

Degree in  
**Informatics Engineering**

## **User Manual**

2<sup>nd</sup> Semester | 1<sup>st</sup> Year

G121 – iQuê?

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**1DK-L**

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## 1. Glossary

**Absolute Frequency Table** - A table showing the count or frequency of observations within each category or class, without considering their proportion to the total.

**Acceptance Criteria** - Specific conditions or requirements that must be met to fulfill a user story and deliver value to the end-user.

**AC** - Acronym for Acceptance Criteria.

**Agenda** - The Agenda is a mechanism for planning the week's work. An entry in the agenda is a *Task*.

**Algorithm** - A set of step-by-step instructions or rules to solve a specific problem or perform a task, often involving data manipulation and computational operations.

**Asymptotic Behavior** - The study of how the performance of an algorithm or function changes as the input size approaches infinity, often described using Big O notation.

**Barplot** - A graphical representation of data using bars to display the frequency or distribution of a variable, such as monthly water consumption in parks.

**Boxplot** - A graphical representation of data distribution, displaying the median, quartiles, and potential outliers of a dataset, often used to identify patterns and variations within different groups or categories.

**Coefficient of Skewness** - A measure of the asymmetry or lack of symmetry in a dataset's distribution, indicating whether the data is skewed to the left or right.

**Collaborator** - A person who is an employee of the organization.

**CSV File** - A file format for storing tabular data in plain text, where each line represents a row of data, and commas or other delimiters separate the values within each row.

**Data Structure** - A specialized format or arrangement of data that allows efficient storage, retrieval, and manipulation, such as arrays, linked lists, trees, and graphs.

**Distance** - The physical or mathematical measure of the length or separation between two points, often used to describe the distance between water points in a network.

**Electronic Device** - A device equipped with electronic components and circuits for processing, storing, and transmitting information, such as the device used at park exits to collect data on equipment usage by park visitors.

**Employee** - A member of the organization (MusgoSublime).

**Equipment** - Equipment can be greatly diverse, such as 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.

**Execution Time** - The duration or elapsed time taken by a program, algorithm, or operation to complete its execution, typically measured in seconds or milliseconds.

**Garden** - Green space with or without trees with little or no equipment.

**Green Spaces Manager** - Person who manages the green spaces.

**Green Spaces User** - Person who uses the green spaces.

**GSM** - Acronym for Green Space Manager.

**GSU** - Acronym for Green Space User.

**Histogram** - A graphical representation of data distribution, where bars represent the frequency of observations within specified intervals or classes.

**HRM** - Acronym for Human Resources Manager.

**Human Resources Manager** - Person who manages human resources.

**Installation Cost** - The expenses incurred in setting up or implementing a system, infrastructure, or facility, including costs associated with equipment, labor, and materials.

**Job** - Job is a property assigned to a Collaborator to indicate his main Job (for example gardener or electrician).

**Large-sized park** - Multi-function space with diverse garden spaces, and woods, including varied equipment and services.

**Machines** - MS has tractors, backhoe loaders, and rotating machines, lawnmowers, among others.

**Medium-sized park** - Green space with a few hundred or thousands of square meters with a wooded garden area, it includes some infrastructures such as toilets, drinking fountains, irrigation system, lighting, children's playground.

**MusgoSublime** - Organization dedicated to the planning, construction and maintenance of green spaces for collective use.

**MS** - Acronym for MusgoSublime.

**Primitive Operations** - Basic computational operations or functions that are fundamental and elementary, typically implemented directly by the hardware or low-level software.

**Pie Chart** - A circular statistical graphic divided into slices to illustrate numerical proportions, such as the percentage of each equipment type used in parks.

**QAM** - Acronym for Software Quality Assessment Team Manager.

**Route** - A path or sequence of locations, nodes, or points, often representing a journey or traversal between starting and ending points, as described in the context of laying pipes between water points.

**Skill** - Skill is a property assigned to a Collaborator that indicates one of his abilities (for example being able to drive light-duty vehicles).

**Software Quality Assessment Team Manager** - Person who manages the Software Quality Assessment Team and its process.

**Survey** - A structured method used to gather information or feedback from a targeted group of people regarding their opinions, preferences, or behaviors on a particular topic or subject.

**Task** - A Task is a certain work that needs to be done, on an occasional or regular basis that may be done in one or more green space. A task has a certain time interval for it to be done.

**Team** - A Team is a temporary association of employees who will carry out a determined set of tasks in one or more green spaces.

**Test** - A procedure or set of procedures designed to evaluate the functionality, performance, or reliability of a system, algorithm, or component, often involving specific inputs and expected outputs.

**Unique Data Structure** - A specialized data organization or container that ensures uniqueness of its elements, preventing duplicates and facilitating efficient retrieval and manipulation.

**User Portal** - An online platform or interface accessible to users for interacting with and accessing services, information, or resources provided by an organization or system, facilitating data collection and user engagement in park management.

**User Story** - A concise description of a software feature or requirement from the perspective of an end-user, typically written in non-technical language to capture the intended functionality or behavior.

**US** - Acronym for User Story.

**Vehicle** - Vehicles are needed to carry out the tasks assigned to the teams and to transport machines and equipment.

**Vehicle Fleet Manager** - Person who manages the park's fleet.

**VFM** - Acronym for Vehicle and Equipment Fleet Manager.

**Water Consumption Analysis** - A process of examining the usage of water in parks, typically measured in cubic meters (m<sup>3</sup>), to determine costs and efficiency in managing water expenses.

**Water Point** - A location or point of access to water, often represented by coordinates or identifiers, such as "Water Point X" and "Water Point Y," in the context of water distribution networks.

## 2. Introduction

This user manual comprises detailed instructions on how to use the Musgo Sublime's application. This application manages Green Spaces and everything involved. It provides all the functionality needed with features such as:

- Registering new collaborators;
- Make new teams automatically;
- Register new Green Spaces;
- Manage an agenda and a to-do list;

### 2.1. Purpose of the app

This app has the purpose to manage Green Spaces from the point of the Green Spaces Manager (GSM), Human Resources Manager (HRM), Fleet Manager (VFM), etc.

Each individual can do limited things according to his position. The Admin can control everything.

### 2.2. Overview of features

- Creating and associating skills to a collaborator;
- Creating and associating jobs to a collaborator;
- Register and manage collaborators;
- Automatic teams formation;
- Registering vehicles and its maintenances;
- Know the exact costs referring to water consumption of specific green spaces;
- Know which pieces of equipment are used per day;
- Be able to collect data from the user portal to be able to understand what type of groups frequent my park;
- Apply an algorithm that returns the routes to be opened and pipes needed to be laid with a minimum accumulated cost;
- Know the shortest routes in case of emergencies;
- Register and manage new Green Spaces;
- Register entries and manage the to-do list in the Agenda;

### 2.3. System Requirements

The system needs to have the SceneBuilder app and an editor to open the code.

