**Project Design Phase-II**

**Technology Stack (Architecture & Stack)**

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| Date | 18 May 2023 |
| Team ID | NM2023TMID21333 |
| Project Name | Project - Crime Vision: Advanced Crime Classification with Deep Learning |

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

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| --- | --- | --- | --- |
| **S.No** | **Component** | **Description** | **Technology** |
|  | Law enforcement officer | Website that is used to investigate | HTML, CSS, JavaScript |
|  | Evaluation and validation | Assess the performance of the trained models using evaluation metrics such as accuracy, precision, recall, and F1 score. Validate the models on a separate test dataset to ensure their generalization ability. | Java / Python |
|  | Deployment and integration | Once the models achieve satisfactory performance, deploy them into a production environment. Integrate the models into an automated system that can process incoming crime-related data. | Google services |
|  | Continuous improvement | Monitor the system's performance and collect feedback to continuously improve the models. Retrain the models periodically using new labeled data to enhance their accuracy and adaptability to evolving crime patterns. | Google services |
|  | Database | Case files of history of crimes | MySQL, NoSQL, etc. |
|  | Cloud Database | Data service on cloud | IBMDB2, IBM Cloudant |
|  | File Storage | Zip file format | Local File system |
|  | contact | For queries and notification | E-Mail |
|  | Machine Learning Model | RNN and CNN | Object Recognition and Detection Model. |
|  | Infrastructure (Server / Cloud) | Google Cloud service | Local |

**Table-2: Application Characteristics:**

| **S.No** | **Characteristics** | **Description** | **Technology** |
| --- | --- | --- | --- |
|  | Open-Source Frameworks | - Database and Data Management  - Crime Data Processing and Analysis  - Mapping and Visualization  - Security and Authentication | HTML, CSS, javaScript |
|  | Security Implementations | Data not to be sold to third-party service providers and local people | Encryptions |
|  | Scalable Architecture | * Data acquisition layer * Data processing layer * Data storage layer * Application layer | Neural Networks |
|  | Availability | Available on http servers | Google, Microsoft edge etc. |
|  | Performance | This feature had earlier been tested on multiple users | Google |