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

Date	27 October 2022
Team ID	PNT2022TMID37128
Project Name	Project – A Novel Method Handwritten Digit Recognition system
Maximum Marks	4 Marks

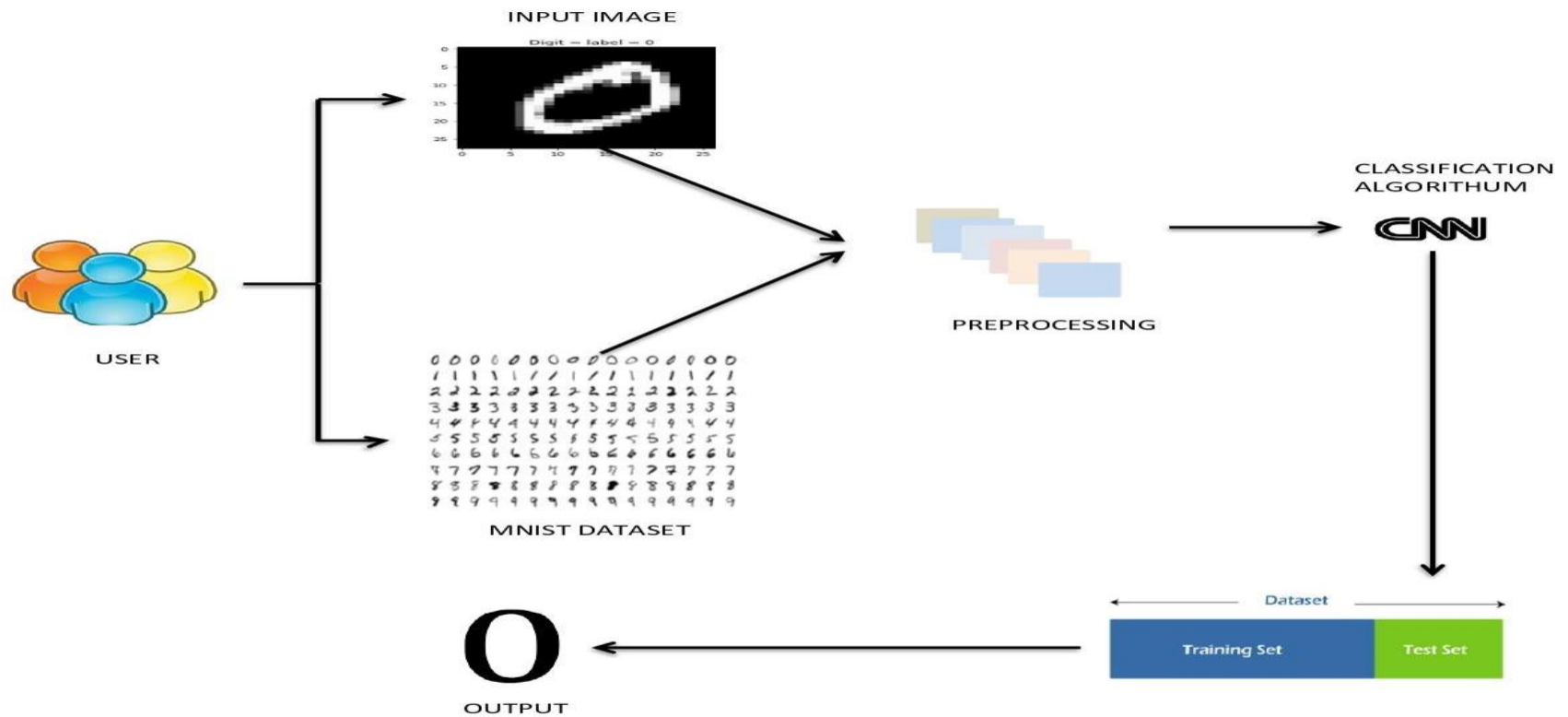**Technical Architecture:**
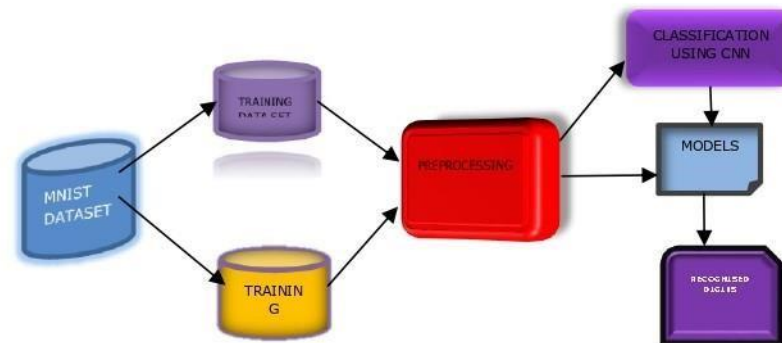
Process flow diagram

