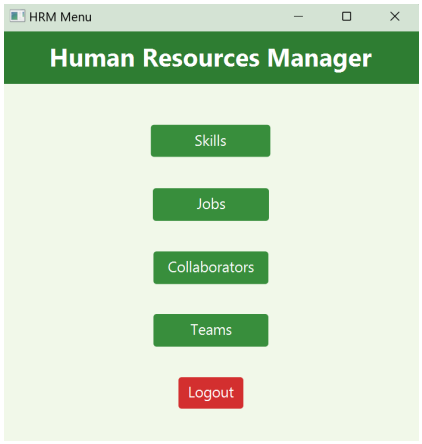


Figure 73: Step 2

Step 4: Choose a collaborator and the desired skills and click "Assign Skills"

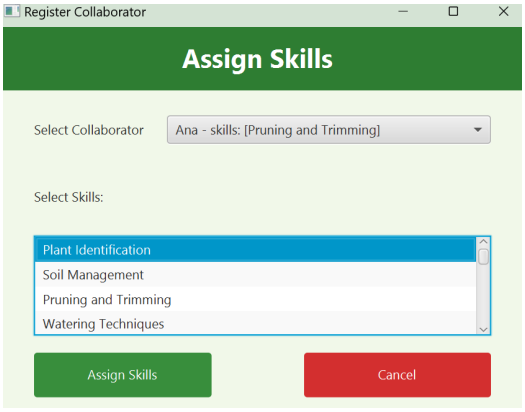


Figure 74: Step 3

5.1.5 Create Team Proposal

Step 1: In the menu of login, enter your credentials in order to have access of your menu

Step 2: Click on the button of "Teams".

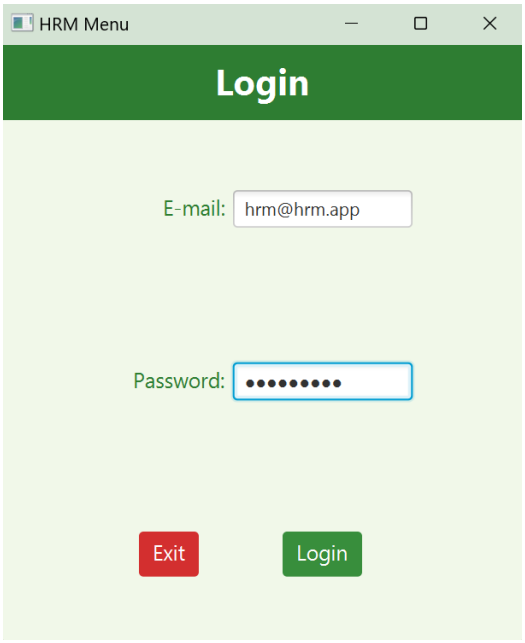


Figure 75: Step 1

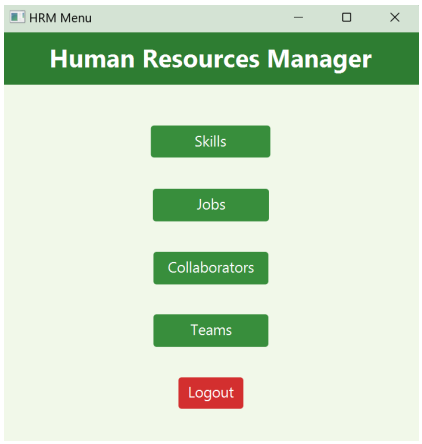


Figure 76: Step 2

Step 4: Insert the maxiumum and mimimum size fo the team and the skills you want

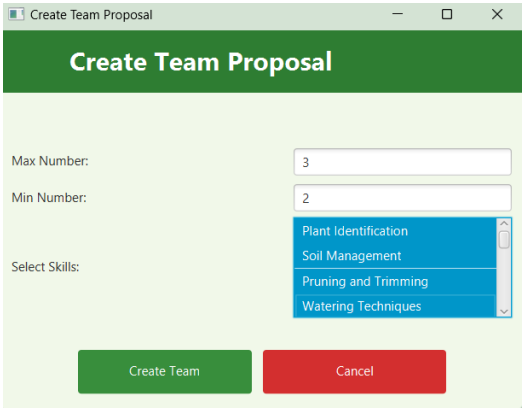


Figure 77: Step 4

Step 5: After that, you will receive a proposal where you can accept it or refuse it.

