Logo, company name

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**Final Project Definition**

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**Git -** [Icon

Description automatically generated](https://github.com/Atsaady/Buddy)

**1. Project Description:**

Buddy is the answer for the lazy gardeners.  
Our system is connected to a device linked to sensors located in the soil of the plants and gather live information out of them.   
After some manipulations made on the gathered information from the sensors, the system will recommend the user what is the best water consumption for each and each plant.  
In addition, the system is connected to both an informative UI and an interactive social media platform that will provide the end users the complete package for home gardening.

**2.Related Work:**

Now days, there are 3 fields that are connected to our application:

1.In agriculture:

There is a vast use of different technologies based on sensors, drones and cameras. Most of those systems are very expensive, complex and are not made for house gardening.

2. House planting:

* Vera: Vera is a blank canvas. There are no guide and no tips. In practice, it functions more like a journal for plant parents who already know what they're doing. It provides an option to upload plant photos and keep track of their growing.
* ThePlantMe: Similarly to Vera- you can upload photos of your plants and in addition the app sends you notifications about watering and fertilizing.
* Gardenia: this app has a big database regarding many kinds of plants and you can create a customized watering alerts schedule.

All of the apps above either rely on database or keep track of plants growing- None of them is collecting live data from the plants. Also, these apps do not provide a platform to connect with other users and share information.

3.In social media:

There are many Facebook groups and forums that are loaded with unorganized information about nourishment and wellbeing of house plants.

We wish to make it easier for a new gardener to get and share information about plants and the best way to grow them.

Our goal is to combine those platforms into one network that will provide both environmental information coming from sensors and social connections.

**3.Functionalities**

Functional options a user can do:

* Logging in/Register by inserting username and password
* Get information about different types of plants
* Get information about his personal gardens
* Upload posts- text and photos to main feed
* Comment on other users posts
* Send messages to other users
* Search for plant information
* Edit his profile information

Options the system will do:

* Identify users and provide personal information about each user
* Send notification to the user regarding his plants
* "Study" the user's garden and recommend the user for relevant treatments
* Get and save the input data from the NodeMCU microcontroller.

Sending a message:

**4. Architecture**

**Diagram

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**6.1. Usage Illustration**

In the first page the user will encounter log in / register options. After logging in the user will see the **Home page** in which he can scroll down to see all of the updated posts and share posts about his own interests.

Posts will be filtered by color according to their subject:

1. Red- “Help me” posts: posts that describe a problem of a user with his plant.
2. Yellow- “Question” posts
3. Green- “Showoff& Tips” posts

On the left side of the page there will be 3 options: My gardens, My profile and "The plant bible".

In "**My Gardens**" page the user can manage his set of gardens, adding plants and follow their wellbeing according to the data coming from the device. In addition, the user can add a "garden" (a different location in his house such as: balcony, backyard, living room etc.) where he wants to manage his plants. In this page we also added a recommendation section in which the system will provide new planting recommendations based on environmental data from the device.

In "**My Profile**" page the user can see his previous posts, his photo and control the data he shares about himself with other users.

Users can interact with each other via inbox **messages**. Let's say I see a post about a plant I'm struggling to keep alive- I can contact a user that just posted a green post and directly ask him a question. Also, the user will get **notifications** – system alerts such as: irrigation alert, high temperature, etc.

The last section in the home page is "**The Plant Bible**". In this page the user can search both indoor and outdoor plants and learn about their ideal conditions to flourish.

**6.2 Mockup**

**Log in page**

Username:

Password:

\*\*\*\*\*\*\*\*\*

LOGO

example@gmail.com

**Register page**

LOGO

example@gmail.com

Username:

Password:

Confirm password:

\*\*\*\*\*\*\*\*\*

\*\*\*\*\*\*\*\*\*

**Home Page**

LOGO

 My garden

My profile

Plant bible

SEARCH

Filter

Post something…...



Posts



**My Garden**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
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|  |  |  |  |

LOGO

 My garden

My profile

Plant bible

SEARCH







Current garden

Gardens list

balcony



bathroom



backyard



We have a

recommendation for you!

Add

a garden

Add

a plant

**My garden – Add a plant**

LOGO

 My garden

My profile

Plant bible

SEARCH



Plant species:

Status:





Activate the device

Date: Automatically saved to database

**My garden – Add a garden**

Yes/No

Size:

Direction:

Type:

Direct sunlight:

Indoor/outdoor/balcony

XxY

N/W/S/E

LOGO

 My garden

My profile

Plant bible

SEARCH



**My garden – Recommendations**

LOGO

 My garden

My profile

Plant bible

SEARCH



Based on information we have collected about your garden we want to recommend you about plants that will flourish in your habitat

Plants list:

* \*

**My profile**

LOGO

 My garden

My profile

Plant bible

SEARCH



M

PHOTO

Edit

Edit

About me

..

..

..

..

..

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My Posts

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**Plant Bible**

LOGO

 My garden

My profile

Plant bible

SEARCH



Search

Plant species:

**Plant bible - plant information**

LOGO

 My garden

My profile

Plants bible

SEARCH



**Cactus** 

Recommended sunlight exposure:

Irrigation routine:

Best time to plant:

Minimal container size:

**Messages**

LOGO

 My garden

My profile

Plants bible

SEARCH



Message1

Message2

Message3

**System alerts**

LOGO

 My garden

My profile

Plants bible

SEARCH



Your roses need watering

Move your cyclamen outside for the night

..........................

**7.Server Side-**

Controller-Server:

* GET (Local zone time, weather) 🡨External resource
* POST (Soil sensor logs, temp sensor logs, general log, alerts) 🡪 DB

Client-Server:

Login/register-

* GET (user creds) 🡨 DB
* POST (new user registration) 🡪 DB
* DELETE (delete user) 🡪 DB

Homepage-

* GET (Specific plant, post, user, data) 🡨 DB
* POST (New post) 🡪 DB
* PUT (Update my post) 🡪 DB
* DELETE (existing post) 🡪 DB

My Garden-

* GET (specific plant from my garden, specific garden) 🡨DB
* POST (Add a garden, add a plant to a garden) 🡪 DB
* PUT (Update my garden) 🡪 DB
* DELETE (delete garden, delete plant) 🡪 DB

My Profile-

* GET (specific information, updated general log) 🡨 DB
* POST (Upload photo) 🡪 DB
* PUT (Update user information) 🡪 DB
* DELETE (delete photo, delete irrelevant information) 🡪 DB

Plant Bible-

* GET (specific plant information) 🡨 DB
* POST (new plant information) [ADMIN] 🡪 DB
* PUT (Update plant information) [ADMIN] 🡪 DB
* DELETE (delete plant information) [ADMIN] 🡪 DB