**Project Initialization and Planning Phase**

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| Date | 01 May 2025 |
| Team ID | 739942 |
| Project Title | CovidVision: Advanced COVID-19 Detection From Lung X-Rays With Deep Learning Using IBM Cloud |
| Maximum Marks | 3 Marks |

**Project Proposal (Proposed Solution) template**

This project proposal outlines a solution to address a specific problem. With a clear objective, defined scope, and a concise problem statement, the proposed solution details the approach, key features, and resource requirements, including hardware, software, and personnel.

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| **Project Overview** | |
| Objective | **To develop deep learning model capable of accurately detecting COVID-19 infections from lung X-ray images, techniques, hosted on IBM Cloud. CovidVision will streamline the diagnosis process, reduce the burden on medical staff, and contribute to early detection and timely treatment of COVID-19 cases.** |
| Scope | The project involves building and training a deep learning model **performance using metrics such as accuracy deploy, and serve the model. It includes data the data COVID-19 positive, normal, other conditions. To upload X-rays and get predictions in real time.** |
| **Problem Statement** | |
| Description | **Early detection and timely treatment of COVID-19 cases infections from lung X-ray images, healthcare professionals with a fast, accurate, and cloud-accessible diagnostic.** |
| Impact | Solving this problem would enhance diagnostic accuracy, reduce doctors’ workload, speed up treatment decisions, leading to earlier intervention and better patient outcomes. |
| **Proposed Solution** | |
| Approach | Develop and train a deep learning model (primarily a CNN) using lung X-ray image datasets. It includes data augmentation, model optimization, performance evaluation and deployment |
| Key Features | **-Automatically detect signs of COVID-19 from chest X-ray images**  **- high accuracy with reduced false positives/negatives.**  **- Integration for radiologists to confirm or correct predictions.** |

**Resource Requirements**

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| **Resource Type** | **Description** | **Specification/Allocation** |
| **Hardware** | | |
| Computing Resources | CPU/GPU specifications, number of cores | e.g., 2 x NVIDIA V100 GPUs |
| Memory | RAM specifications | e.g., 8 GB |
| Storage | Disk space for data, models, and logs | e.g., 1 TB SSD |
| **Software** | | |
| Frameworks | Python frameworks | e.g., Flask, TensorFlow |
| Libraries | Additional libraries | e.g., NumPy, OS |
| Development Environment | IDE, version control | e.g., Google Colab, VS code |
| **Data** | | |
| Data | Source, size, format | e.g., Kaggle dataset, 10,000 images |