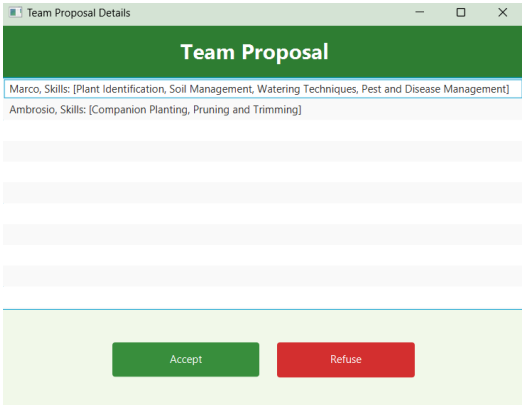


Figure 78: Step 3

Step 6: If you do everything above, you will receive a success message

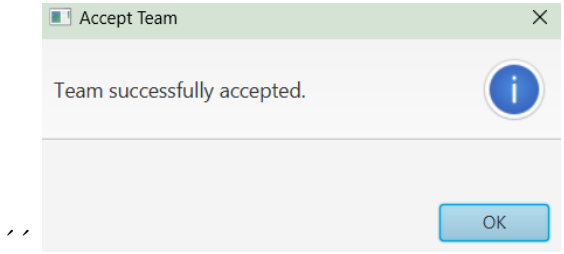


Figure 79: Step 3

5.2 VFM MENU

5.2.1 Register Vehicle

Step 1: In the menu of login, enter your credentials in order to have access of your menu

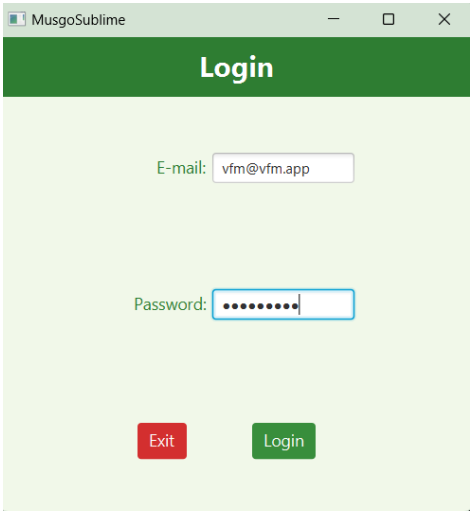


Figure 80: Step 1

Step 2: It will show a list of registered vehicles. To register a vehicle click the button "Regtser Vehicle".

Step 3: It will show a list of registered vehicles. To register a vehicle click the button "Register Vehicle".

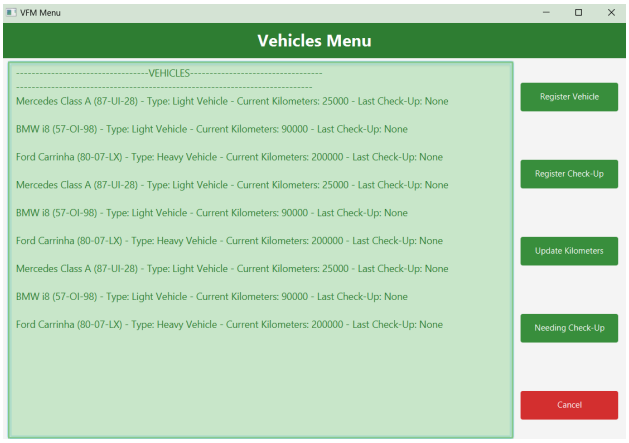


Figure 81: Step 2

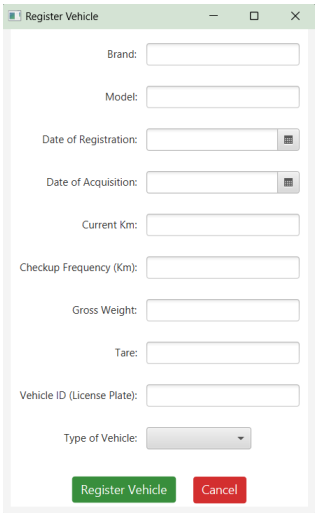


Figure 82: Step 3

5.2.2 Register Vehicle Check-up

Step 1: In the menu of login, enter your credentials in order to have access of your menu

Step 2: It will show a list of registered vehicles. To register a vehicle click the

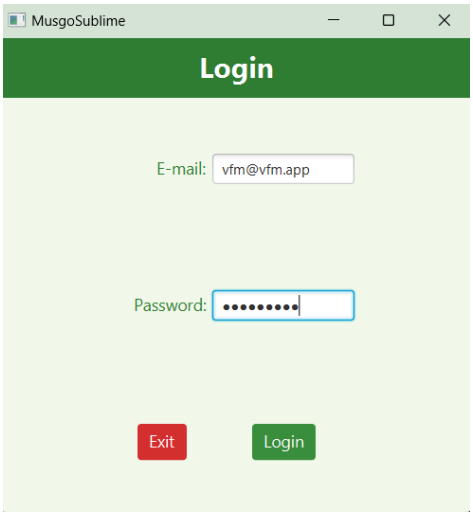


Figure 83: Step 1

button "Register Vehicle Check up".

