Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	15 October 2022
Team ID	PNT2022TMID30180
Project Name	A Novel Method for Handwritten Digit Recognition System
Maximum Marks	4 Marks

Table-1: Components & Technologies:

S. No	Component	Description	Technology
1.	Website	User interacts with the prediction model through website to predict the fuel consumption	HTML, CSS, JavaScript / Angular JS / React JS etc.
2.	Cloud Database	The model is provided with data from IBM cloud database	IBM Cloud DB, ibm db (python package)
3.	API	Used to extend the service to other applications	Flask Application
4.	DL and CNN algorithm	Using Neural networks to compute large amount data that trains the model	Deep Learning, Machine Learning, CNN.
5.	Data Pre-processing	Process of converting the raw data set into an clean data set	Dimensionality reduction
6.	Machine learning Model	This model is developed to predict the fuel consumption using ML algorithms	Sklearn, Algorithms - SVM & MLR
7.	Database	Data is pre-processed and used for training the model which is then used for prediction	Pandas, NumPy, Matplotlib

Table-2: Application Characteristics:

S. No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Tensorflow is useful for data automation and MNIST is CV that consists of handwritten digits.	Tensorflow, Keras, Bootstrap, IBM Cloud DB, CNN
2.	Security Implementations	There is no login/sign-up functionality and we don't store users data also this application will run on HTTPS	PORT-443, Encryptions, SSL Certificate
3.	Scalable Architecture	Support for Multiple Sample prediction with accurate output	Pandas, NumPy, CNN.
4.	Availability	Availability is increased by Load Balancers in Cloud VPS	IBM Cloud Hosting
5.	Performance	It will be able to perform and able to serve thousands of users	Convolutional neural networks

Technical Architecture: