**Project Design Phase-IITechnologyStack (Architecture&Stack)**

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| Date | 09May2023 |
| TeamID | NM2023TMID17790 |
| ProjectName | Automated weather classification using transfer learning |

**Technical Architecture:**

TheDeliverableshallincludethearchitecturaldiagramasbelowandtheinformationas perthetable1&table2

**Example: Automated weather classification using transfer learning**

**Reference: Automated weather classification using transfer learning** withIoT-ScienceDirect

**Guidelines:**

**Includealltheprocesses(As anapplicationlogic/TechnologyBlock)**

**Provideinfrastructuraldemarcation(Local/Cloud)Indicate external interfaces (third party API’s etc.)Indicate Data Storage components / servicesIndicate interface to machine learning models (ifapplicable)**

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

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Component** | **Description** | **Technology** |
| 1. | UserInterface | How user interacts with application e.g.WebUI,Mobile App,Chatbotetc. | HTML, CSS, JavaScript / Angular Js /ReactJsetc. |
| 2. | ApplicationLogic-1 | Logicforaprocessintheapplication | Java/Python |

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| 3. | ApplicationLogic-2 | Logicforaprocessintheapplication | IBMWatsonSTTservice |
| 4. | ApplicationLogic-3 | Logicforaprocessintheapplication | IBMWatsonAssistant |
| 5. | Database | DataType, Configurationsetc. | MySQL,NoSQL,etc. |
| 6. | CloudDatabase | DatabaseServiceonCloud | IBMDB2,IBMCloudantetc. |
| 7. | FileStorage | Filestoragerequirements | IBM Block Storage or Other StorageServiceorLocalFilesystem |
| 8. | ExternalAPI-1 | PurposeofExternalAPIusedintheapplication | IBMWeatherAPI, etc. |
| 9. | ExternalAPI-2 | PurposeofExternalAPIusedintheapplication | AadharAPI,etc. |
| 10. | MachineLearningModel | PurposeofMachineLearningModel | ObjectRecognitionModel, etc. |
| 11. | Infrastructure(Server/Cloud) | Application Deployment on Local System / CloudLocalServerConfiguration:  CloudServerConfiguration: | Local,CloudFoundry,Kubernetes, etc. |
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**Table-2:ApplicationCharacteristics:**

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| --- | --- | --- | --- |
| **S.No** | **Characteristics** | **Description** | **Technology** |
| 1. | Open-SourceFrameworks | Listtheopen-sourceframeworksused | TechnologyofOpensourceframework |
| 2. | SecurityImplementations | Listallthesecurity/accesscontrolsimplemented,useoffirewallsetc. | e.g. SHA-256, Encryptions, IAMControls,OWASP etc. |
| 3. | ScalableArchitecture | Justifythescalabilityof architecture(3–tier,  Micro-services) | Technologyused |
| 4. | Availability | Justifytheavailabilityofapplication(e.g. useofloadbalancers,distributed serversetc.) | Technologyused |
| 5. | Performance | Designconsiderationforthe performanceofthe  application(numberofrequestspersec,useofCache, useofCDN’s)etc. | Technologyused |

**References:**

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

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

[**https://aws.amazon.com/architecture**](https://aws.amazon.com/architecture)

[**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)