

Designing Time and Running Text With LED Matrix P 10 Using Arduino Uno Microcontroller

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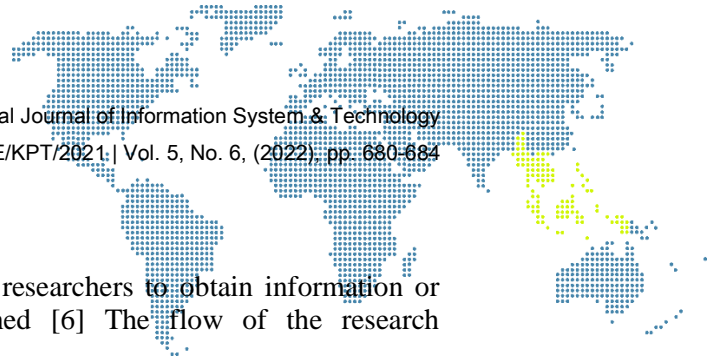
Abstract

A running text is one of the media for promotion or we can call it advertising media where the writing will run and repeat. This running message or running text is very useful and helpful for someone who wants to promote a business that is running. For that date, it can be needed and a tool that is easily assembled is needed. The author made it entitled Design of Time and Running Messages with LED Matrix P 10 Using Arduino Uno. With this tool, it can be easier to promote something by displaying a running message, and this tool can also display the desired day, date, month, year.

Keywords: Time, Running Text Message, Led Matrix P 10, Arduino Uno

1. Introduction

Running messages are one of the electronic media that can be used to do promotions or we can call them advertising media where the writing or message will run and play or repeat. This running message or running text is very useful and can help someone who wants to do something. promotion of the business undertaken. The author is looking for some examples of titles from journal references which include [1] Design of Running Text Led Display Prayer Time Schedules Based on Arduino Uno as a Media Information that this tool was built using Arduino programming and also uses a server so that data input and output can be known by the user. [2] Coordination of the Android-based LED Running Text Display that the stable voltage and current is increasing according to the output displayed on the running text required on the system can be used to increase the accuracy of running text data from the electrical side by applying the sophistication of Android. [3] The design of the running text using the Arduino Uno-based LED Matrix P10 module at the engineering faculty of the Pgri Banyuwangi university that this tool was built using Arduino programming and also uses an Android smartphone application so that data input and output can be known by the user. [4] Designing a Led Dot Matrix Display Via Wi-Fi Using an Android Mobile Application that this result is influenced by the time of sending text, where sending texts during the day has a greater potential for text transmission failure than sending texts in the morning or evening. [5] Training on making running text based on matrix display led using HD-U6A that the results of the activities that have been described, this activity has been carried out well and in accordance with the expected goals. Based on the background and understanding along with the benefits of running messages or running texts, several examples have been obtained from the literature, so the authors designed the title of this research with the title Designing Running Time and Messages (Running Text) With LED Matrix P10 Using Arduino Uno Microcontroller.



2. Research Methodology

Research method is a method or steps used by researchers to obtain information or data and make observations on the data obtained [6] The flow of the research methodology as shown below.

2.1. Research Stages

Research stages are levels in a research activity. Where the stages have processes that are used and carried out in an organized manner [7].

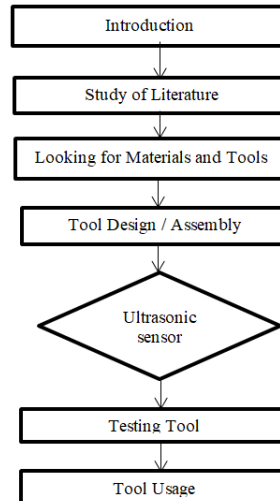


Figure 1. Research Stages

Figure 1 shows the stages or steps of research with a process or flow, the first is to understand the background, after that do a search with several literature studies from various journals, various references to the benefits and objectives of this tool design, then you can start assembling the tool using Arduino Uno, if it has been designed, can be tested for the tool, if it has been tested and already knows whether there is an error from the tool or not, then the tool can be used optimally which is useful for information media or promotional media.

2.2. Research Instrumentation

- Searching for literature on designing running time and messages (Running Text) with LED Matrix P 10 using arduino uno.
- Testing is done by testing or testing the usefulness of the tool repeatedly and also using the Arduino Uno IDE 1.8.15 sketch application.
- The tool designed is to use an Arduino Uno microcontroller, RTC DS3231 module, jumper cable, USB cable as a connector and power flow using electricity.

2.3. Understanding Running Text

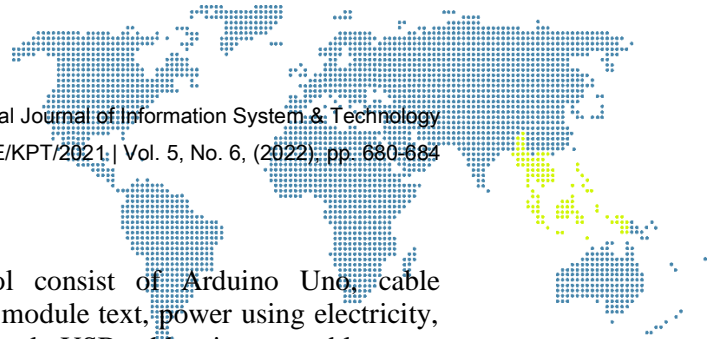
Electronic media that is very useful for conveying messages and information that can also be used as a means of advertising [8].

