

# PATIENT URINE OUTPUT TRACKER



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## INTRODUCTION

CURRENTLY, MANY PEOPLE ARE FACING INCREASING HEALTH ISSUES, A TREND EXPECTED TO CONTINUE. IN THAILAND, OVER ONE MILLION ELDERLY INDIVIDUALS ARE IN POOR HEALTH, BEDRIDDEN, AND UNABLE TO CARE FOR THEMSELVES, WHICH ADDS STRAIN TO HOSPITAL STAFF. THIS ISSUE ALSO AFFECTS BEDRIDDEN PATIENTS AT HOME, AS THEY REQUIRE CONSTANT MONITORING, ESPECIALLY FOR URINE COLLECTION BAGS. THE PURPOSE OF THIS PROJECT IS TO DEVELOP A PATIENT URINE OUTPUT TRACKER TO ASSIST NURSES AND CAREGIVERS BY REDUCING THE NEED FOR CONSTANT OBSERVATION. USING COMPUTER SCIENCE AND TECHNOLOGY, THE DEVICE SENDS ALERTS ABOUT A PATIENT'S URINE VOLUME DIRECTLY TO A CAREGIVER'S LINE APPLICATION.

## OBJECTIVE

- TO MONITOR AND ASSESS THE HEALTH OF PATIENTS.
- TO REDUCE THE WORKLOAD OF NURSES AND CAREGIVERS.

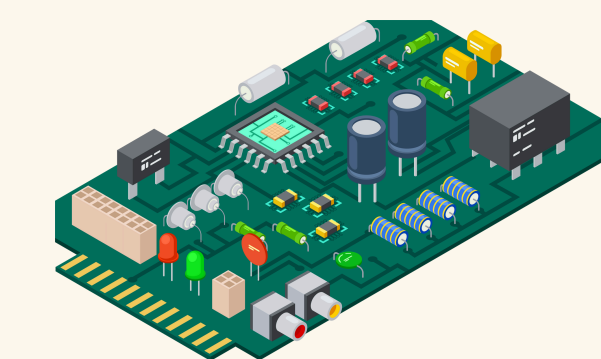
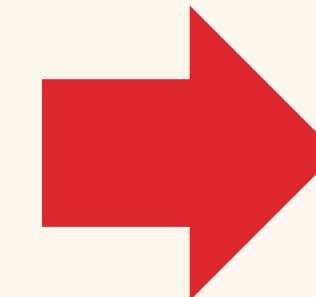
## BENEFITS

- THE DEVICE SENDS DATA OR ALERTS TO CAREGIVERS IN REAL-TIME, ENABLING TIMELY RESPONSES FROM THE MEDICAL TEAM.
- A PATIENT URINE OUTPUT TRACKER DEVICE REDUCES THE NEED FOR MANUAL URINE MEASUREMENTS, WHICH CAN BE TIME-CONSUMING AND PRONE TO ERROR, THEREBY HELPING TO REDUCE THE WORKLOAD OF CAREGIVERS.
- A PATIENT URINE OUTPUT TRACKER HELPS DOCTORS AND NURSES TO ASSESS PATIENTS' HEALTH MORE ACCURATELY, ESPECIALLY IN THOSE WITH KIDNEY DISEASE, HEART DISEASE, OR DIABETES, AS URINE VOLUME CAN REFLECT OVERALL HEALTH STATUS AND THE FUNCTION OF VARIOUS ORGANS.

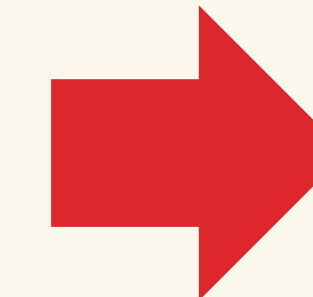
## PROCESS



WRITE CODE IN THE ARDUINO IDE PROGRAM.



CONNECT THE CIRCUIT TO THE LIQUID LEVEL SENSOR.



INSTALL THE DEVICE ONTO THE URINE COLLECTION BAG.

## METHOD OF OPERATION

- WHEN THE USB CABLE IS CONNECTED, INITIATING THE PROCESSING OF THE PRE-PROGRAMMED NODE MCU ESP8266, WHICH THEN SENDS COMMANDS TO THE NON-CONTACT LIQUID LEVEL SENSOR.
- THE BOARD SUBSEQUENTLY ACTIVATES THE BUZZER TO EMIT AN ALERT SOUND.

## EXPERIMENTAL RESULTS

No.	Test	Result (Attempt 1)	Result (Attempt 2)	Result (Attempt 3)
1	WiFi Connection	Successful	Successful	Successful
2	Notification at 1000 ml	Failed	Failed	Successful
3	Non-contact Liquid Level Sensor Setup	Failed	Failed	Successful
4	Sound Notification via Active Buzzer	Failed	Failed	Successful
5	New Notification at 1000 ml	Failed	Failed	Successful

## CONCLUSION

BASED ON THE STUDY'S RESULTS, THE PATIENT URINE OUTPUT TRACKER DEVICE IS A BENEFICIAL TOOL FOR PATIENTS, CAREGIVERS, AND MEDICAL PERSONNEL. IT ENHANCES THE CONVENIENCE OF ACCURATELY MONITORING PATIENT CONDITIONS. ADDITIONALLY, IT ALLOWS CAREGIVERS TO BE INFORMED ABOUT THE STATUS OF THE PATIENT'S URINE BAG AT ALL TIMES THROUGH NOTIFICATIONS IN THE LINE APPLICATION, HELPING TO REDUCE THE BURDEN OF MANUAL MONITORING.

## REFERENCE

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