Project Design Phase-II
Data Flow Diagram & User Stories

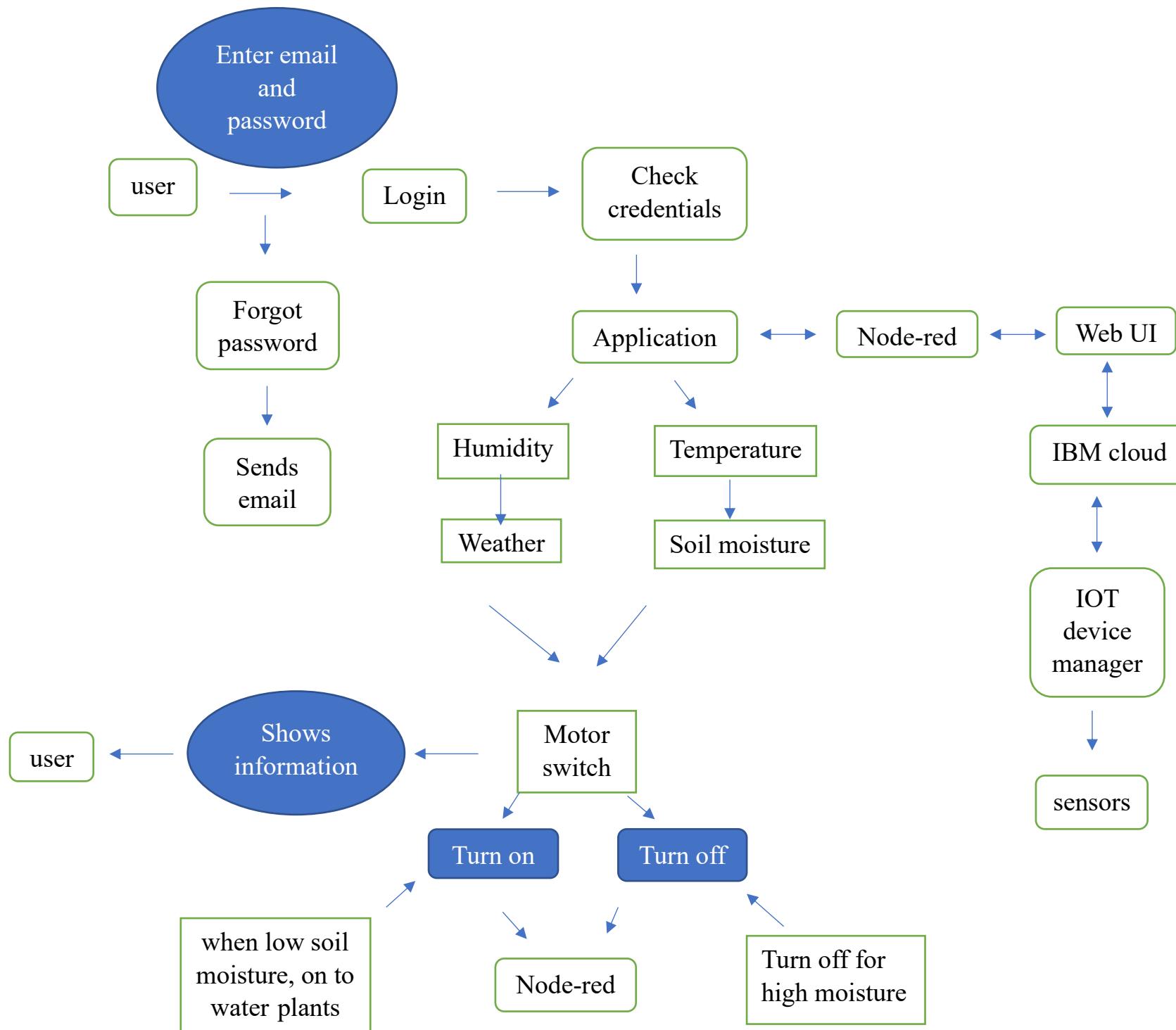| Date	03 October 2022
Team ID	PNT2022TMID04701
Project Name	Smart Farmer-IOT enabled smart farming application
Maximum Marks	4 Marks

