

# Mandrake Group

Smart Farming System  
project presentation

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The slide features a light teal background with abstract geometric shapes in darker teal and light green at the corners. In the top-left, there's a large dark teal shape and a light green triangle. In the top-right, a small dark teal shape is visible. In the bottom-left, a light green shape and a small dark teal circle are present. In the bottom-right, a large dark teal shape and a light green triangle are shown.

# 01

## Overview



# Purpose

- To monitor temperature, humidity, and light levels while also keeping an eye on potential rain
- To enhance our garden's conditions  
Check whether the humidity is enough, Check light level, Weather Forecast



# Reason

- The weather in Thailand is suitable for agriculture.
- In Thailand there are a lot of garden or park which this device can be use to monitor.

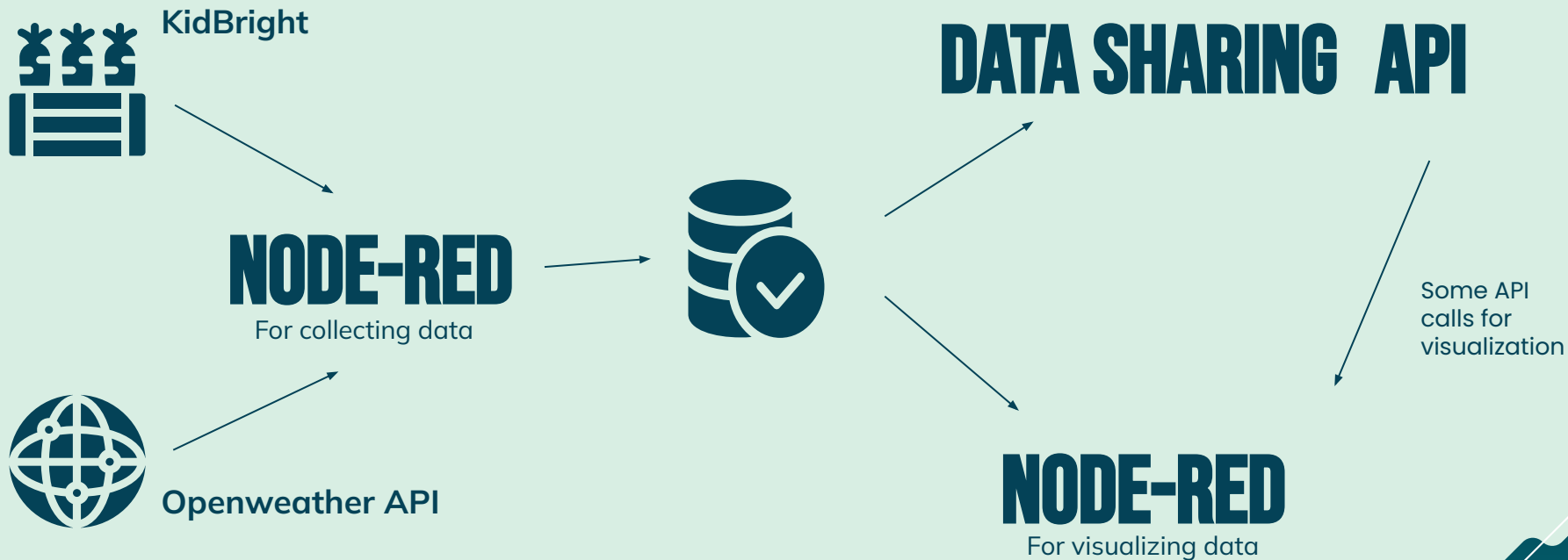


The slide features a light teal background with abstract geometric shapes in darker teal and white in the corners. These shapes include lines, dots, and irregular polygons, some of which are interconnected, creating a modern, architectural feel.

# 02 Overall architecture



# Overall Architecture





# 03 Data Source





# Primary Data



## Soil Moisture Sensors

Check the humidity in the soil



## Temperature Sensor

Check the temperature in the air



## Light Sensor

Check whether the plants get a light source



## Humidity Sensor

Check the air humidity



# Secondary Data

Openweather API


For Rainfall / Weather forecast



```
{
  "cod": "200",
  "message": 0,
  "cnt": 40,
  "list": [
    {
      "dt": 1661871600,
      "main": {
        "temp": 296.76,
        "feels_like": 296.98,
        "temp_min": 296.76,
        "temp_max": 297.87,
        "pressure": 1015,
        "sea_level": 1015,
        "grnd_level": 933,
        "humidity": 69,
        "temp_kf": -1.11
      },
      "weather": [
        {
          "id": 500,
          "main": "Rain",
          "description": "light rain",
          "icon": "10d"
        }
      ]
    }
  ],
}
```

```
"clouds": {
  "all": 100
},
"wind": {
  "speed": 0.62,
  "deg": 349,
  "gust": 1.18
},
"visibility": 10000,
"pop": 0.32,
"rain": {
  "3h": 0.26
},
"sys": {
  "pod": "d"
},
"dt_txt": "2022-08-30 15:00:00"
```





# 04

Database schema used  
for data integration



# Database Schema


## Sensor\_data table

Name	Type	Collation	Attributes	Null	Default	Comments	Extra
id 🗝️	int(11)			No	None		AUTO_INCREMENT
datetime 🗓️	datetime			No	CURRENT_TIMESTAMP		DEFAULT_GENERATED
soil	int(11)			No	None		
humidity	int(11)			No	None		
temperature	int(11)			No	None		
light	int(11)			No	None		
soil_status	text	utf8_general_ci		No			
air_status	text	utf8_general_ci		No			

## Weather\_data table

Name	Type	Collation	Attributes	Null	Default	Comments	Extra
id 🗝️	int(11)			No	None		AUTO_INCREMENT
main	varchar(255)	utf8_general_ci		No	None		
weather	varchar(255)	utf8_general_ci		No	None		
temp	float			No	None		
humidity	float			No	None		
cloud	int(11)			No	None		
ts	datetime			Yes	NULL		
rain	float			Yes	NULL		
time_get 🗓️	datetime			No	CURRENT_TIMESTAMP		DEFAULT_GENERATED





05

# Data sharing API



# Data sharing API

- Github repository

<https://github.com/Hamiz5401/DAQ-Mandrake>





# 06

## Data Visualization & Demonstration of key features

