**Project Design Phase-II**

**Technology Stack (Architecture & Stack)**

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| --- | --- |
| Date | 03 October 2022 |
| Team ID | PNT2022TMID07372 |
| Project Name | Project – Smart Waste Management for Metropolitan Cities |
| Maximum Marks | 4 Marks |

**Technical Architecture:**

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

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

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Component** | **Description** | **Technology** |
|  | User Interface | .Web UI, Mobile App | HTML,Python |
|  | Application Logic-1 | To calculate the distance of the truck | Ultrasonic sensors |
|  | Application Logic-2 | To calculate the weight of the garbage bin | Load cell |
|  | Application Logic-3 | Find the location of the bin | GPS Tracker |
|  | Database | Cloud database service | IBM cloud |
|  | Cloud Database | Database Service on Cloud | IBM DB2, IBM Cloudant etc. |
|  | File Storage | File storage requirements | Github |
|  | External API-1 | Purpose of External API used in the application | IBM Weather API, etc. |

**Table-2: Application Characteristics:**

| **S.No** | **Characteristics** | **Description** | **Technology** |
| --- | --- | --- | --- |
|  | Open-Source Frameworks | NodeRed,Python,IBM  Simulator. | IOT |
|  | Security Implementations | Data is fully transferred over internet | IOT |
|  | Scalable Architecture | Node mcu , Sensor for sensing the bin  level , GPS module,ultrasonic sensor | IOT |
|  | Availability | This smart bins uses the components that areeasily available in the market and in low cost . | IOT |
|  | Performance | Good and Enough Speed ,Cost effective | IOT |

**References:**

[**https://c4model.com/**](https://c4model.com/)

[**https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/**](https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/)

[**https://www.ibm.com/cloud/architecture**](https://www.ibm.com/cloud/architecture)

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[**https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d**](https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d)