## 3. Installation instructions

### 3.1. Java Installation

- Search for “Java Download” in your browser.
- Open the first link.
- Click in the button that says “Download”.
- The last version of the Java download executable will be downloaded.
- Save the executable in the computer and open it.
- Follow the download steps that will appear to complete the process.

### 3.2. Java FX installation

- Search for “JavaFX 20 Download” in your browser
- Open the first link.
- Click in the button that says “Download” in the left side.
- Select the same options as the image below.

#### Downloads

JavaFX version    Operating System    Architecture    Type

20.0.1    Windows    x64    SDK

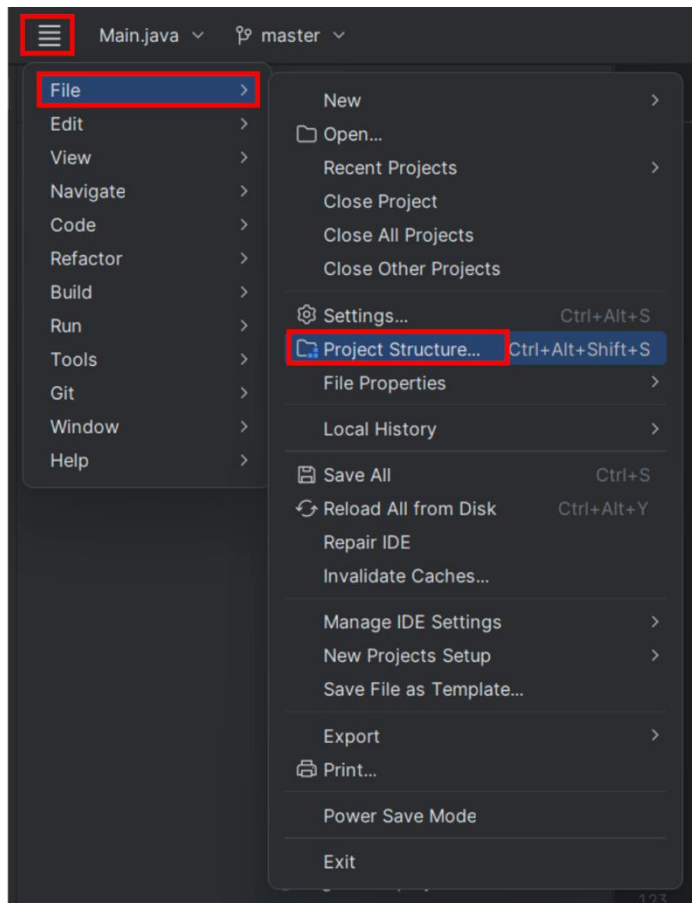
☐ Include older versions

OS	Version	Architecture	Type	Download
Windows	20.0.1	x64	SDK	<a href="#">Download</a> [SHA256]

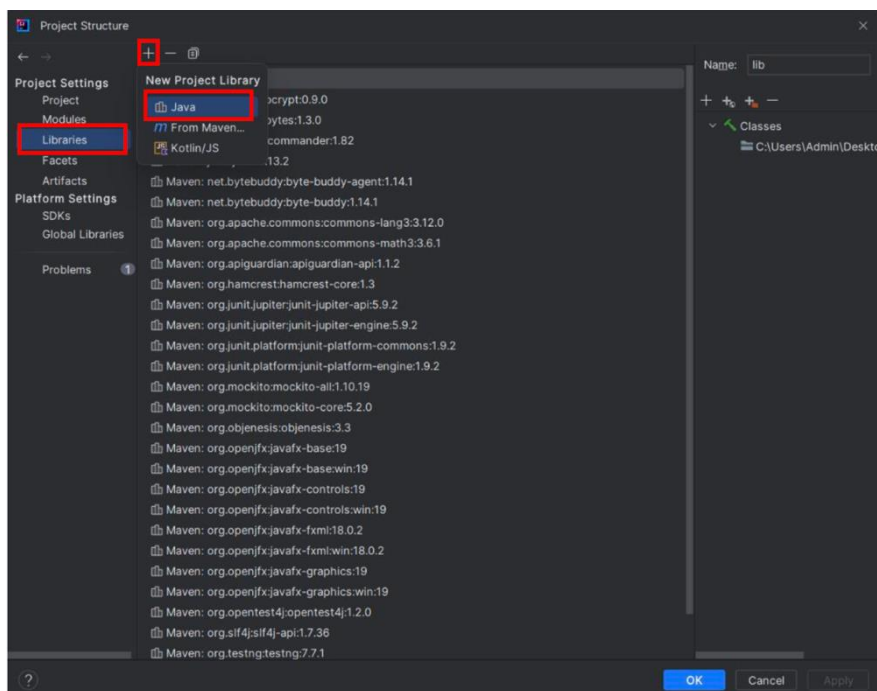
- Click on the button that says “Download”.
- Extract the downloaded files to complete the process.

### 3.3. Configure JavaFX in IntelliJ

Step 1- Go to “Main Menu”, “File”, and click in “Project Structure”.

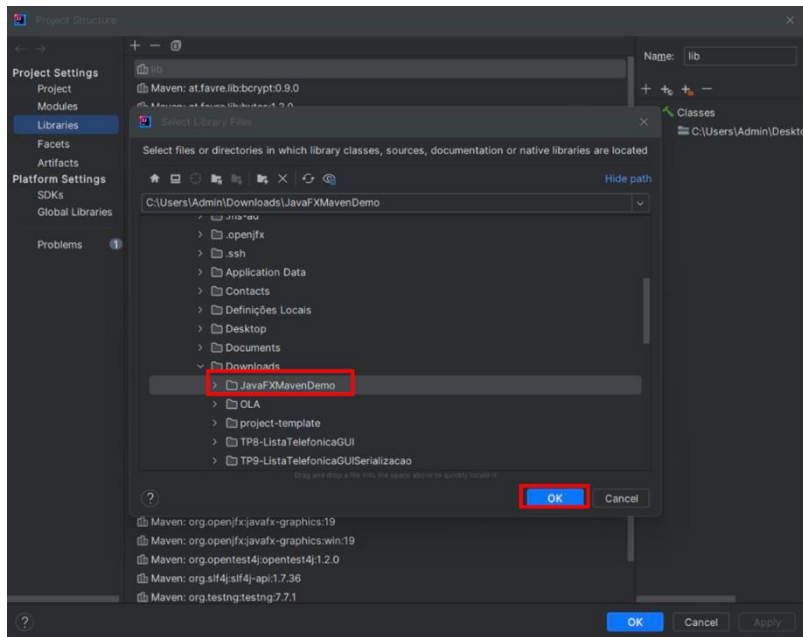


Step 2- Go to “Libraries”, click on “+” and then click on “Java”.





Step 3- Select the JavaFX20 folder and click “ok”.



Step 4- Click “Apply” and “Ok” to complete the configuration.

