**Project Initialization and Planning Phase**

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| Date | 12 JULY 2024 |
| Team ID | 740036 |
| Project Title | Lymphography Classification Using ML |
| Maximum Marks | 3 Marks |

**Project Proposal (Proposed Solution) report**

The proposal report aims to revolutionize the classification of lymphography using machine learning, boosting efficiency and accuracy in diagnostic processes. It tackles system inefficiencies, promising better operations, reduced risks. Key features include a machine learning-based classification model, Real-time processing, Scalability and User-friendly interface.

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| **Project Overview** |  |
| Objective | The primary objective is to develop a machine learning model capable of accurately classifying lymphography reports into distinct categories based on the presence and type of lymph node abnormalities. |
| Scope | The project comprehensively assesses and enhances the model’s performance using standard metrics, implement a user-friendly application for radiologists to use the model in a clinical setting. |
| **Problem Statement** |  |
| Description | Lymphography is a critical diagnostic tool for visualizing the lymphatic system and identifying abnormalities. However, the interpretation of lymphography is complex and subject to variability between radiologist. |
| Impact | Solving these issues will result in improved operational efficiency, reduced risks, and an overall enhancement in reducing human error and inter-radiologist variability. |
| **Proposed Solution** |  |
| Approach | Employing machine learning techniques to analyze and extract relevant features from the records, creating a dynamic and adaptable application which is scalable, secure and easy to use. |
| Key Features | - Implementation of a machine learning-based classification model. |

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|  | * Real-time processing: provides quick classification results to aid timely decision making. * Easy-to-use application for non-technical medical professionals. |



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| **Resource Type** | **Description** | **Specification/Allocation** |
| **Hardware** | | |
| Computing Resources | CPU/GPU specifications, number of cores | T4 GPU |
| Memory | RAM specifications | 8 GB |
| Storage | Disk space for data, models, and logs | 1 TB SSD |
| **Software** | | |
| Frameworks | Python frameworks | Flask |
| Libraries | Additional libraries | scikit-learn, pandas, numpy, matplotlib, seaborn |
| Development Environment | IDE | Jupyter Notebook, pycharm |
| **Data** | | |
| Data | Source, size, format | Kaggle dataset, 614, csv UCI dataset, 690, csv |

**Resource Requirements**