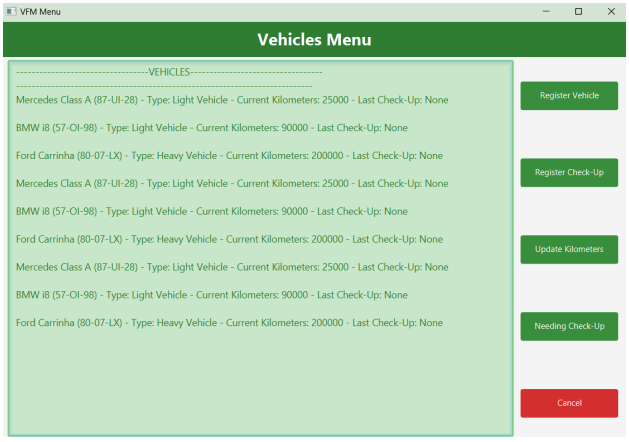


Figure 84: Step 2

Step 3: insert the needed info

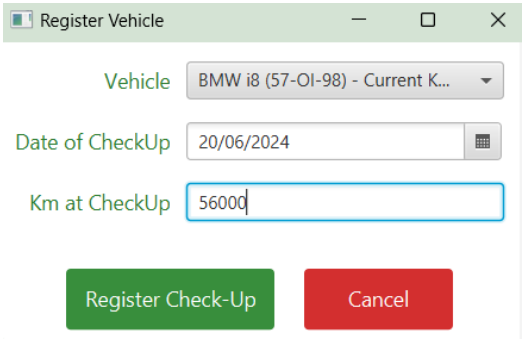


Figure 85: Step 3

5.2.3 Update KMS of vehicle

Step 1: Click the button "Update kms".

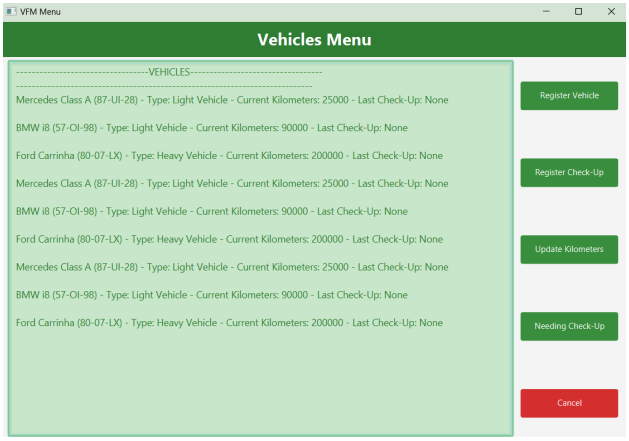


Figure 86: Step 1

Step 2: Choose the vehicle and insert the kms and click "Update"

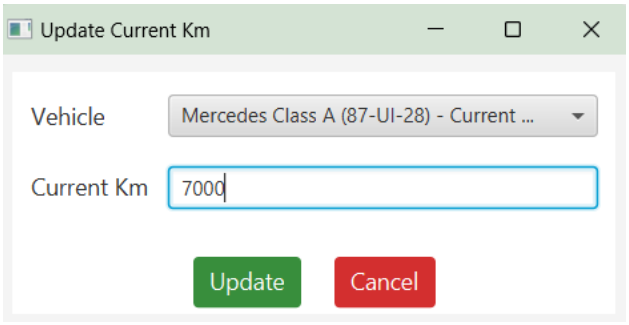


Figure 87: Step 2

5.2.4 List vehicles needing check-up

Step 1: Click the button "Needing check-up".

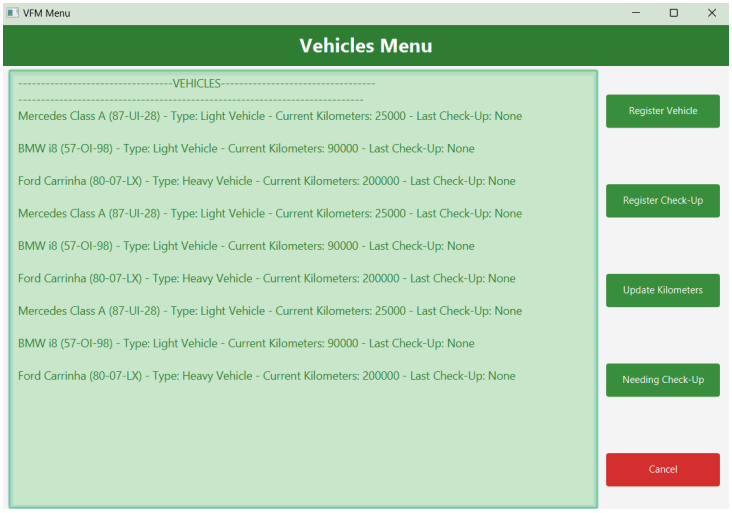


Figure 88: Step 1

5.3 GSM Menu

5.3.1 Register Green Space

Step 1: In the menu of login, enter your credentials in order to have access of your menu

