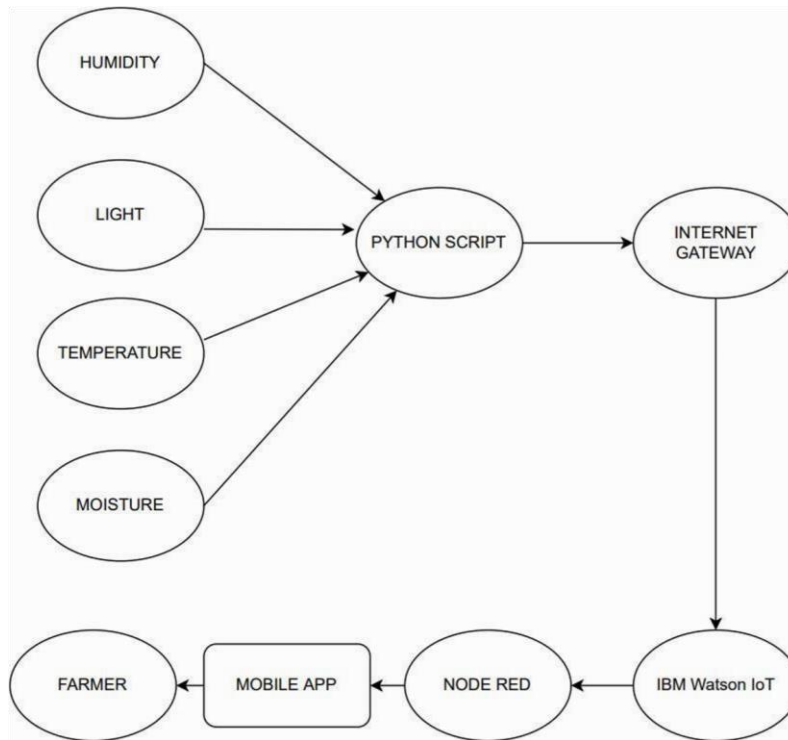


**Project Design Phase-II**  
**Technology Stack (Architecture & Stack)**

|               |   |
|---------------|---|
| Date          | 18 October 2022                                     |
| Team ID       | PNT2022TMID06004                                    |
| Project Name  | SmartFarmer - IoT Enabled Smart Farming Application |
| Maximum Marks | 4 Marks   |

**Technical Architecture:**

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2



**Table-1: Components & Technologies:**

| S.No | Component          | Description   | Technology             |
|------|--------------------|---|------------------------|
| 1.   | GUI                | XML file in MIT APP helps to act as front-end   | XML                    |
| 2.   | Temperature Sensor | The App will process data from sensors in Arduino then it will show it to the user and the user can control it manually | Python                 |
| 3.   | Humidity Sensor    | Python helps us to backend work with the help of Django flask   | IBM Watson STT service |

|     |                        |   |  |
|-----|------------------------|---|--|
| 4.  | Moisture Sensor        | Logic for a process in the application                                    | IBM Watson Assistant   |
| 5.  | Database               | VARCHAR and Int   | MySQL  |
| 6.  | Cloud Database         | Database Service on Cloud   | IBM  |
| 7.  | File Storage           | System Storage  | IBM Block Storage or Other Storage Service or Local Filesystem |
| 8.  | External API-1         | External API s help us to send and receive data from one place to another | REST API, etc.   |
| 9.  | External API-1         | External APIs help us to send and receive data from one place to another  | Arduino API, etc.  |
| 10. | Machine Learning Model | Purpose of Machine Learning Model   | Object Recognition   |
| 11. | Mobile Installation    | Application Deployment on Mobile System                                   | MIT App inventor   |

**Table-2: Application Characteristics:**

| S.No | Characteristics          | Description  | Technology    |
|------|--------------------------|--|---------------|
| 1.   | Open-Source Frameworks   | Python, Arduino.   | Backend works |
| 2.   | Security Implementations | penetration testing using owasp zap  | OWASP         |
| 3.   | Scalable Architecture    | Scale is Tier 2  | Java          |
| 4.   | Availability             | There is good availability of all these because most of them are open-source | Cloud         |
| 5.   | Performance              | Performance is purely based on efficiency and it is 70 %                     | Arduino UNO   |

References: <https://developer.ibm.com/patterns/online/e-order-processing-system-duringpandemic/>  
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