## 4. Features

### 4.1. Utils Features

#### 4.1.1. Login

Step 1- Select the login option writing the number “1”.

```

--- MAIN MENU -----
1 - Do Login
2 - Know the Development Team
0 - Cancel

Type your option: |
  
```

Step 2- Enter the email address and password of the administrator: admin@this.app,"admin", respectively.

```
--- LOGIN UI -----  
  
Enter UserId/Email: admin@this.app  
  
Enter Password: admin|
```

#### 4.1.2. Admin menu

This is the Admin menu where you can choose any of these features.

```
--- ADMIN MENU -----  
  
1 - Register Skills  
2 - Register a new Job  
3 - Register Collaborator  
4 - Assign a Skill to a Collaborator  
5 - Create a team  
0 - Cancel  
  
Type your option: |
```

##### 4.1.2.1. Register Skills

Step 1- Type the number "1" in the terminal.

Step 2- Type the name of the skill you want to register.

```
--- Register Skills -----  
  
Enter Skill Name: HardWorking  
  
Skill successfully registered!
```

#### 4.1.2.2. Register a new Job

Step 1- Type the number “2” in the terminal.

Step 2- Type the name of the job you want to register.

```
--- Create Job -----
What's the name of the job you will register today? Gardener
```

Step 3- Type the number of skills needed to do this job and those skills, respectively.

```
How many skills are needed to this job? 1
Type the skill:
Hardworking

Job successfully created!
```

#### 4.1.2.3. Register a collaborator

Step 1- Type the number “3” in the terminal.

Step 2- Choose a job to give to the new collaborator, according to the job list.

Step 3- Enter the name of the collaborator.

```
Enter Collaborator Name: Miguel Silva
```

Step 4- Enter the birth details, admission date, address, phone number, email, taxpayer and identification numbers.

```
Enter Collaborator Birth Details (dd/mm/yyyy): 12/12/2003

Enter Collaborator admission date (dd/mm/yyyy): 21/05/2024

Enter Collaborator Address (format: street numberOfhouse): Rua de Nevogilde 500

Enter Collaborator Phone Number: 912452145

Enter Collaborator Email: miguels@gmail.com

Enter Collaborator Taxpayer Document: 210398765

Enter Collaborator Identification Document: 15450887
Collaborator registered successfully!
```

#### 4.1.2.4. Assign a skill to a collaborator

Step 1- Type the number 4 in the terminal.

Step 2- Enter the collaborator's ID.

```
--- Assign Skills -----  
Collaborators:  
Jorge > ID: 12345678  
  
Enter the selected Collaborator's ID:12345678|
```

Step 3- Enter the number of skills you want to assign to that collaborator.

```
Enter the number of skills to be assigned: 1
```

Step 4- Choose a skill from the list of existing skills.

```
Skills:  
Communication  
Problem Solving  
Teamwork  
Leadership  
Time Management  
  
Enter the Skill's name:Leadership  
Skills assigned to Jorge successfully!  
Skills:  
Leadership
```

#### 4.1.2.5. Create a Team

Step 1- Type the number “5” in the terminal.

Step 2- Enter the max and min size of your team.

```
--- Create Team -----  
What's the max size of your team?  
2  
What's the minimum size of your team?  
1
```

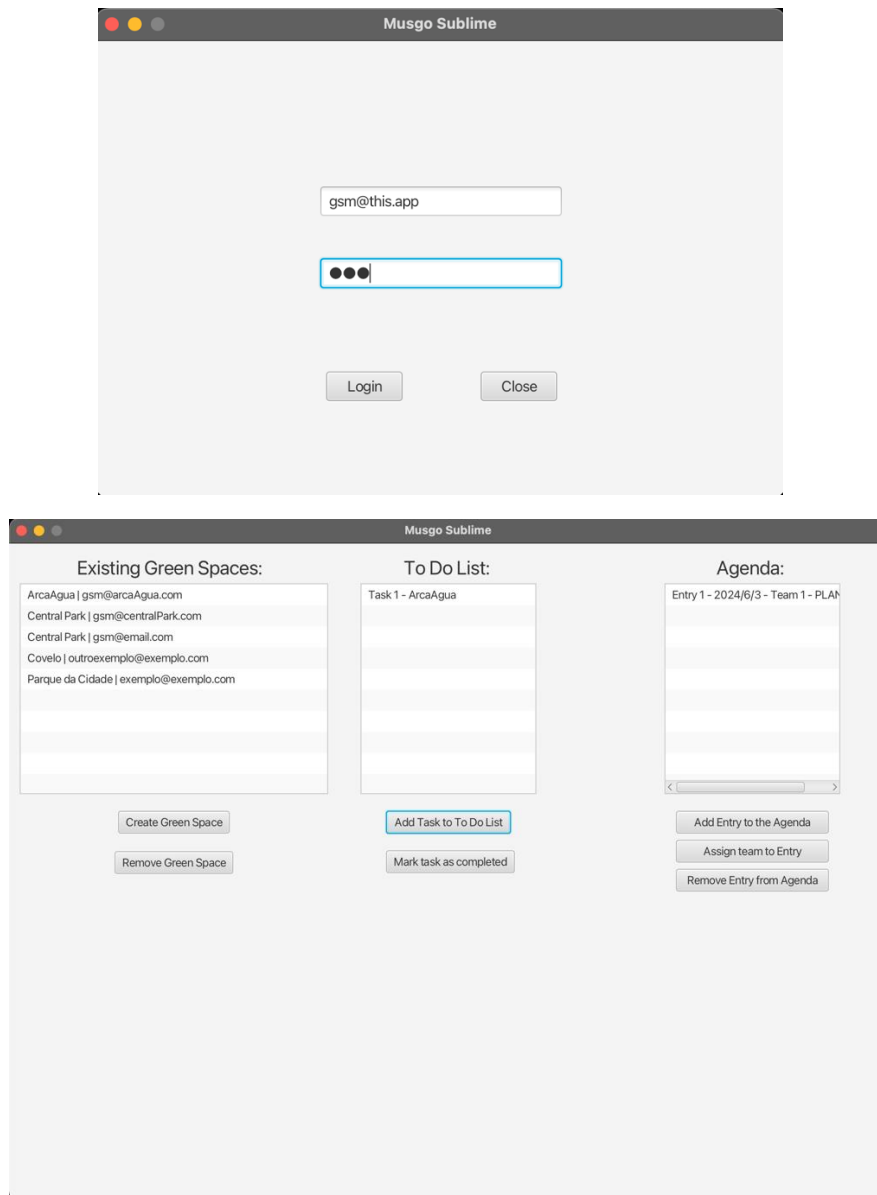
Step 3- Type the number of skills needed to integrate the team and the names of those.

```
How many skills are needed for this job?  
1  
Skills:  
Communication  
Problem Solving  
Teamwork  
Leadership  
Time Management  
  
Enter the Skill's name:Leadership  
  
Team successfully created!
```

## 4.2. GUI Features

### 4.2.1. Green Spaces Manager Menu

To login in this menu, you will have to introduce the gsm email and the password.



