Project Initialization and Planning Phase

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| Date | 22 June 2025 |
| Team ID | SWTID1749918275 |
| Project Title | Bulls Eye Target Detection Using Transfer Learning |
| Maximum Marks | 3 Marks |

**Project Proposal (Proposed Solution) report**

The proposal report aims to transform loan approval using machine learning, boosting efficiency and accuracy. It tackles system inefficiencies, promising better operations, reduced risks, and happier customers. Key features include a machine learning-based credit model and real-time decision-making.

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| **Project Overview** | |
| Objective | To automate bullseye detection and scoring using deep learning and image processing, ensuring accurate, real-time performance feedback to users. |
| Scope | This solution will classify images as “bulls eye” or “not bulls eye” using a CNN model and determine bullseye accuracy using OpenCV's Hough Circle detection. |
| **Problem Statement** | |
| Description | Manual bullseye scoring lacks accuracy and consistency, especially in high-volume or casual practice scenarios. |
| Impact | Automating bullseye scoring improves training efficiency, encourages more engagement in practice, and reduces subjective error. |
| **Proposed Solution** | |
| Approach | * Train a **MobileNetV2-based classifier** to detect bullseye images. * Use **OpenCV Hough Circle detection** to locate the central circle. * Compute **bullseye accuracy percentage** based on the offset from the image center. |
| Key Features | * Transfer learning with MobileNetV2 * Real-time inference using TFLite |

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|  | * Hough Circle-based accuracy computation |

**Resource Requirements**

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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** | | |
| Libraries | Additional libraries | scikit-learn, pandas, numpy, matplotlib, seaborn |
| Development Environment | IDE | Jupyter Notebook |
| **Data** | | |
| Data | Source, size, format | Kaggle dataset |