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

Date	03 October 2022
Team ID	PNT2022TMID35901
Project Name	Natural Disasters Intensity Analysis And Classification Using Artificial Intelligence
Maximum Marks	4 Marks

Technical Architecture
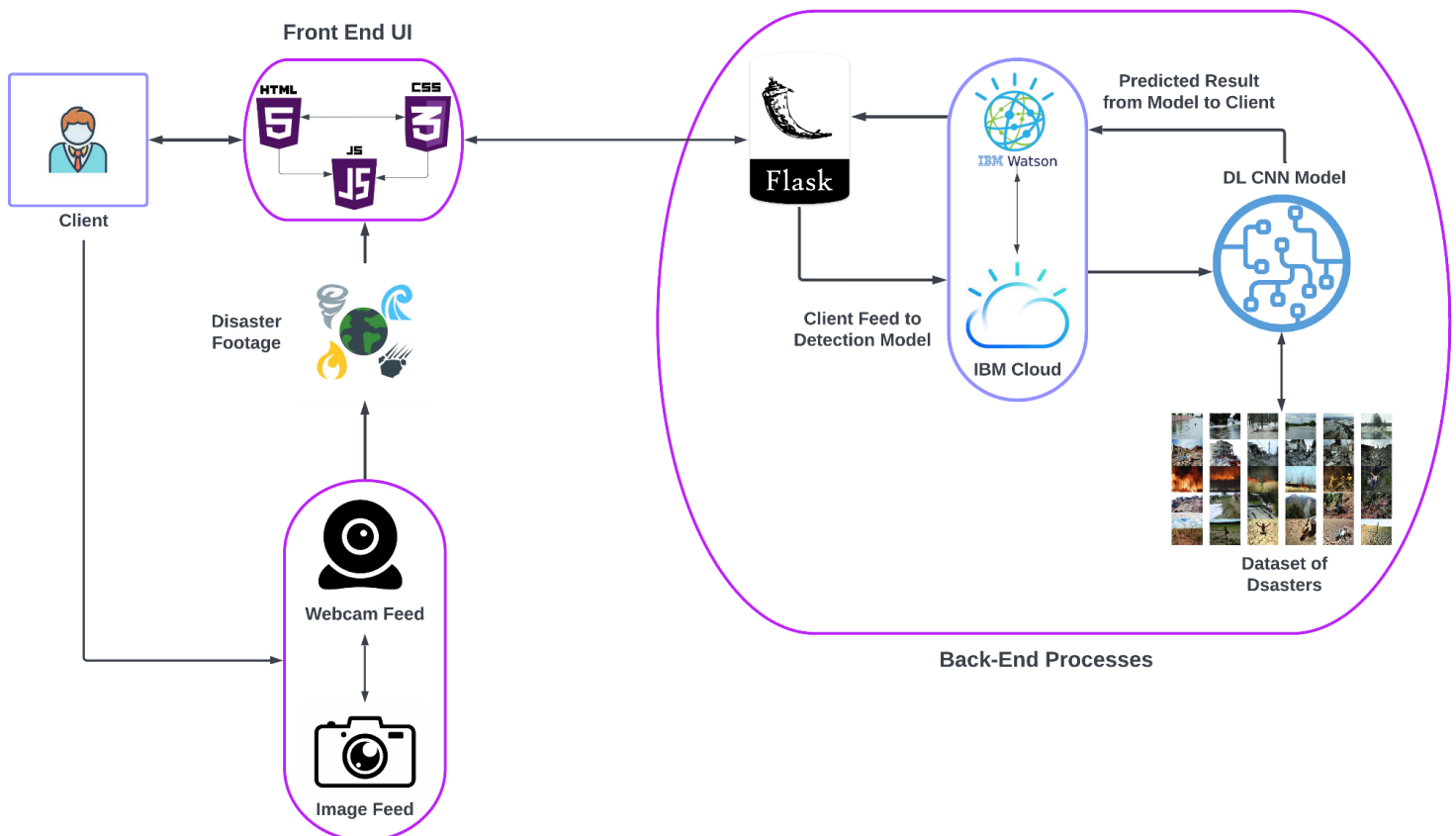
Technology Stack

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	User Interaction through the Web Application	HTML, CSS
2.	Application Logic-1	Client User Interaction	Java/Python
3.	Application Logic-2	Creating the Model	IBM Watson STT service
4.	Application Logic-3	Detecting the Disaster Accurately from feed	IBM Watson Assistant
5.	Database	Data Type - Images and User input details are stored	MySQL, NoSQL, IBM DB2,etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	Storing Dataset Images, User input Footages, and Login informations	IBM Block Storage, IBM Cloud
8.	Machine Learning Model	Purpose of Machine Learning Model is to detect the type and intensity of Natural Disaster that occurs	Object Recognition Model and CNN Model for disaster detection, etc.
9.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Using Flask Cloud Server Configuration : Using IBM Cloud	Python Flask, IBM Cloud

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Open Source frameworks used is IBM Watson	IBM Watson
2.	Security Implementations	Certified Watson Assistant for Encrypted File and Storage systems and Key Management systems	IBM Cloud, IBM Watson
3.	Scalable Architecture	Client Side (Upstream) - Frequent Updates of the static and dynamic UI content to provide smooth user experience Application Level (Downstream) - Addition and Removal of Features in the App based on modified trends and requirements. Datastore - Modifying the database content by feedback Learning from the disaster detections made, to increase the accuracy of the Model	IBM Watson Assistant, Python, Flask
4.	Availability	The Web Application is made to be available round the clock, with negligible down time when overloaded.	IBM Watson Cloud Assistance, Python
5.	Performance	Automating the detection and prediction model to end up giving accurate, and faster results	IBM Watson Assistant