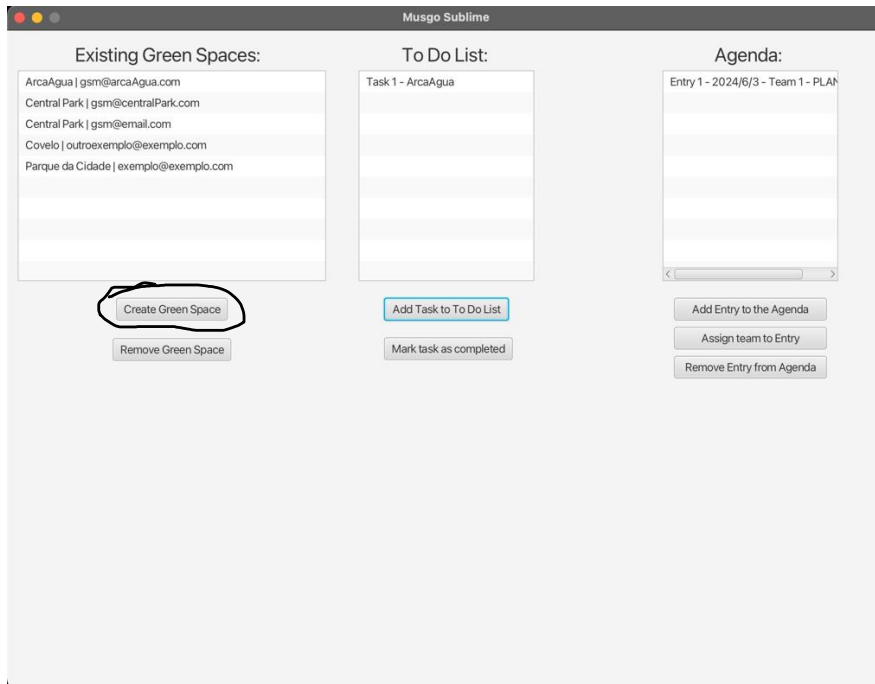
On the left you can see a list of all the existing Green Spaces managed by the GSM that logged in. You have the option to create a green space or remove one if you want to.

In the middle you have a To Do List, where you can see the tasks that are planned, and also in which Green Space they are intended to be done. You can add tasks and add details like, name, description, duration, urgency degree and in which Green Space you want it to be done.

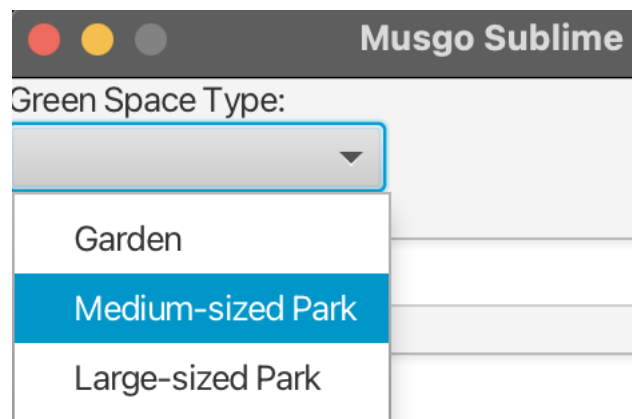
At the right, you have an Agenda where you have jobs and tasks associated to teams to work on them. It has features like add an entry with details like, Name, which task is associated with the entry, due date and the status. It also has the possibility to assign a team to an entry and to remove an entry from the Agenda.

#### 4.2.1.1. Create a Green Space

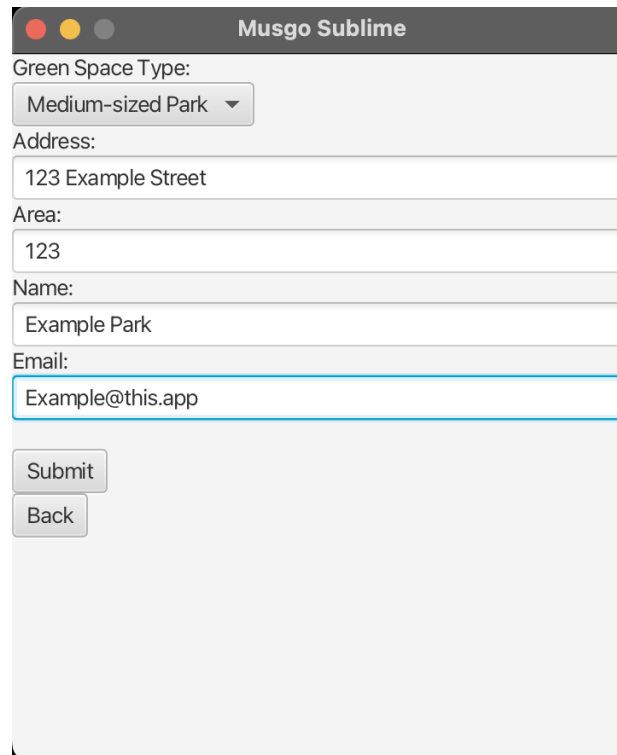
Step 1- Click on the “Create Green Space” button;



Step 2- Select the type of Green Space you want to create



Step 3- Fill the fields, address, area(m2), name, email.



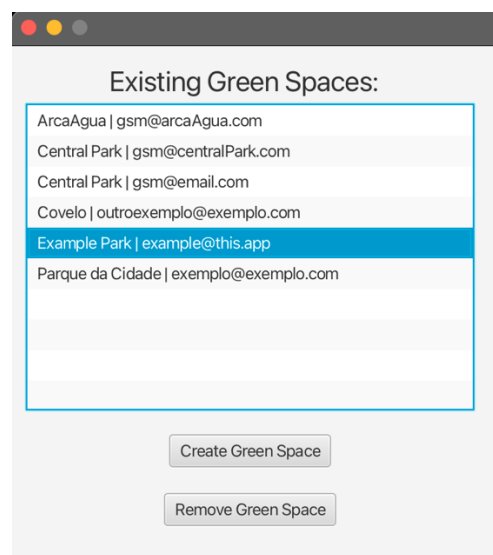
The screenshot shows a web application window titled "Musgo Sublime". It contains a form with the following fields and values:

- Green Space Type: Medium-sized Park (dropdown menu)
- Address: 123 Example Street
- Area: 123
- Name: Example Park
- Email: Example@this.app

At the bottom of the form are two buttons: "Submit" and "Back".

#### 4.2.1.2. Remove a Green Space

Step 1- Select the Green Space you want to remove.