2.4. Understanding the DS3231 RTC Module

DS3231 Real Time clock is useful for setting time: hour, day, date, month, year. The RTC DS3231 module is a type of module which functions as an RTC (Real Time Clock) or digital timing as well as the addition of a temperature measuring feature that is packaged into 1 module [9].

2.5. Understanding Arduino Uno

Arduino Uno is a type of electronic board, users can connect the Arduino Uno Board to a computer using a USB cable to a DC-adaptor or a battery to run [10].



2.6. Hardware and Software Specifications

The specifications for the manufacturing tool consist of Arduino Uno, cable connectors, the appearance of the P 10 matrix LED module text, power using electricity, along with the cables needed to connect the tools, namely USB cables, jumper cables.

Table 1. Hardware Specifications

Type	Tool
Microcontroller	Arduino Uno
Timing	DS3231 Real Time Clock
Cable Connector	Dmd LED P10 Connector
Text of Appearance	LED Matrix Module P 10
Cable	Jumper Cable Male to Female, USB Cable
Input/Output	Laptop, Monitor, Keyboard, Mouse, CPU
Flow Power	Electricity

Software specifications such as operating systems, Arduino IDE 1.8.15 software for programs on the Arduino microcontroller.

Table 2. Software Specification

Type	Software
Operating System	Windows 7 Pro 32bit operating system,
Processor + RAM	Intel inside
Software Sketch Mikrokontroler	Arduino IDE 1.8.15

3. Results and Discussion

3.1. Activity Activities / Block Diagram

Activities or block diagrams are the initial process in the formation of the diagram so that the work can be more clear and detailed. Below is a block diagram of the Design of Running Time and Messages (Running Text) With LED Matrix P 10 Using Arduino Uno Microcontroller.

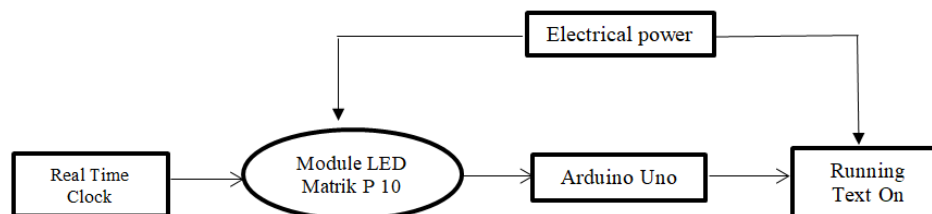


Figure 2. Activities / Block Diagram

The explanation from Figure 2 is a block diagram where the beginning of the process when the tool will work using the Arduino Uno microcontroller, using electric power, then the running text will issue displaying the running time and message that has been set in advance.

3.2. Tool Design

Tool design is an assembly process that is made and can be used as a promotional medium and can save costs in assembling tools for the manufacturing process. Below is a picture of the design of the tool that has been made.



Figure 3. Tool Design

In Figure 3 above is the design of the tool that has been assembled and can be used by the user.

3.3. Tool Design Results

The result of tool design is the overall result of a tool that has been finished and has been used where all devices and a series of tools have been arranged and have been formed, if the running text is connected to the electricity, the tool will issue, display a running message that fits the needs and has been configured. set or set at the beginning of creation.



Figure 4. Results of Tool Design

Figure 4 above is the result of the overall tool if the tool can be used, to assist in promotional media, advertising media and information media to make it visible, readable by others.

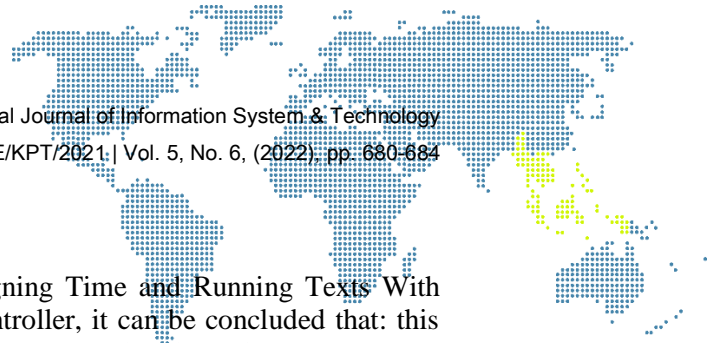
3.4. Testing Tool

Tool testing is the last process to test or test the tool, whether the assembled tool is appropriate and running well.



Figure 5. Testing Tools

In Figure 5 it is done using a laptop that is connected to the device or to the running text with a USB cable connection so that it can be connected and tested whether the tool is suitable and can be used properly.



4. Conclusion

Based on the results of the discussion on Designing Time and Running Texts With LED Matrix P 10 Using the Arduino Uno Microcontroller, it can be concluded that: this tool is designed to be able to assist in advertising or promotional media that serves to convey messages that can be used as information to many people.

Greetings Thank You

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