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

Team ID	PNT2022TMID44028
Project Name	Project - Natural Disasters Intensity Analysis and Classification using Artificial Intelligence

Technical Architecture:

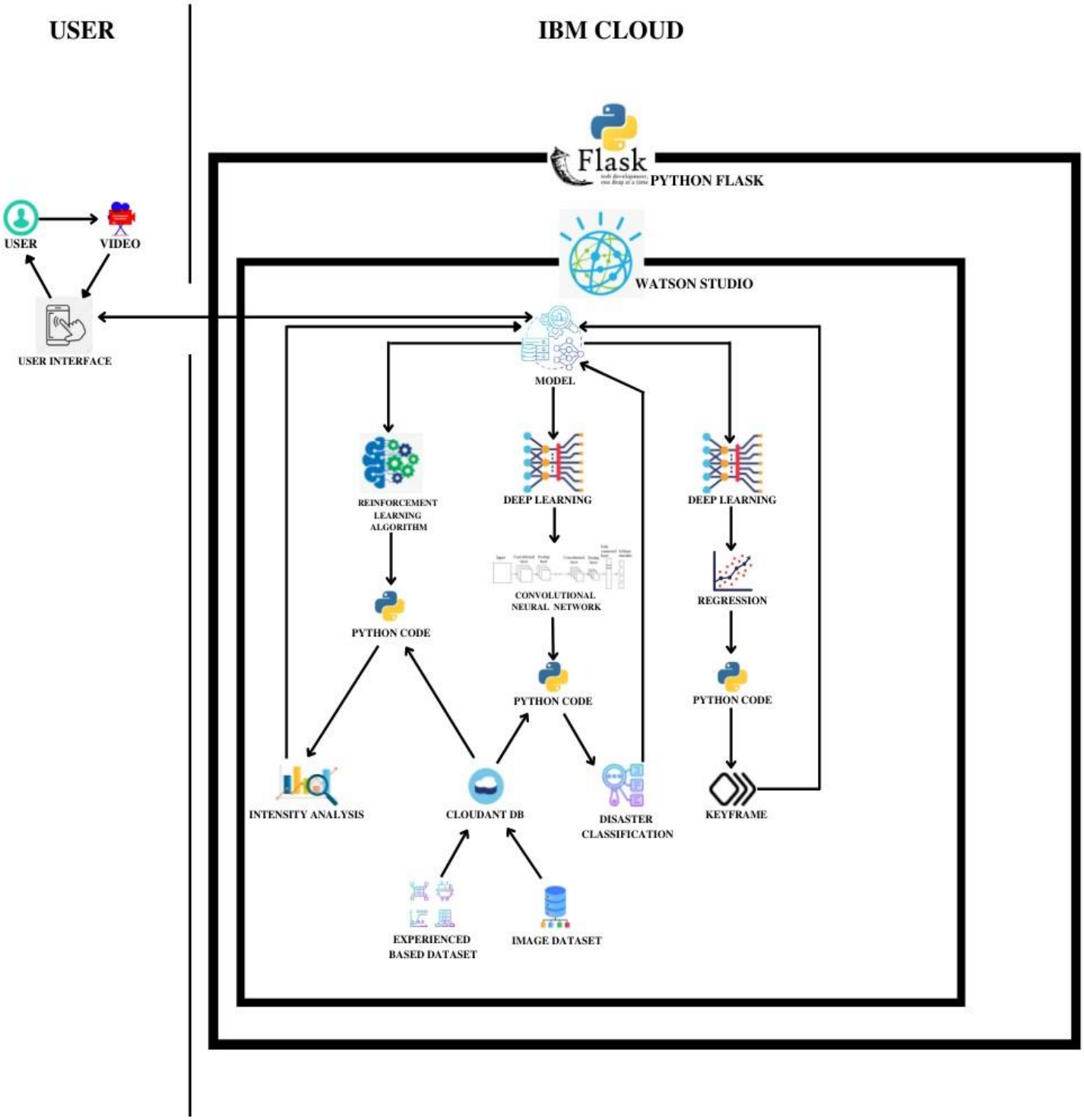

Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	User views the prediction of natural disaster in the website	HTML, CSS, JavaScript etc.
2.	Application Logic-1	Deployment	Python Flask
3.	Application Logic-2	Training, building and testing a Deep Learning Model	IBM Watson Studio
4.	Cloud Database	To store every received input from user	IBM DB2, IBM Cloudant etc.
5.	File Storage	To store datasets	IBM Block Storage
6.	External API-1	To check with the prediction from Model	IBM Weather API, etc.
7.	Machine Learning Model	To classify the natural disaster	Object Recognition Model, Risk Analysis Model, Keyframe Model
8.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Python Flask Cloud Server Configuration: Cloud Foundry	Local, Cloud Foundry

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Python Flask, Tensorflow
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	Model Architecture is a multilayer network reinforcement learning based model
4.	Availability	Justify the availability of application (e.g. use of load balancers, distributed servers etc.)	IBM Watson Studio(easy to access)
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	Python Flask (handles multiple requests)