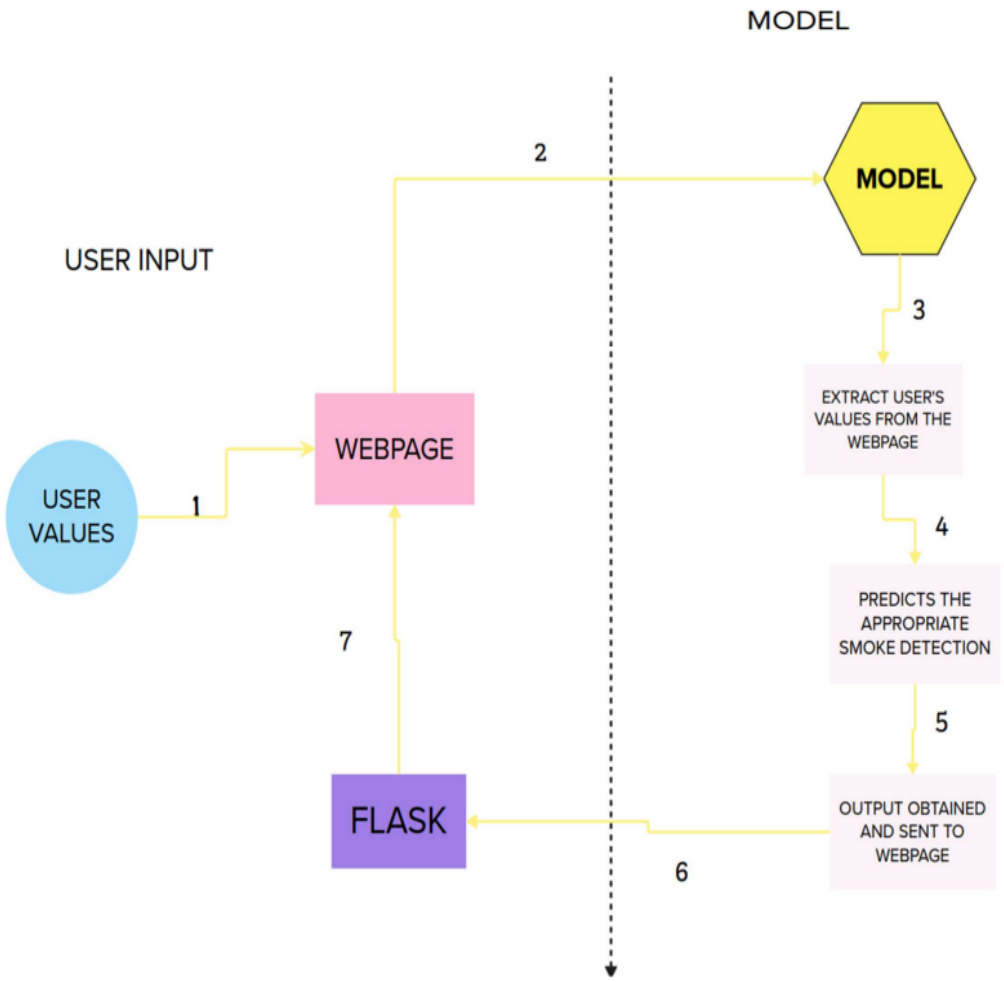
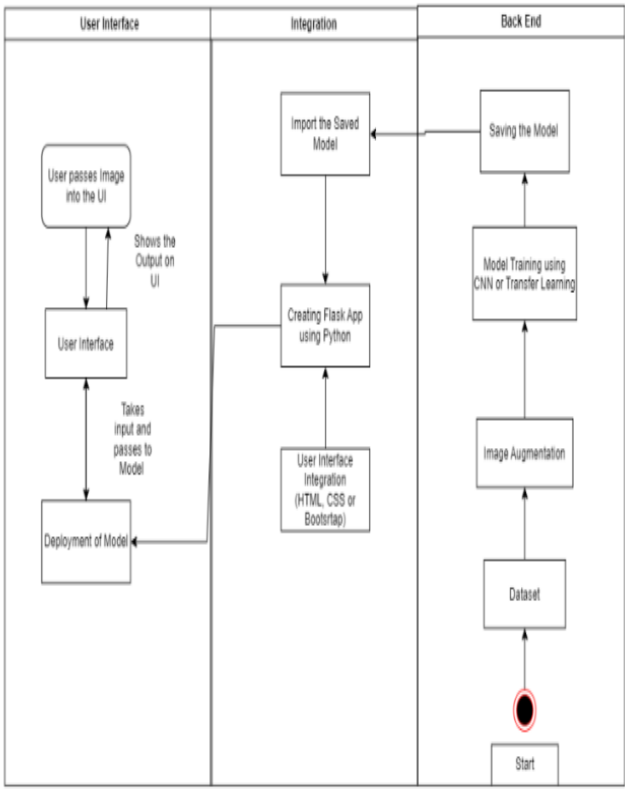
Project Planning Phase

Technology Stack

Date	01/11/2023
Team ID	Team-592631
Project Name	Detect smoke with the help of IOT data and trigger a fire alarm
Maximum Marks	4 Marks

Technical Architecture:





Guidelines:

1. Include all the processes (As an application logic / Technology Block)
2. Provide infrastructural demarcation (Local / Cloud)
3. Indicate external interfaces (third party API's etc.)
4. Indicate Data Storage components / services
5. Indicate interface to machine learning models (if applicable)

Table-1 : Components & Technologies:

S.No.	Component	Description	Technology
1.	User Interface	User interacts with the web interface for inputting data and customizations.	HTML, CSS, Javascript
2.	Application Logic-1	Handles data preprocessing, executes models, and makes decision whether in the web interface.	Python
3.	Application Logic-2	Manages user input, custom scenarios, and real-time alerts in the web interface	Fast API
4.	Database	None	-
5.	Cloud Database	None	-
6.	File Storage	File storage requirements for storing the dataset	Local System
7.	Framework	File storage requirements for storing the dataset	FAST
8.	Machine Learning Model	ML enhances smoke detectors, reducing false alarms, improving fire detection.	Random Forest, Logistic Regression, SVM, K Nearest Neighbours, Ada boosting, Gradient boosting
9.	Infrastructure	Application Deployment on Local System	Local Storage

Table-2: Application Characteristics:

S.No.	Characterstics	Description	Technology
1.	Open-Source Frameworks	The open-source Flask framework supports the smoke detection website, enabling customization and extensibility for precise predictions.	FAST
2.	Security Implementation	Utilizes authentication, encryption, and access controls to safeguard the website and its data	
3.	Scalable Architecture	Adopts FAST to create an adaptable framework for the smoke detection system	FAST
4.	Availability	Can be accessed through a simple domain since it is a web page	Google Domains, GoDaddy,etc
5.	Performance	Response Time, Caching, Network Efficiency, Browser Compatibility	Hard drive, frameworks, APIs, etc