**Project Title: Flood Monitoring System**

**PHASE 1 : Project Definition and Design Thinking**

**Problem**

Loss of lives and property: Immediate impacts of flooding include loss of human life, damage to property, destruction of crops, loss of livestock, non-functioning of infrastructure facilities and deterioration of health condition owing to waterborne diseases.

**Project Definition**

The flood warning system utilizes computer technology, database technology, communication technology, and sensor technology. Powered by IoT technology, rainfall and water levels are monitored and floods are predicted. Early warning of impending flooding can save lives and reduce extensive property damage. Predict potential flood disasters and provide scientific information for effectively preventing flood disasters.

**Design thinking**

1. Project objective:

The flood warning system monitors the weather and water level and issues warnings in order to prevent flood disasters and effectively use water resources. Including data monitoring, transmission, processing and analysis.

1. Iot devices design:

* It is a advanced sensor module with consists of resistive humidity and temperature detection components. The water level is always under observation by a float sensor, which work by opening and closing circuits (dry contacts) as water levels rise and fall.
* The sensor like ultrasonic Sonic sensor, water level sensor.
* Select a microcontroller , like Arduino or ESP32.Ensure it has enough input pins for sensors and supports the chosen communication method.

1. Data sharing platform:

The online storage where the data is kept and analysed. Using platform like AWS IoT or Google cloud IoT.

1. Integration approach:

* Depending on the chosen data sharing platform to configure IoT devices to communicate with that platform specifically.
* Integration might also involves setting up SDKs or libraries specific to the platform on IoT devices to streamline communication.