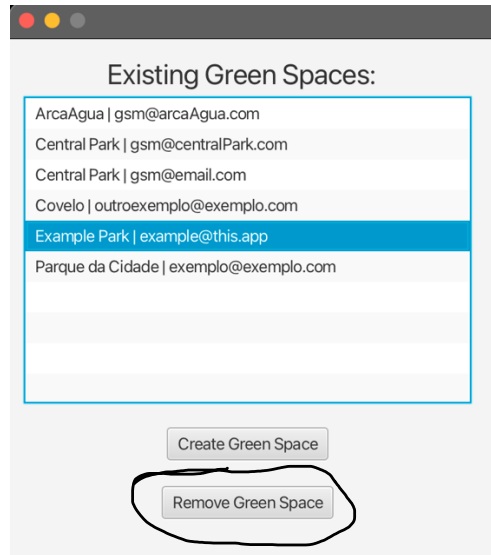
The screenshot shows a web application window titled "Existing Green Spaces:". It contains a table with the following data:

ArcaAgua   gsm@arcaAgua.com
Central Park   gsm@centralPark.com
Central Park   gsm@email.com
Covelo   outroexemplo@exemplo.com
Example Park   example@this.app
Parque da Cidade   exemplo@exemplo.com

Below the table are two buttons: "Create Green Space" and "Remove Green Space".

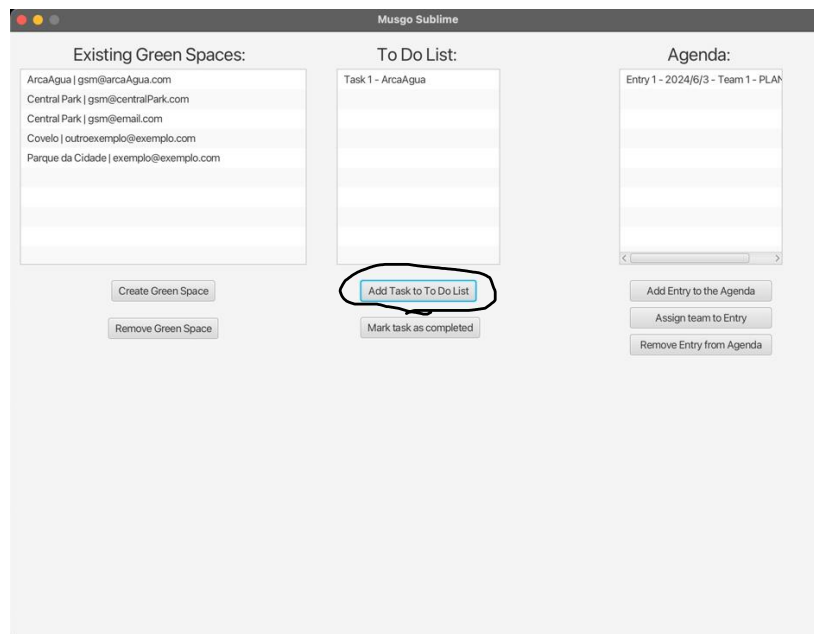


Step 2- Click in the “Remove Green Space” button.

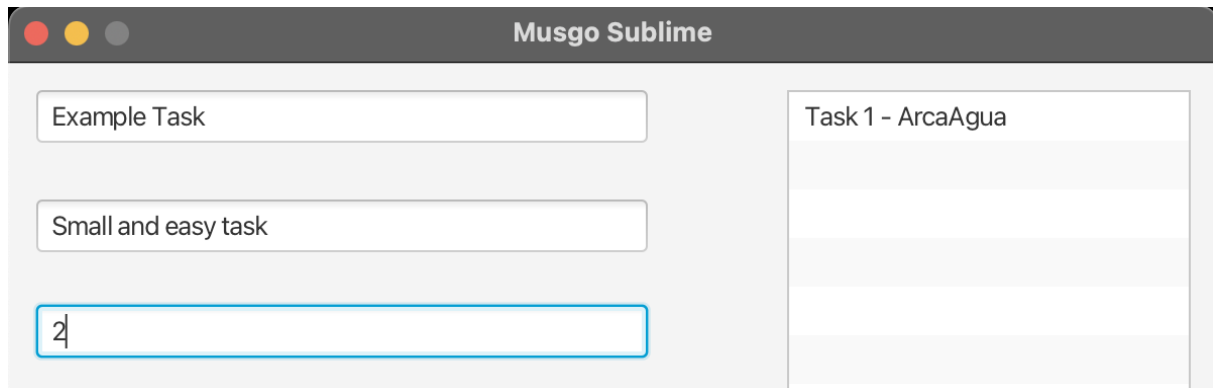


#### 4.1.2.3. Add a task to the To Do List

Step 1- Click on the “Add Task to To Do List” button.

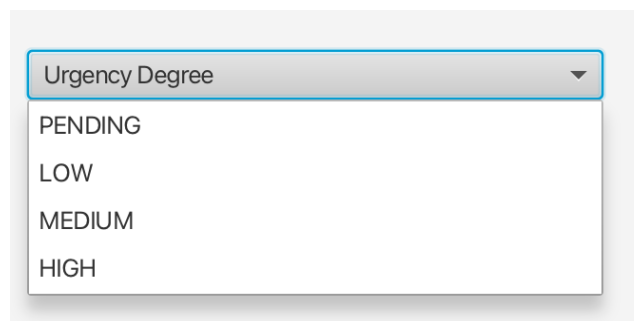


Step 2- Fill the fields, “Name”, “Description” and “Duration” (in days).



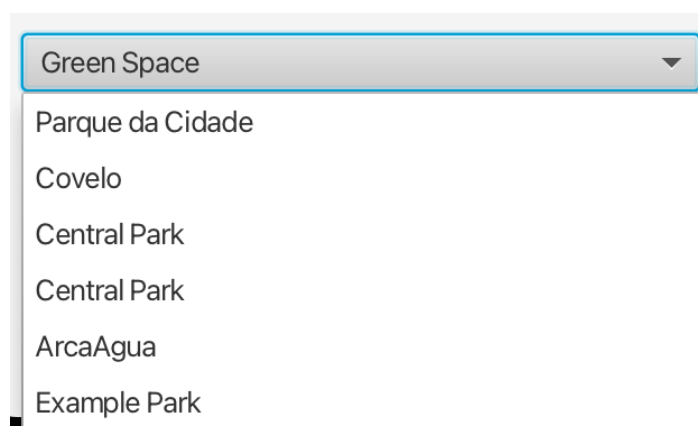
The screenshot shows a window titled "Musgo Sublime". On the left, there are three input fields: the first contains "Example Task", the second contains "Small and easy task", and the third contains the number "2". On the right, there is a panel titled "Task 1 - ArcaAgua" with a list of three empty rows for task details.

Step 3- Choose the urgency degree.