Step 2: Click on the button "Green Spaces"

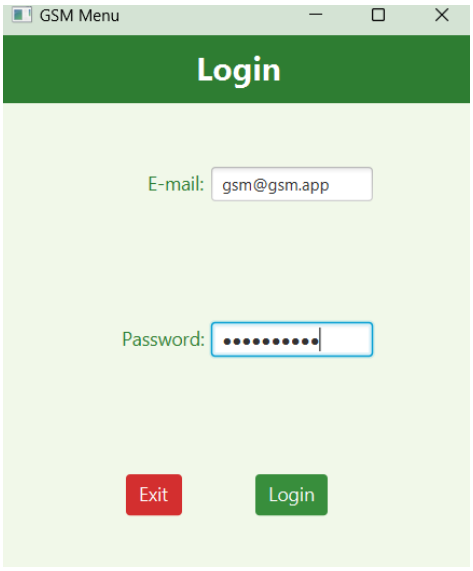


Figure 89: Step 1

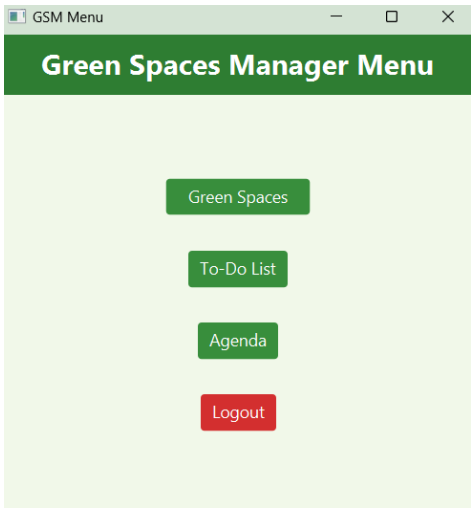


Figure 90: Step 2

Step 3: It will appear a list of green spaces already registered. To register a new one, click on the button "Add Green Space"

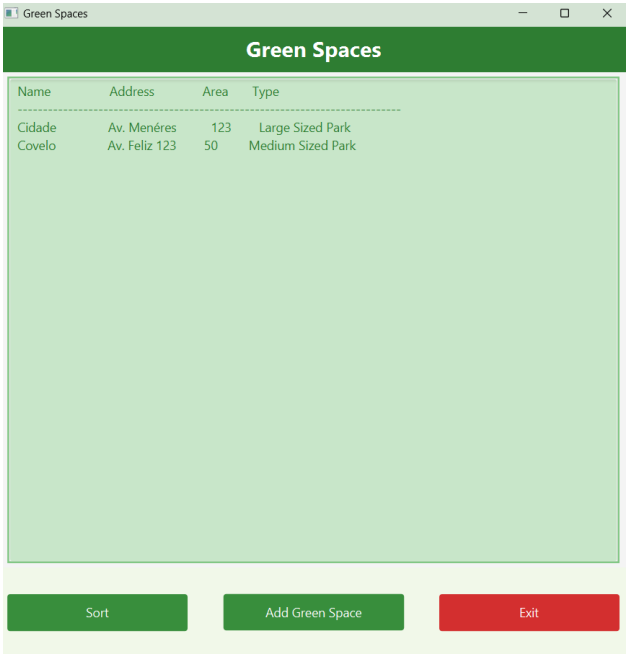


Figure 91: Step 3

Step 4: Complete the needed information about your desired green space and click on the button "Add green space"

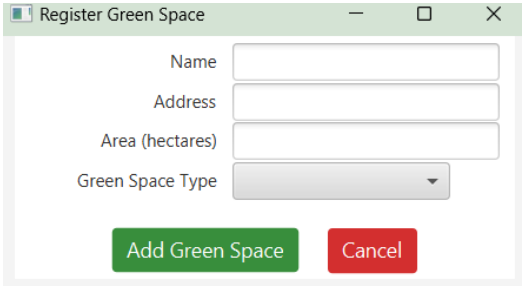


Figure 92: Step 4

5.3.2 Sort Green Spaces

Step 1: Already logged in and in the green space menu, click on the button sort. After that the green spaces will be sorted in a descending order based on their size.

