**Project Design Phase-II**

Technical Architecture

|  |  |
| --- | --- |
| **Date** | 20October2022 |
| **Team ID** | PNT2022TMID23948 |
| **Project Name** | Smart Solution for Railways |

Technical Architecture*:*



Table-1: Components & Technologies:

|  |  |  |  |
| --- | --- | --- | --- |
| S.No | Component | Description | Technology |
| 1 | Web UI | User can login and book their ticket through the website based on the availability of the seats. | HTML, CSS,  JavaScript |
| 2 | Cloud Services | Requirements filled by the passenger is stored in  the cloud database. | Python |
| 3 | GPS Tracking | Live Location details shared through the code to  share the location on the website | IBM Watson Service |
| 4 | External API-1 | Used for rail schedule,  ticketing and travel  documents generation, cancellation. | Sabre API |
| 5 | External API-2 | Used for combining carriers and ticket types,  Multilanguage & currency support. | Trainline B2B API |
| 6 | Data Processing | Ticket is verified with the unique ID generated with  the cloudant DB | Python, IBM cloud |

Table-2: Application Characteristics:

|  |  |  |  |
| --- | --- | --- | --- |
| S.No | Characteristics | Description | Technology |
| 1 | Open-Source  Frameworks | CSS, Backend framework, | Python, IBM cloudant DB |
| 2 | Security  Implementations | Data entered are encrypted, Continuous Location Tracking | Python, Cloud service |
| 3 | Scalable  Architecture | The scanner and the codes written are highly scalable where any implementation can be done anytime needed | Python |
| 4 | Availability | Any time available system.  The ticket can be verified by the ticket collector from anywhere. | IBM Load Balancer |
| 5 | Performance | Though the details are get stored in the cloud the system crash will not affect the data. The data can  be retrieved from anywhere with a scanner. And the GPS states the exact location of the train. | Distributed  Services, GPS  Tracker |