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DESIGN AND DEVELOPMENT OF A WIRELESS QUEUING SYSTEM

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ABSTRACT

This study aims to provide a solution to a physical queue in some service departments of Adventist University of the Philippines using a wireless queuing system that is easy to manage, flexible, easy to install and it has low power consumption. The wireless queuing system is divided into hardware and system software. The hardware consists of two section, controller section, and a receiver section. The controller section has four controllers which are responsible for setting and transmitting queue numbers. The receiver section is responsible for receiving the data, data processing, and displaying queue numbers in display monitor. Each counter controller is powered by an Atmega 328P microcontroller, a single radio transceiver that operates at 2.5 GHz frequency, a 32-character liquid crystal display, and a 12-button keypad. While the receiver is powered by a single-board computer Raspberry Pi 2, Atmega 328P microcontroller, single radio transceiver and it is connected to a display that has an HDMI (High-Definition Multimedia Interface) input. The implementation of the system software is classified into four parts: the receiver device configurations, the graphical user interface (GUI), the controller and the receiver. These software divisions complement each other to create a functional queuing system. The wireless queuing system is also capable of posting advertisements to promote ideas, products, and services.

Keywords: Queue, Wireless, Controller, Receiver