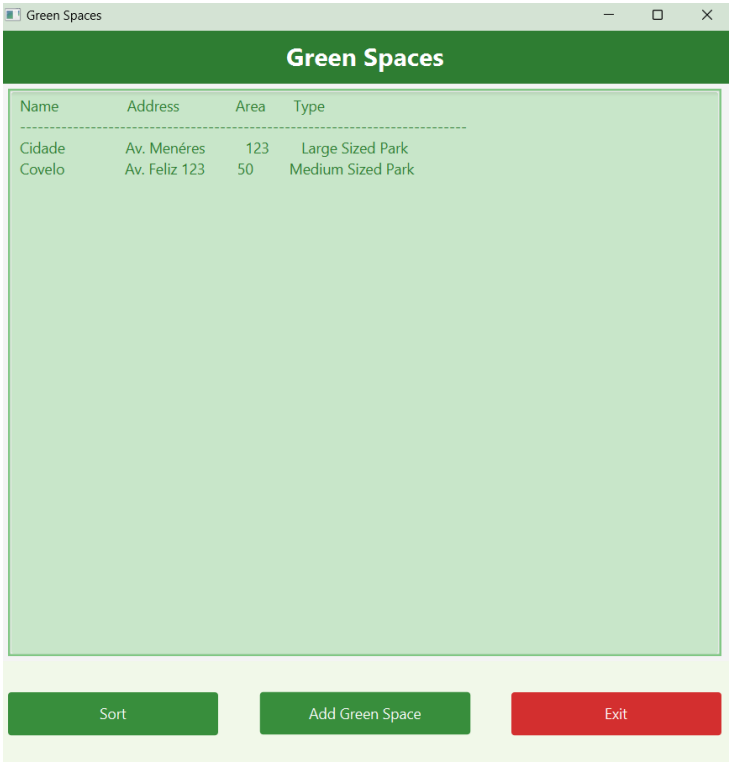


Figure 93: Step 4

5.3.3 Register To do Entry

Step 1: Already logged in, click on the button "To do List"

Step 2: Click on the button "Add Entry"

