UNIVERSITI TEKNOLOGI MARA

FLOOD DETECTOR WITH IOT NOTIFICATIONS

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ABSTRACT

The introduction of effective early warning systems is imperative due to the substantial danger that floods pose to individuals, assets, and infrastructure. This abstract presents a cutting-edge Internet of Things (IoT)-enabled flood detection system that is intended to provide prompt notifications and alarms in the case of flooding. The system offers a comprehensive approach to flood monitoring by combining real-time communication, complex data processing algorithms, and sensor networks. The flood detector system is made up of multiple sensor nodes that are precisely and continuously monitoring water levels in flood-prone locations. To deliver real-time, exact water level measurements, these sensor nodes use cutting-edge technology such as ultrasonic and pressure sensors. The data gathered by these sensors is then wirelessly transferred to a centralized server for further processing. The advantages this proposed flood detector system offers distinguish it from conventional flood monitoring techniques. It is excellent at detecting floods in real time, cutting down on response times, improving situational awareness, and enabling efficient coordination amongst different parties. By using the potential of IoT technology, this system helps to build more resilient communities while also reducing the effect of flood-related calamities.

Keywords:

- ***Flood Detections: The system's ability to accurately and promptly detect floods.***
- ***IoT Notifications: The integration of IoT for timely alerts and communication.***
- ***Early Warning System: The proactive approach to warning communities about impending floods.***
- ***Real-Time Communication: The system's capability to provide instantaneous updates and alerts.***

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CHAPTER 1

This chapter will provide some background on how the concept for this project came about. This chapter includes the following: background information, goals, problem description, work scope, project significance or contribution, and summary.

1.1 INTRODUCTION

Since floods are a severe natural calamity that can seriously harm infrastructure, communities, and the environment, creative ways to lessen their effects are required. The combination of technology and environmental monitoring has opened new possibilities in disaster management in the age of the Internet of Things (IoT). The creation and application of a state-of-the-art "Flood Detector with IoT Notifications," a technologically advanced solution meant to transform flood monitoring and early warning systems, is examined in this thesis.

The constant increase in the frequency and severity of floods, exacerbated by climate change and urbanization, emphasizes the critical importance of improving our preparedness and response skills. Communities that rely on traditional flood monitoring systems are at risk of severe consequences due to their slow real- time data collecting and communication. As a result, this study aims to harness the potential of IoT technology in order to develop a highly efficient, responsive, and proactive flood detection system.

The basic idea of this thesis is around the incorporation of IoT technology into the realm of flood detection. The potential presented by IoT to link, gather, and evaluate data in real-time from a wide range of sensors and devices is unparalleled and has the potential to completely change how we handle flood management.