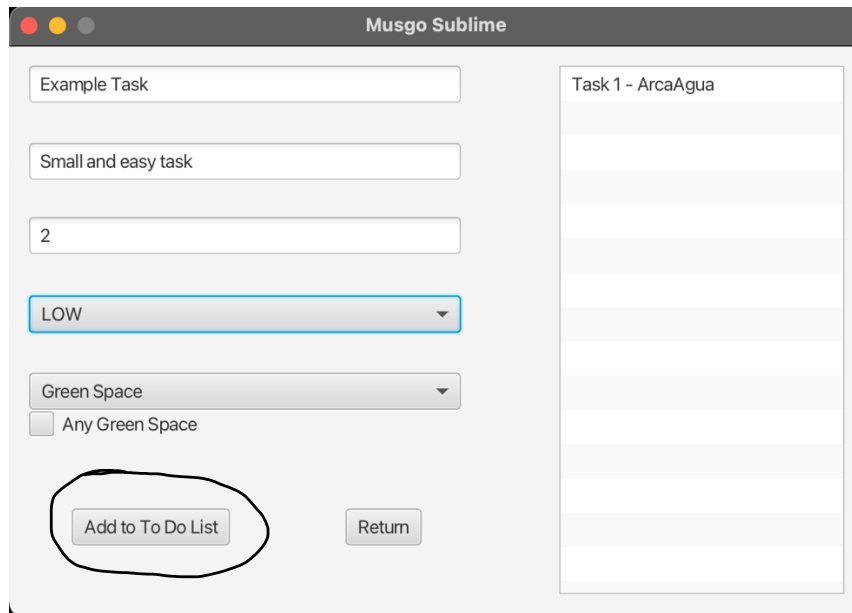
The screenshot shows a dropdown menu titled "Urgency Degree". The menu is open, displaying four options: "PENDING", "LOW", "MEDIUM", and "HIGH".

Step 4- Select in which Green Space is the task going to be executed.



The screenshot shows a dropdown menu titled "Green Space". The menu is open, displaying a list of green spaces: "Parque da Cidade", "Covelo", "Central Park", "Central Park", "ArcaAgua", and "Example Park".

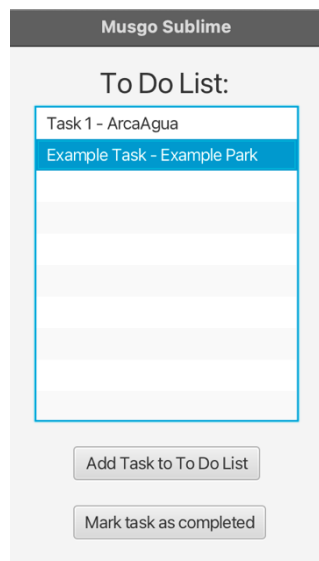
Step 5- Click on the “Add to To Do List”.



The screenshot shows the 'Musgo Sublime' application window. On the left, there are several input fields: 'Example Task', 'Small and easy task', '2', a dropdown menu set to 'LOW', and another dropdown menu set to 'Green Space'. Below these is a checkbox labeled 'Any Green Space'. At the bottom left, the 'Add to To Do List' button is circled in black. To its right is a 'Return' button. On the right side of the window, there is a list titled 'Task 1 - ArcaÁgua' with several empty rows below it.

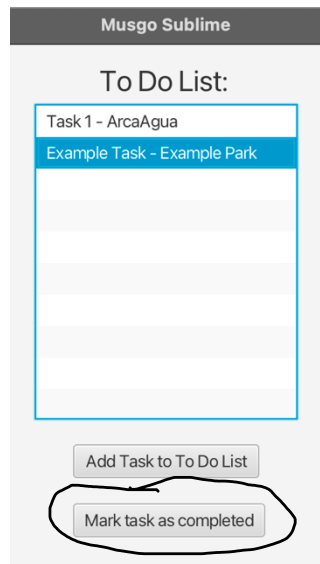
#### 4.1.2.4. Mark Task as completed

Step 1- Select the Task you want to mark as completed.



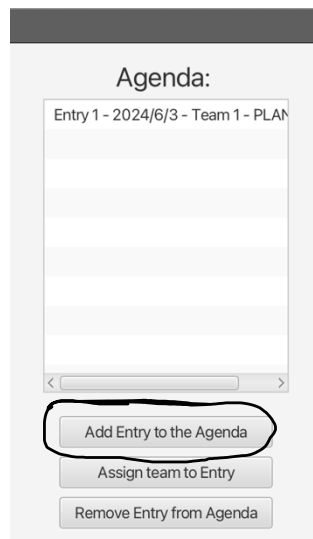
The screenshot shows the 'Musgo Sublime' application window displaying the 'To Do List' screen. The title 'To Do List:' is at the top. Below it, there is a list of tasks: 'Task 1 - ArcaÁgua' and 'Example Task - Example Park'. The 'Example Task - Example Park' is highlighted with a blue background. Below the list, there are two buttons: 'Add Task to To Do List' and 'Mark task as completed'.

Step 2- Click on the “Mark task as completed” button.



#### *4.1.2.5. Add Entry to the Agenda*

Step 1- Click the “Add Entry to the Agenda” button.



Step 2- Name your Entry.