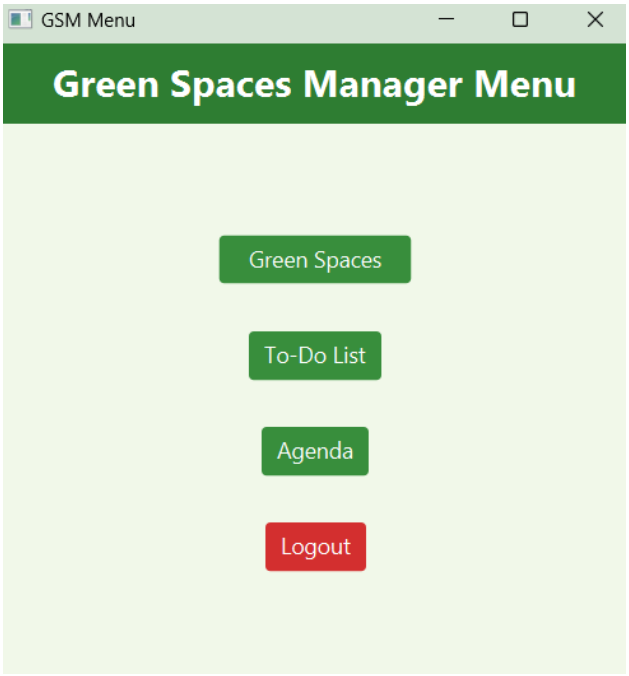


Figure 94: Step 1

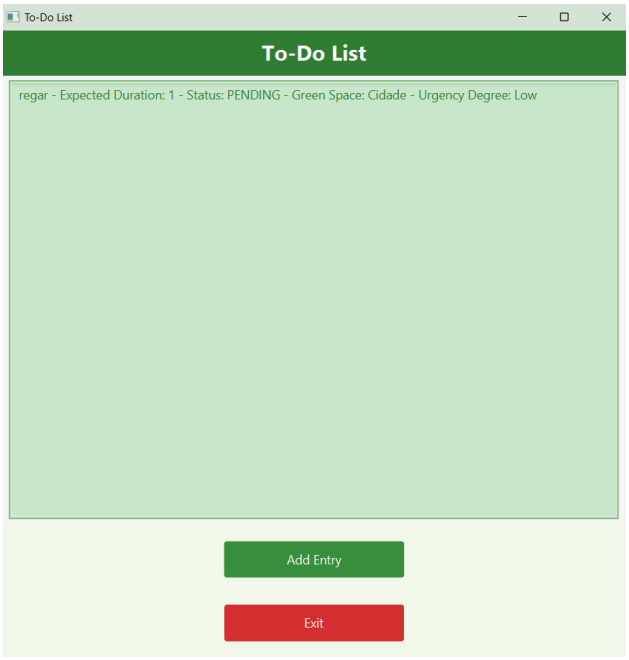


Figure 95: Step 2

Step 3: Complete the needed information about the entry and click

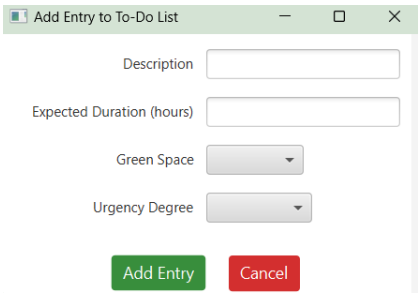
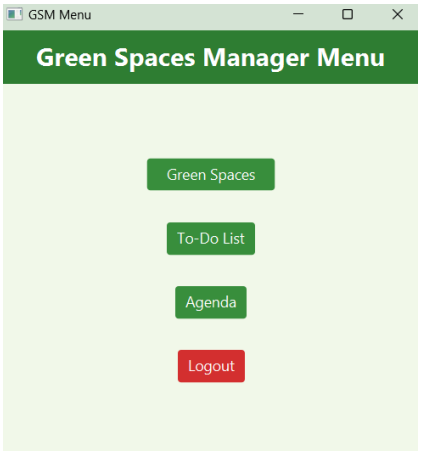


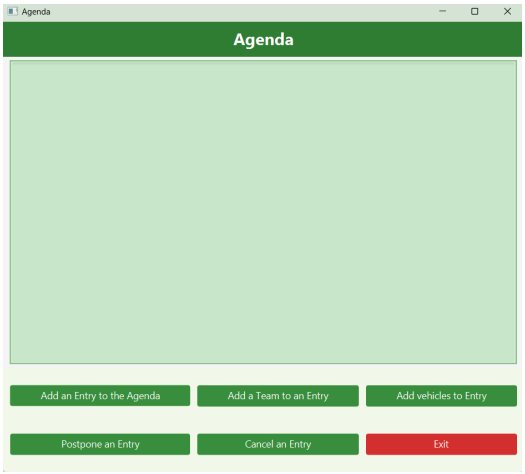
Figure 96: Step 3

5.3.4 Register Agenda Entry

Step 1: Already logged in, click on the button "Agenda" Step 2: Click on the button "Add an entry to agenda"



Step 1



Step 2

Step 3: Choose an entry and the start date.

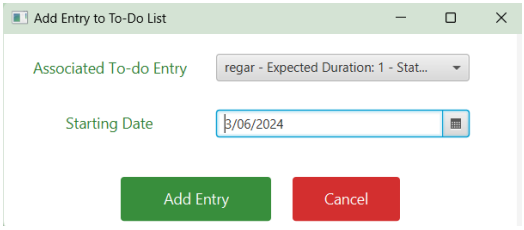


Figure 97: Step 3

5.3.5 Add a Team to Agenda

Step 1: Already logged in and in the agenda menu, click the button "Add team to an entry"

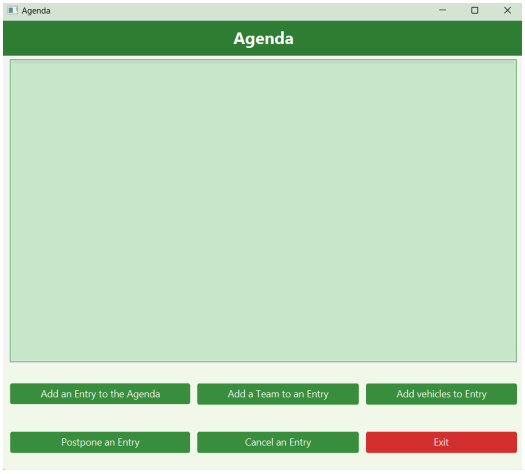


Figure 98: Step 3

Step 2: Choose the entry and the team you want to assign and click "Assign Team"

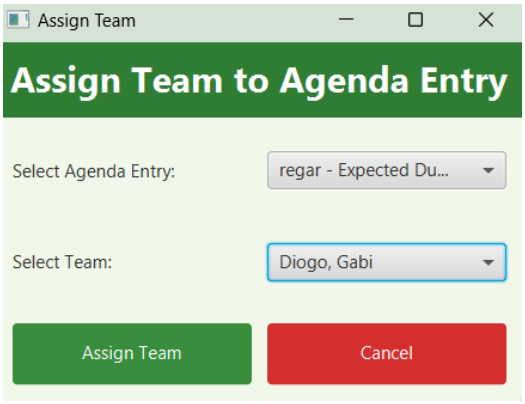


Figure 99: Step 3

5.3.6 Cancel an Agenda Entry

Step 1: After logged in as a GSM and in the agenda menu click "Cancel Agenda Entry"