Data Flow Diagrams:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

Example: (Simplified)
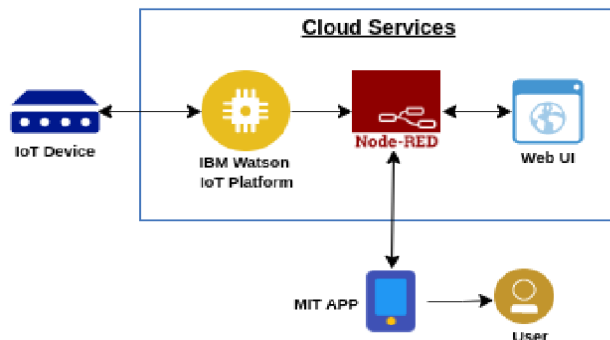
- ➢ Different parameters such as soil moisture, humidity, temperature are measured using sensors.
- ➢ Open weather API provides data about the climatic conditions.
- ➢ Above data are processed with the help of a microcontroller (Arduino uno) which is connected to the internet.
- ➢ These data are then updated to the cloud platform.
- ➢ The IBM Watson IOT platform is connected with Node-red services.
- ➢ Node-Red is a programming tool to write the hardware, software and APIs. The MQTT protocol is used for communication.
- ➢ The data extracted are visible to the used via MIT application.
- ➢ With the help of the application user can interact with the IOT devices.
- ➢ Based on the information obtained user can decide whether to water or not and turning on and off motor.

```
Enter email
and
password

user  →  Login  →  Check
                    credentials
  ↓
Forgot                 ↓
password          Application  ↔  Node-red  ↔  Web UI
  ↓              ↙        ↘                      ↕
Sends       Humidity   Temperature          IBM cloud
email          ↓           ↓                     ↕
            Weather    Soil moisture           IOT
                                              device
                                              manager
                                                ↓
                                              sensors

user  ←  Shows        Motor
         information  switch
                      ↙    ↘
                 Turn on   Turn off
               ↗    ↓        ↓    ↖
when low soil   Node-red   Turn off for
moisture, on to            high moisture
water plants
```

User Stories

Use the below template to list all the user stories for the product.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
		USN-3	As a user, I can register for the application through Facebook	I can register & access the dashboard with Facebook Login	Low	Sprint-2
		USN-4	As a user, I can register for the application through Gmail		Medium	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering email & password		High	Sprint-1
	Dashboard	USN-6	As a user I want to see everything in single widget		Medium	Sprint-2
		USN-7	As a user I want a organised widgets section		High	Sprint-2
		USN-8	As a user I want a graphical/pictorial representation		Low	Sprint-2

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Web User)	Dashboard	USN-9	As a user I want a graphical representation of data for better understanding		High	Sprint-2
		USN-10	As a user I want to see a dashboard where I can customise myself	Dashboard with customisation	Low	Sprint-2
Customer (Mobile and Web)	IoT Device Setup	USN-10	Have to use a least sensor and get better output		High	Sprint-2
		USN-11	As a user, I need a low cost IoT devices for farming		High	Sprint-2
		USN-12	As a user, I need a multiple sensors for various data		High	Sprint-2

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer Care Executive	User Problems	USN-13	As a user, I don't how to use the application	Manual guide will be there	Medium	Sprint-3
		USN-14	As a user, I need my application to work on most of the mobiles		High	Sprint-3
		USN-15	As a user, I am facing issue in the application	Query form will be there	High	Sprint-3
Administrator	Query Clarification	USN-16	As a admin, I give solutions to their queries		High	Sprint-3
	Particular Access	USN-17	As a admin, I give access only to authorised person		High	Sprint-3
	Connection with IoTdevices	USN-18	As a admin, I ensure the correct working of the devices. If any problem arises it will be shared to user		Medium	Sprint-4
Customer (Mobile user)	Application	USN-19	As a user, I need to control my devices	Commands for devices	High	Sprint-4
		USN-20	As a user, I need a events for better productivity		Low	Sprint-4
		USN-21	As a user, I need a more info about plants inside a application		Medium	Sprint-4