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Medicine Reminder Pill Box

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Abstract: ***The IoT-based Medicine Pill Reminder system is designed to help individuals take their medications on time through automated alerts. It uses an ESP8266 NodeMCU microcontroller to manage reminder schedules and trigger a buzzer at the specified time. Unlike traditional pill dispensers, this system focuses only on providing timely notifications without handling medicines. It also includes health monitoring features such as a contactless temperature sensor and a heart rate sensor. A mobile application allows users to set reminders and track their health data in real time. The system uses Wi-Fi for communication between hardware and the app. Its compact design makes it easy to use and reliable.***
Keywords: IoT, Medicine Reminder, ESP8266 NodeMCU, Health Monitoring, Heart Rate Sensor, Temperature Sensor, Mobile Application, Wi-Fi Communication.

I. INTRODUCTION

In Today's Fast-Paced World, Ensuring Adherence To Medication Schedules Is Crucial For Maintaining Health And Managing Chronic Illnesses. However, Many Individuals, Particularly The Elderly And Those With Busy Schedules, Often Forget To Take Their Prescribed Medicines On Time. This Challenge Necessitates An Efficient And Reliable Solution To Remind Individuals About Their Medication Without The Complexities Of Handling Physical Medicine. To Address This Issue, An Iot-Based Medicine Pill Reminder System Has Been Developed, Which Focuses Solely On Providing Timely Reminders Using A Buzzer While Integrating Additional Health-Monitoring Capabilities. The Proposed System Is Designed To Provide An Effective Way To Remind Users To Take Their Medications On Time Through An Automated Notification Mechanism. Unlike Traditional Pill Dispensers, Which Involve Physical Compartments For Storing Medicine, This System Solely Focuses On Alerts Without Physical Medicine Handling. The Core Functionality Of This System Is Based On An Esp8266 Nodemcu Microcontroller, Which Is Responsible For Processing Reminder Notifications And Triggering A Buzzer At Scheduled Intervals. Users Can Set Their Medication Schedules Through An Android-Based Mobile Application, Which Communicates With The Microcontroller To Ensure Timely Reminders. The Buzzer Serves As An Audible Alert, Ensuring That The User Is Notified When It Is Time To Take Their Medicine.

Beyond The Reminder Functionality, The System Is Equipped With Various Health-Monitoring Sensors That Enhance Its Capabilities. A Contactless Temperature Sensor Is Integrated To Monitor The User's Body Temperature, Eliminating The Need For Direct Skin Contact While Ensuring Accurate Readings. Additionally, A Heart Rate Sensor Is Included To Provide Real-Time Heart Rate Tracking, Helping Users Keep A Check On Their Cardiovascular Health. These Sensors Offer 4 Valuable Health Insights That Can Aid Individuals In Monitoring Their Vital Signs Alongside Their Medication Adherence. The System Is Designed To Be Compact And Efficient, With The Microcontrollers And Sensors Housed Within A Permanently Fitted Plastic Case. This Ensures Durability And Ease Of Use While Maintaining A Streamlined Structure. The Android Application Serves As The Primary Interface For Users, Allowing Them To Configure Their Medication Schedules, View Real-Time Health Data, And Receive Alerts When Their Vitals Deviate From Normal Levels. Furthermore, The System Incorporates Additional Functionalities Such As Ecg Monitoring, Weather Forecasting, And Adaptive Headlight Control Based On Distance And Light Intensity, Making It A Multifunctional Health And Safety Monitoring Solution. By Integrating Medicine Reminders With Health Monitoring, This Iot-Based System Aims To Provide A Comprehensive Solution For Individuals Who Require Regular Medication And Vital Tracking. The System Eliminates The Dependency On Physical Pill Dispensers While Ensuring That Users Receive Timely Reminders And Real-Time Health Insights. The Combination Of A User Friendly Mobile Application, Reliable Microcontroller-Based Hardware, And Advanced Sensor Technology Makes This An Efficient And Practical Solution For Improving Medication Adherence And Personal Health Monitoring.

II. PAGE LAYOUT

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Recommended font sizes are shown in Table 1.

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Title must be in 24 pt Regular font. Author name must be in 11 pt Regular font. Author affiliation must be in 10 pt Italic. Email address must be in 9 pt Courier Regular font.

TABLE I
FONT SIZES FOR PAPERS

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9	author email address (in Courier), cell in a table	abstract body	abstract heading (also in Bold)
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All title and author details must be in single-column format and must be centered.
Every word in a title must be capitalized except for short minor words such as “a”, “an”, “and”, “as”, “at”, “by”, “for”, “from”, “if”, “in”, “into”, “on”, “or”, “of”, “the”, “to”, “with”.
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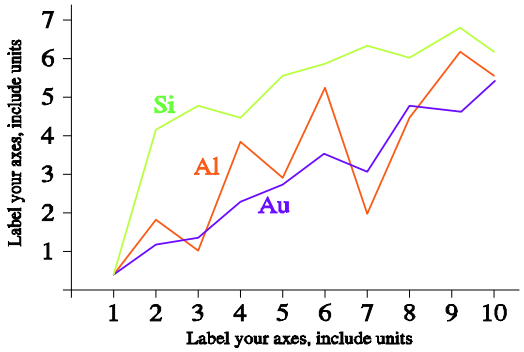


Fig. 1 A sample line graph using colors which contrast well both on screen and on a black-and-white hardcopy

Fig. 2 shows an example of a low-resolution image which would not be acceptable, whereas Fig. 3 shows an example of an image with adequate resolution. Check that the resolution is adequate to reveal the important detail in the figure.
Please check all figures in your paper both on screen and on a black-and-white hardcopy. When you check your paper on a black-and-white hardcopy, please ensure that:

- the colors used in each figure contrast well,
- the image used in each figure is clear,
- all text labels in each figure are legible.

