

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.

Table of Contents

ABSTR	ACT1
TABLE	OF CONTENTS Error! Bookmark not defined.
СНАРТ	TER 1
1.1	INTRODUCTION4
1.2	BACKGROUND OF STUDY
1.3	PROBLEM STATEMENT8
1.4	OBJECTIVES OF RESEARCH
1.5	SCOPE OF WORK
1.6	PROJECT SIGNIFICANT
СНАРТ	TER 2 LITERATURE REVIEW
2.1	EXISTING KNOWLEDGE
Table	2.1 : Lists of Literature Review
B. Fl	ood Monitoring and Early morning system using UltrasonicSensor
C. Fl	ood Monitoring and Warning System with IoT (Internet OfThings)
D.	Flood Monitoring and Warning System 20
E. Si	nart IoT Flood Monitoring
	-
2.2	THEORETICAL BACKGROUND
2.2 2.2.1	THEORETICAL BACKGROUND
2.2 2.2.1 2.2.2	THEORETICAL BACKGROUND 22 Arduino Uno R3 22 Internet Of Things (IoT) : Blynk 23
2.2 2.2.1 2.2.2 2.2.2 2.2.3	THEORETICAL BACKGROUND 22 Arduino Uno R3 22 Internet Of Things (IoT) : Blynk 23 RainSensor 25
2.2 2.2.1 2.2.2 2.2.2 2.2.3 2.2.5	THEORETICAL BACKGROUND 22 Arduino Uno R3 22 Internet Of Things (IoT) : Blynk 23 RainSensor 25 Liquid Crystal Display (LCD) 27
2.2 2.2.1 2.2.2 2.2.3 2.2.5 2.2.6	THEORETICAL BACKGROUND 22 Arduino Uno R3 22 Internet Of Things (IoT) : Blynk 23 RainSensor 25 Liquid Crystal Display (LCD) 27 Light Emitting Diode (LED) 28
2.2 2.2.1 2.2.2 2.2.3 2.2.5 2.2.6 2.2.7	THEORETICAL BACKGROUND22Arduino Uno R322Internet Of Things (IoT) : Blynk23RainSensor25Liquid Crystal Display (LCD)27Light Emitting Diode (LED)28Buzzer29
2.2 2.2.1 2.2.2 2.2.3 2.2.5 2.2.6 2.2.7 2.2.8	THEORETICAL BACKGROUND22Arduino Uno R322Internet Of Things (IoT) : Blynk23RainSensor25Liquid Crystal Display (LCD)27Light Emitting Diode (LED)28Buzzer29ESP3230
2.2 2.2.1 2.2.2 2.2.3 2.2.5 2.2.6 2.2.7 2.2.8 SUMN	THEORETICAL BACKGROUND22Arduino Uno R322Internet Of Things (IoT) : Blynk23RainSensor25Liquid Crystal Display (LCD)27Light Emitting Diode (LED)28Buzzer29ESP32301ARY30
2.2 2.2.1 2.2.2 2.2.3 2.2.5 2.2.6 2.2.7 2.2.8 SUMM CHAPT	THEORETICAL BACKGROUND 22 Arduino Uno R3 22 Internet Of Things (IoT) : Blynk 23 RainSensor 25 Liquid Crystal Display (LCD) 27 Light Emitting Diode (LED) 28 Buzzer 29 ESP32 30 MARY 30 THEORETICAL BACKGROUND 21
2.2 2.2.1 2.2.2 2.2.3 2.2.5 2.2.6 2.2.7 2.2.8 SUMM CHAPT 3.2	THEORETICAL BACKGROUND 22 Arduino Uno R3 22 Internet Of Things (IoT) : Blynk 23 RainSensor 25 Liquid Crystal Display (LCD) 27 Light Emitting Diode (LED) 28 Buzzer 29 ESP32 30 MARY 30 PROJECT DESIGN 32
2.2 2.2.1 2.2.2 2.2.3 2.2.5 2.2.6 2.2.7 2.2.8 SUMN CHAPT 3.2 3.3	THEORETICAL BACKGROUND 22 Arduino Uno R3 22 Internet Of Things (IoT) : Blynk 23 RainSensor 25 Liquid Crystal Display (LCD) 27 Light Emitting Diode (LED) 28 Buzzer 29 ESP32 30 MARY 30 PROJECT DESIGN 32 FLOWCHART 33
2.2 2.2.1 2.2.2 2.2.3 2.2.5 2.2.6 2.2.7 2.2.8 SUMN CHAPT 3.2 3.3 3.3.2	THEORETICAL BACKGROUND 22 Arduino Uno R3 22 Internet Of Things (IoT) : Blynk 23 RainSensor 25 Liquid Crystal Display (LCD) 27 Light Emitting Diode (LED) 28 Buzzer 29 ESP32 30 MARY 30 TER 3 31 PROJECT DESIGN 32 FLOWCHART 33 L Design of the Flowchart 33
2.2 2.2.1 2.2.2 2.2.3 2.2.5 2.2.6 2.2.7 2.2.8 SUMM CHAPT 3.2 3.3 3.3.2 3.3.2	THEORETICAL BACKGROUND 22 Arduino Uno R3 22 Internet Of Things (IoT) : Blynk 23 RainSensor 25 Liquid Crystal Display (LCD) 27 Light Emitting Diode (LED) 28 Buzzer 29 ESP32 30 MARY 30 TER 3 31 PROJECT DESIGN 32 FLOWCHART 33 Pesign of the Flowchart 33 Plowchart Of The Process 34
2.2 2.2.1 2.2.2 2.2.3 2.2.5 2.2.6 2.2.7 2.2.8 SUMN CHAPT 3.2 3.3 3.3.2 3.3.2 1.	THEORETICAL BACKGROUND22Arduino Uno R322Internet Of Things (IoT) : Blynk23RainSensor25Liquid Crystal Display (LCD)27Light Emitting Diode (LED)28Buzzer29ESP3230MARY30TER 331PROJECT DESIGN32FLOWCHART331Design of the Flowchart332Flowchart Of The Process34Discuss the project with supervisor35

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.