Project Design Phase TechnologyStack(Architecture&Stack)

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| Date | 21October 2022 |
| TeamID | PNT2022TMID08806 |
| ProjectName | Hazardous area monitoring for industrial plant powered by IOT |
| MaximumMarks | 4Marks |

# TechnicalArchitecture:

# 1:Components&Technologies:

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| **S.No** | **Component** | **Description** | **Technology** |
| 1. | UserInterface | Web UI, Mobile App, SMS service and Wearabledevices | Node-RED, Fast sms and MIT Appinventor |
| 2. | ApplicationLogic-1 | Gettinginputfromsmartbeacons | EmbeddedCandPython |
| 3. | ApplicationLogic-2 | Processdataincloud | IBMWatsonIOTplatform,CloudantDBandNode-RED |
| 4. | ApplicationLogic-3 | Displaydatatotheuser | WebUI,FastsmsandMobile  application |
| 5. | Database | Realtimedatabase | CloudantDB |
| 6. | CloudDatabase | DatabaseServiceonCloud | IBMCloudant |
| 7. | ExternalAPI-1 | Tosendsmstouser | FastsmsAPI |
| 8. | ExternalAPI-2 | Languageforthewebsiteiswrittentobedynamic | Google translateAPI |
| 9. | ExternalAPI-3 | Toaccesstime | WorldtimeAPI |
| 10. | SmartBeacon | Tomonitortheareaandupdatethestatsinthecloud | NodeMCUandSensors |
| 11. | Infrastructure(Server/Cloud) | ApplicationDeploymentonCloud | IBMCloud |

**Table-2:ApplicationCharacteristics:**

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| **S.No** | **Characteristics** | **Description** | **Technology** |
| 1. | Open-SourceFrameworks | TheNode-REDopensourceframeworksareusedto build the web application as well as tocommunicate with the mobile application and tohandlealertsms | Node-REDframework |
| 2. | ScalableArchitecture | The3–tierarchitectureusedwithaseparateuserinterface, application tier and data tier makes iteasilyscalable | IBMWatsonStudio |
| 3. | Availability | Thewebapplicationishighlyavailableasitisdeployedincloud | IBMCloud |
| 4. | Performance | Theperformanceofthewebsiteisimprovedwithcachingandsecurity | IBMCloudInternetServices |