Example Task

Task 1

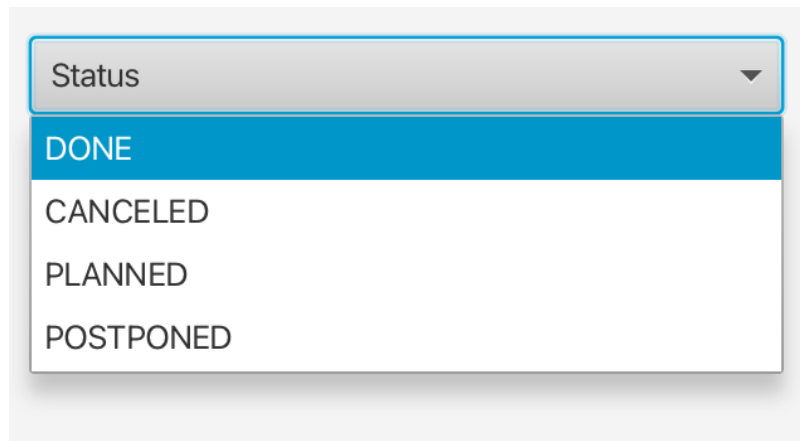
Example Task

< June >

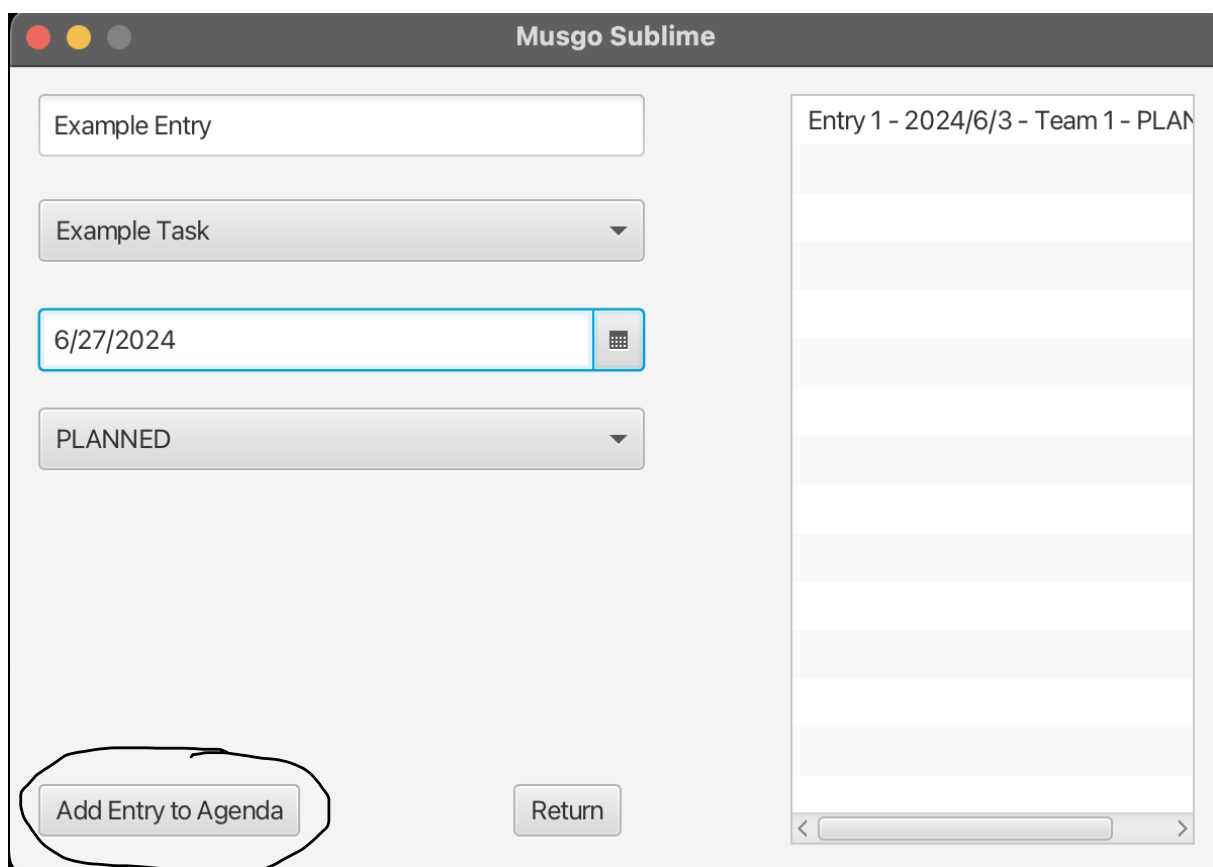
< 2024 >

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
22	26	27	28	29	30	31	1
23	2	3	4	5	6	7	8
24	9	10	11	12	13	14	15
25	16	17	18	19	20	21	22
26	23	24	25	26	27	28	29
27	30	1	2	3	4	5	6

21

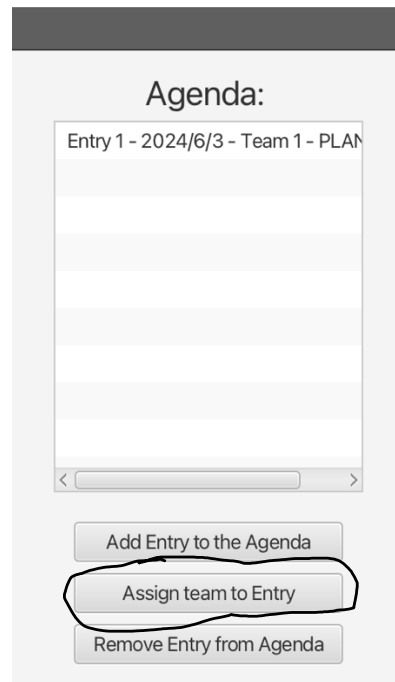


Step 6- Click the “Add Entry to Agenda” button to save your Entry.

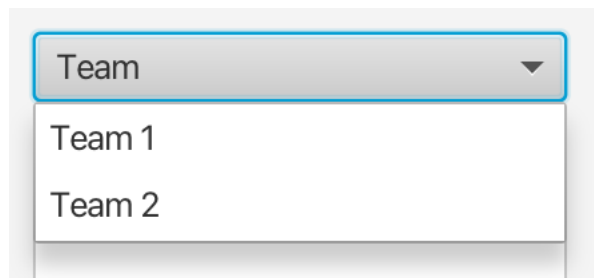


#### *4.1.2.6. Assign a Team to an Entry*

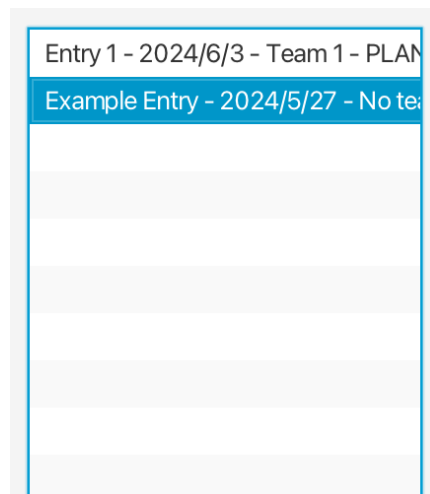
Step 1 – Click on the “Assign team to Entry” button.



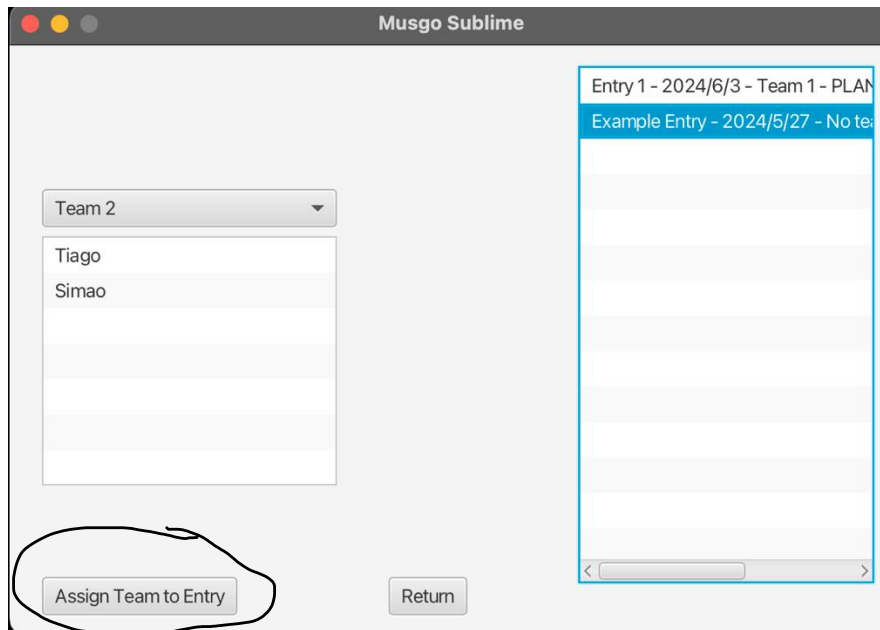
Step 2- Select the team you want to assign the Entry.



Step 3 – Select the Entry you want to assign to the team.