E. Figure Captions

Figures must be numbered using Arabic numerals. Figure captions must be in 8 pt Regular font. Captions of a single line (e.g. Fig. 2) must be centered whereas multi-line captions must be justified (e.g. Fig. 1). Captions with figure numbers must be placed after their associated figures, as shown in Fig. 1.



Fig. 2 Example of an unacceptable low-resolution image



Fig. 3 Example of an image with acceptable resolution

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Tables must be numbered using uppercase Roman numerals. Table captions must be centred and in 8 pt Regular font with Small Caps. Every word in a table caption must be capitalized except for short minor words as listed in Section III-B. Captions with table numbers must be placed before their associated tables, as shown in Table 1.

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Examples of reference items of different categories shown in the References section include:

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- example of a website in [6]
- example of a web page in [7]
- example of a databook as a manual in [8]
- example of a datasheet in [9]
- example of a master's thesis in [10]
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IV. CONCLUSIONS

The version of this template is V2. Most of the formatting instructions in this document have been compiled by Causal Productions from the IEEE LaTeX style files. Causal Productions offers both A4 templates and US Letter templates for LaTeX and Microsoft Word. The LaTeX templates depend on the official IEEEtran.cls and IEEEtran.bst files, whereas the Microsoft Word templates are self-contained. Causal Productions has used its best efforts to ensure that the templates have the same appearance.

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V. ACKNOWLEDGMENT

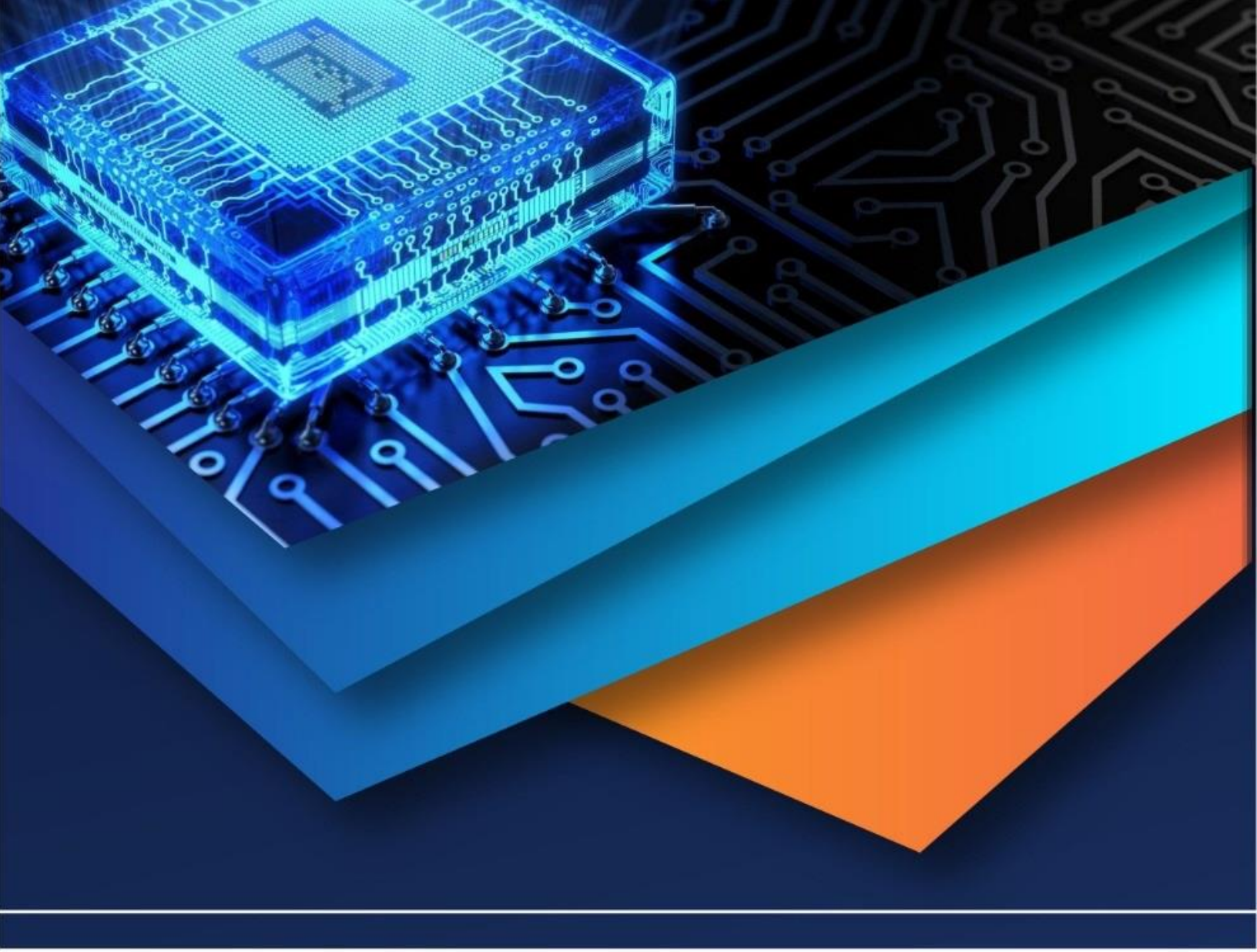
The heading of the Acknowledgment section and the References section must not be numbered.

Causal Productions wishes to acknowledge Michael Shell and other contributors for developing and maintaining the IEEE LaTeX style files which have been used in the preparation of this template. To see the list of contributors, please refer to the top of file IEEETran.cls in the IEEE LaTeX distribution.

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