Project Initialization and Planning Phase

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| Date | 10 july 2024 |
| Team ID | 739716 |
| Project Title | Predicting Baseline Histological staging in HCV patients using ML |
| Maximum Marks | 3 Marks |

# Project Proposal (Proposed Solution) template

**HCV Prediction Framework in Egypt**:

* **Problem Statement**: In Egypt, where HCV is prevalent, healthcare workers need accurate tools to predict HCV infection early.

# Approach:

* + **Dataset**: Real-world data from the National Liver Institute in Egypt (859 patients, 12 features).

# Methodology:

 Two scenarios: one without feature selection and one after feature selection using sequential forward selection (SFS).

 

 Algorithms: Naïve Bayes, random forest (RF), K-nearest neighbor, and logistic regression.

 Hyperparameter tuning for RF.

# Results:

 RF achieved 94.06% accuracy (0.54 s elapsed time).

 [After hyperparameter tuning, accuracy improved to 94.88% using only](https://link.springer.com/article/10.1007/s10115-023-01851-4) [four features](https://link.springer.com/article/10.1007/s10115-023-01851-4)