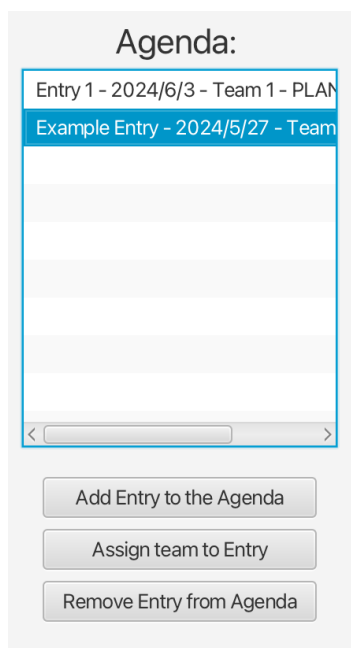


Step 4 – Click the “Assign Team to Entry” button.



#### 4.1.2.7. Remove an Entry from the Agenda

Step 1- Click on the Entry you want to remove.



Step 2- Click on the “Remove Entry from Agenda” button.



Agenda:

Entry 1 - 2024/6/3 - Team 1 - PLAN

Example Entry - 2024/5/27 - Team

< >

Add Entry to the Agenda

Assign team to Entry

Remove Entry from Agenda

#### 4.2.2. Collaborator Menu

Musgo Sublime

Entries assigned to you:

From: To: State:

Status

In this Menu, you can select an interval of dates and the status of the tasks you want to see, and the list will show every task with that status in that interval of days.

#### 4.2.2.1. See Tasks

Step 1- Select the first date and the last one, to make the interval of days.

From:

To:

< June > < 2024 >

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
22	26	27	28	29	30	31	1
23	2	3	4	5	6	7	8
24	9	10	11	12	13	14	15
25	16	17	18	19	20	21	22
26	23	24	25	26	27	28	29
27	30	1	2	3	4	5	6

To:

State:

< June > < 2024 >

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
22	26	27	28	29	30	31	1
23	2	3	4	5	6	7	8
24	9	10	11	12	13	14	15
25	16	17	18	19	20	21	22
26	23	24	25	26	27	28	29
27	30	1	2	3	4	5	6

Step 2- Select the status of the tasks you want to see.

State:

Status ▼

All

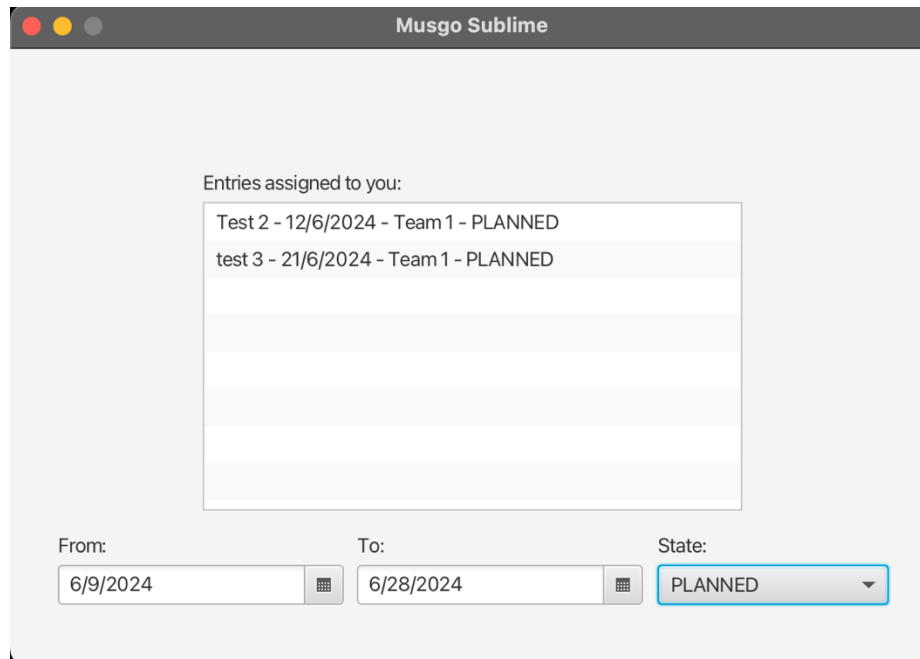
DONE

CANCELED

PLANNED

POSTPONED

Step 3- View the tasks.



## 5. Troubleshooting

Problem/Symptom	Possible Cause	Solution
Application won't start	Java not installed correctly	Reinstall Java and ensure it is properly configured
	JavaFX not installed	Install JavaFX and configure it in IntelliJ
	Incorrect Java version	Ensure the latest version of Java is installed
Unable to log in	Incorrect email or password	Verify and re-enter login credentials
	Admin account not set up	Contact system administrator to set up an admin account
Can't create Green Space	Missing required fields	Ensure all required fields are filled

Problem/Symptom	Possible Cause	Solution
	Application error	Restart the application and try again
Error while registering skills	Skill name already exists	Use a unique name for each skill
Can't see tasks in Collaborator Menu	Incorrect date range or status selected	Verify the date range and task status, then try again
Unable to add entry to Agenda	Missing entry details	Ensure all entry details are provided
	Database connectivity issue	Check network connection and database status
Teams not forming automatically	Incorrect configuration	Verify the team formation settings
Error in water consumption report	Incorrect data entry	Ensure data entered for water consumption is correct
Unable to mark task as completed	Task not selected	Select the task before marking it as completed

## 6. FAQ

### 1. What is the purpose of the Musgo Sublime application?

The Musgo Sublime application is designed to manage green spaces, allowing different managers (GSM, HRM, VFM) to register new collaborators, create teams, manage tasks, and maintain an agenda for green space activities.

### 2. What are the system requirements for the application?

The application requires Java and JavaFX to be installed. Additionally, you need an editor like IntelliJ for configuration.

### **3. How do I install Java and JavaFX?**

Refer to the Installation Instructions section in the user manual for step-by-step instructions on installing Java and JavaFX.

### **4. How do I log in to the application?**

Select the login option by typing the number "1" in the terminal. Enter the email address and password of the administrator: admin@this.app and admin, respectively.

### **5. What should I do if the application won't start?**

Ensure that Java and JavaFX are installed correctly and that you are using the latest version of Java. Reinstall them if necessary and follow the configuration steps in the user manual.

### **6. How can I register a new collaborator?**

In the Admin menu, type "3" in the terminal. Follow the prompts to choose a job, enter the collaborator's details, and complete the registration.

### **7. How do I create a new Green Space?**

In the Green Spaces Manager Menu, click on the "Create Green Space" button. Select the type of Green Space, and fill in the required fields such as address, area, name, and email.

### **8. How can I add a task to the To Do List?**

In the Green Spaces Manager Menu, click the "Add Task to To Do List" button. Fill in the task details, choose the urgency degree, select the Green Space, and click "Add to To Do List".

### **9. What should I do if I can't see tasks in the Collaborator Menu?**

Ensure that you have selected the correct date range and task status. Adjust these filters and try again.

### **10. How can I contact support if I encounter an issue not listed in the troubleshooting section?**

If you encounter an issue not covered in the troubleshooting section, please contact the system administrator or support team for further assistance.