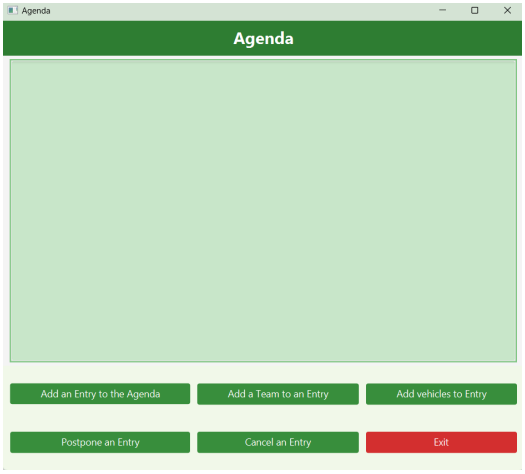


Figure 100: Step 1

Step 2: Choose an entry and click "Cancel Entry"

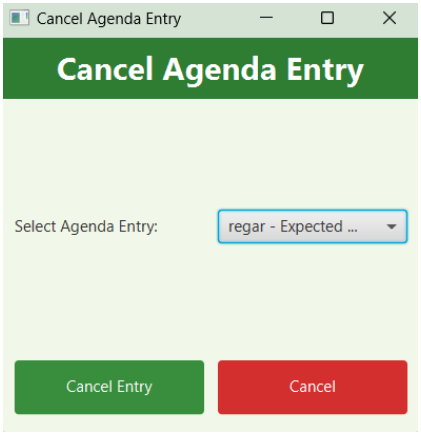


Figure 101: Step 2

5.3.7 Cancel an Agenda Entry

Step 1: After logged in as a GSM and in the agenda menu click "Postpone Agenda Entry"

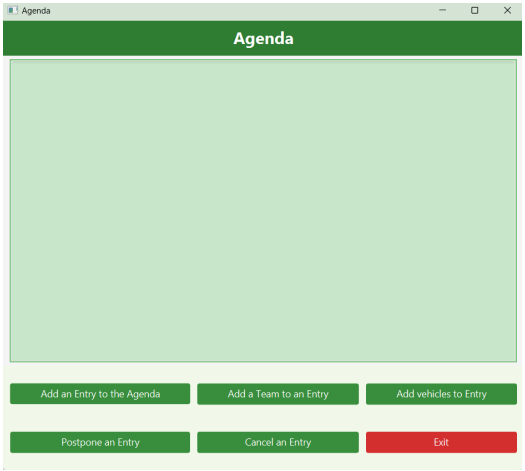


Figure 102: Step 1

Step 2: Choose an entry and click "Postpone Entry"

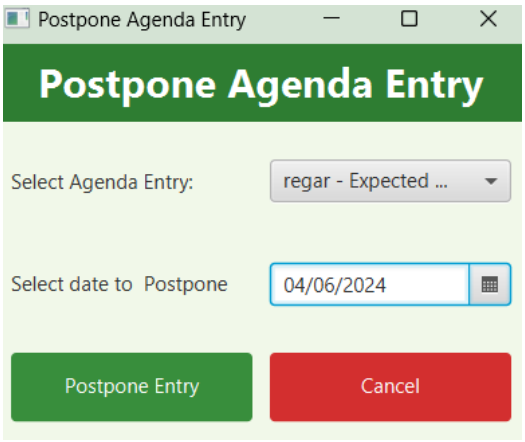


Figure 103: Step 2

5.3.8 Add Vehicles to Agenda Entry

Step 1: After logged in as a GSM and in the agenda menu click "Add vehicles to entry"

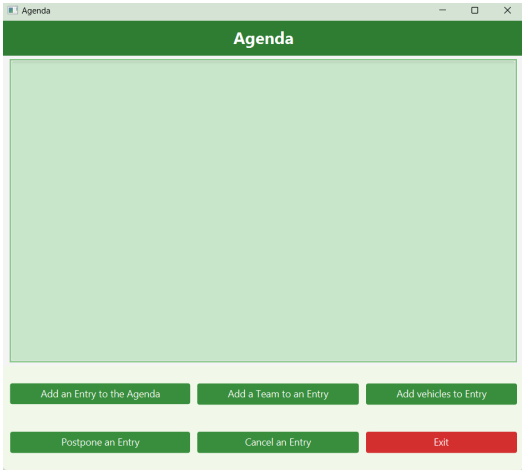


Figure 104: Step 1

Step 2: Choose an entry and vehicle(s) and click on "Assign vehicles"