Solution Architecture 1

INPUT IMAGE

Digit — label — 0

USER

MNIST DATASET

PREPROCESSING

CLASSIFICATION ALGORITHUM

CNN

Dataset

Training Set   Test Set

O

OUTPUT
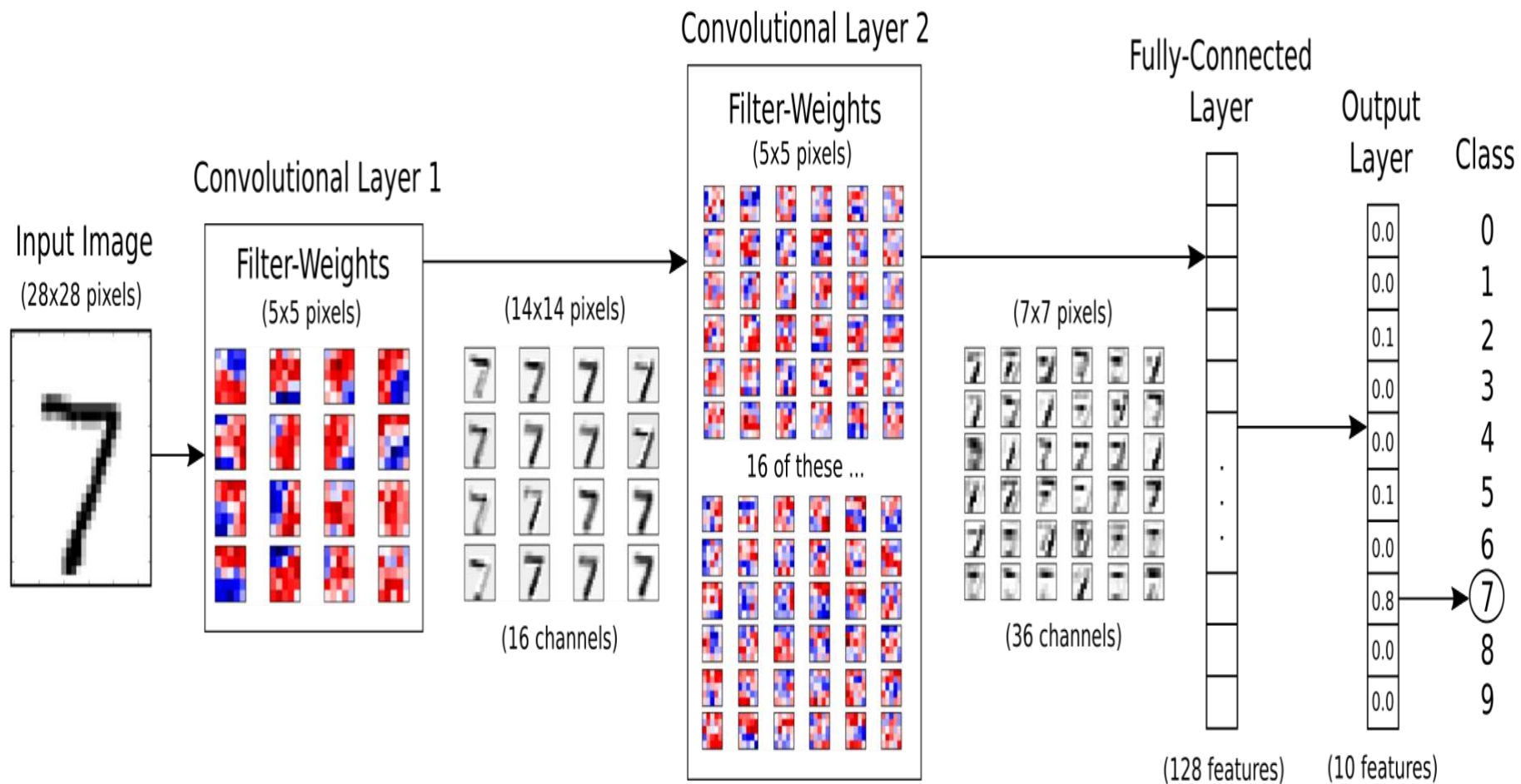
Solution Architecture 2

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	Logic for a process in the application	Java / Python
3.	Application Logic-2	Logic for a process in the application	IBM Watson STT service
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	Purpose of External API used in the application	IBM Weather API, etc.
9.	External API-2	Purpose of External API used in the application	Aadhar API, etc.
10.	Machine Learning Model	Purpose of Machine Learning Model	Object Recognition Model, etc.
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	It make its source code available to others who would like to view that code, copy it, learn from it, alter it, or share it. A software for which the original source code is made freely available and may be redistributed and modified according to the requirement of the user.	Flask
2.	Security Implementations	This system assures all data inside the system or its part will be protected against malware attacks or unauthorized access.	Password and Encryption techniques
3.	Scalable Architecture	Scalability is the capability of a Handwritten recognition system is to handle an enhanced level of operations without constraints or structural bottlenecks	Autoscaling, Load Balancer
4.	Availability	It describes how likely the system is accessible to a user at a given point in time. While it can be expressed as an expected percentage of successful requests, you may also define it as a percentage of time the system is accessible for operation during some time period.	Configuration, Fault Tolerance

S.No	Characteristics	Description	Technology
5.	Performance	It essentially specifies how the system should behave and that it is a constraint upon the systems behaviour.	Corrective Feedback, Performance Management