**FLOOD MONITORING SYSTEM AND EARLY WARNING**

**Problem statement:**

The aim to develop a IOT based water level monitoring and alert the peoples. This system is used to save the peoples from flood.

**Components and uses:**

**Ultrasonic Sensor and styrofoarm ball:**

These sensors are commonly used to measure water levels. Ultrasonic sensors emit sound waves towards water and measure the time it takes to bounce back to the sensor.It calculate the distance to the water surface by the time it take. styrofoarm ball is used when water level increase the ball also float.

**Arduino, Raspberry Pi :**

These microcontroller are used to collect data from sensor and process it.

**Power Supply:**

The location where the the projet is place may determine the mode of power supply. Consider solar panels or lithium battery power for remote locations.

**web Connectivity:**

Wireless technology is used transmit data to a central server.

**Data Processing and alert:**

A cloud platform or server processes and stores the data. You can use tools like Cloud service or a dedicated IoT platform like Things Board. when water level increase the speaker alert the locals with long sound.

**Design step:**

**Sensor Placement:**

FIx the water level sensors at the particular height and locations. make sure they are securely mounted and placed correctly.

**Data Collection:**

The sensors collect data about water levels at certain interval. factors like temperature and atmospheric pressure that can affect the readings.

**Data Transmission:**

Use IoT protocols like HTTPS to transmit the data to a central server.

**Alerts and Notifications:**

Make alerting systems to notify authorities and locals. when water levels reach critical level and make alert noise.

**Data Visualization:**

Create dashboards and graphs to visualize water level data in real-time. government can access these through a web.

**Maintenance:**

Arange a team to inspect and maintain the sensors and communication equipment are good to ensure accurate and reliable data collection.

**Conclusion:**

Flood monitoring and early warning systems have been developed to help prepare and warn people of emanating danger. The systems can help prevent excessive damage and loss as a result of flooding and possibly save lives.