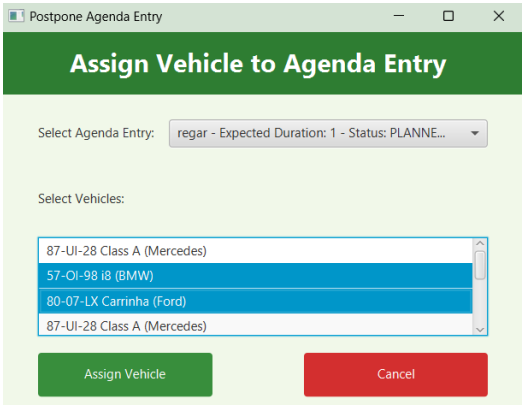


Figure 105: Step 2

6 Troubleshooting Guide

6.1 Installation Issues

Problem: Software installation fails.
Solution:

1. **Check System Requirements:** Ensure your system meets the minimum requirements:
    - OS: Windows 10 or higher, macOS Catalina or higher, Linux Kernel 5.4 or higher.
    - Processor: 2 GHz dual-core processor.
    - RAM: 4 GB or more.
    - Disk Space: At least 500 MB of free space.
2. **Dependencies:** Ensure all required dependencies and plugins are installed:
    - Java Development Kit (JDK) 11 or higher.
3. **Permissions:** Ensure you have the necessary administrative permissions to install the software.
4. **Logs:** Check installation logs for specific error messages and follow recommended actions.

Problem: Application does not start after installation.
Solution:

1. **Verify Installation:** Ensure the installation process completed without errors.
2. **Environment Variables:** Check that `JAVA_HOME` and `PATH` environment variables are set correctly.
3. **Dependencies:** Ensure all dependencies are properly installed.
4. **Logs:** Check application logs in the installation directory for errors and troubleshoot based on log messages.

6.2 User Login Issues

Problem: Unable to log in.
Solution:

1. **Credentials:** Verify that you are using the correct username and password.
   .

6.3 Data Input Errors

Problem: Error while registering a collaborator, vehicle green space or entries
Solution:

1. **Input Validation:** Ensure all required fields are filled in correctly without special characters or digits if not allowed.
2. **Format:** Verify the format of dates, contact information, and identification numbers.
3. **Duplicates:** Ensure there are no duplicate entries for the same collaborator or vehicle.

Problem: Team Proposal Generation Fails

1. **Check Team Size Constraints:** Ensure the specified minimum and maximum team sizes are reasonable and within the system's capacity to match.
2. **Skill Availability:** Verify that the required skills are available among registered collaborators.
3. **Review Team Composition Rules:**Make sure the input criteria for team composition (skills required) are correctly chosen)

6.4 Performance Issues

Problem: The application is running slowly.
Solution:

1. **System Resources:** Check if your system meets the recommended hardware specifications and close unnecessary applications to free up resources.
2. **Updates:** Ensure the application is updated to the latest version.
3. **Logs:** Check application logs for any performance-related warnings or errors.

6.5 Report Generation Issues

Problem: Error generating maintenance report or statistical analysis.
Solution:

1. **Data Integrity:** Ensure the data in the system is complete and correct.
2. **Filters:** Verify the filters and parameters used for generating the report.
3. **Logs:** Check logs for specific errors during report generation and troubleshoot accordingly.

7 Frequently Asked Questions (FAQs)

1. **Who can use this system?**
    - The system is intended for Human Resources Managers (HRM), Vehicle and Equipment Fleet Managers (VFM), Collaborators, Green Spaces Managers (GSM), Green Spaces Users (GSU), and Software Quality Assessment Team Managers (QAM).
2. **How can I track the maintenance schedule for a specific green space?**
    - In the GSM section, select the green space you wish to monitor. The system will display the scheduled maintenance tasks, assigned teams, and status updates.
3. **What should I do if I encounter a bug?**
    - Report the bug through the issue tracking system or contact the technical support team with detailed information about the issue.
4. **How do I register a new collaborator?**
    - HRM can register a new collaborator by filling in all required fields such as name, birth date, admission date, address, contact info, taxpayer number, ID document type, and respective number.
5. **What security measures are in place to protect the data?**
    - The system employs encryption for data transmission, secure login protocols, regular security updates, and access control measures to ensure data integrity and confidentiality.

6. **How do I add a new skill to the system?**

   - HRM can add a new skill by entering the skill name, ensuring it does not contain special characters or digits, and verifying that the skill is not already registered.

7. **What to do if I cannot register a vehicle?**

   - Ensure all required details are filled in correctly and in the correct format. If errors persist, check the troubleshooting guide.

8 Conclusion

This user manual provides a comprehensive guide to utilizing the software application for managing green spaces ALLTREE. By following the instructions and utilizing the features described in this manual, you can effectively enjoy the features of our app. For further assistance, please refer to the technical support section or contact our support team. Our team 4Real wishes you a good experience with our application ALLTREE !