INTISARI

SISTEM PENGAWASAN KETINGGIAN AIR UNTUK MENDETEKSI BANJIR dan MITIGASI BENCANA BANJIR MELALUI SMS BERBASIS ARDUINO UNO

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Sistem peringatan banjir dini merupakan sesuatu yang penting bagi masyarakat Indonesia karena negara ini memiliki curah hujan yang tinggi. Pada saat ini, sistem peringatan banjir telah berkembang seiring dengan adanya perkembangan teknologi yang canggih. Seperti adanya sistem pengawasan ketinggian air untuk mendeteksi banjir dan mitigasi bencana banjir melalui SMS berbasis Arduino Uno. Saat ini banyak orang yang khawatir banjir akan datang pada rumahnya saat bepergian jauh, karena banjir bisa datang kapan saja. Maka dirancanglah suatu sistem pengawasan ketinggian air untuk mendeteksi banjir dan mitigasi bencana banjir melalui SMS berbasis Arduino Uno.

Desain alat ini terdiri dari power supply, rangkaian water level sensor utama dan water level sensor pompa, IComSat V1.1 GSM module, rangkaian driver pompa, rangkaian driver power, dan Arduino UNO. Sensor water level ini akan mendeteksi ketinggian air melalui ic komparator LM 393n yang akan memberikan output digital. Dalam alat ini pengendali sistemnya yaitu Arduino UNO.

Keluaran dari alat ini saat level 1 yaitu berupa *SMS* yang akan dikirim oleh IcomSat v1.1, lalu buzzer. Saat level 2 yaitu *SMS* dan mengaktifkan driver pompa sampai air penuh dan mengenai water level sensor pompa. Sementara saat level 3 alat akan mengirim *SMS* dan memutus semua aliran listrik termasuk kedalam sistem.

Kata kunci : Water level sensor, sistem peringatan banjir, LM 393

ABSTRACT

CONTROL WATER LEVEL SYSTEM FOR FLOODS DETECTION AND THE MITIGATION VIA SMS BASED ON ARDUINO UNO.

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Early flood warning system is something that is important for the people of Indonesia because this country has high rainfall. At this time, the flood warning system has been developed along with the development of technology. Such as, the water level monitoring system to detect and mitigate the flooding through SMS based on Arduino Uno. Nowadays, many people are worried about the floods will come at his home while they traveling away, because floods can come anytime. So, designed a water level monitoring system to detect and mitigate the flooding through SMS based on Arduino Uno.

This tool design consists of a power supply, a series of major water level sensor and pump water level sensor, IComSat V1.1 GSM module, driver circuit pump, power driver circuit, and the Arduino UNO. The water level sensor detects the water level via ic comparator LM 393n which will provide digital output. In this tool, the controling system is Arduino UNO.

The output from this tool is SMS that will be sent by IcomSat v1.1, and then the buzzer when in the level 1. While in the level 2, SMS will be sent and also enabling the pump driver until it fulled and contact with water level sensor pumps. In the level 3, tool will send SMS and cut all streams electricity that included into the system.

Keywords: Water level sensor, flood warning system