

Department of Electrical and Computer Engineering
North South University



Senior Design Project

Bill Monitoring System with Home Automation

Name : Hasan Abrar ID #1632650643

Name : Walid Hossain ID #1722349642

Name : Sk. Abdul Walid ID #1712662642

Faculty Advisor:
Mohammad Ashrafuzzaman Khan
Assistant Professor
Department of ECE
Spring'2022

LETTER OF TRANSMITTAL

June, 2022

To

Dr. Rezaul Bari

Associate Professor and Chairman,

Department of Electrical and Computer Engineering,

North South University, Dhaka.

Subject: Submission of Capstone Project on “Bill Monitoring System with Home Automation.”

Dear Sir,

With due respect, we would like to submit our **Capstone Project Report** on “**Bill Monitoring System with Home Automation.**” as a part of our BSc program. The report deals with a device that will allow users to monitor their electricity consumption and make a mental impact on saving electricity. We tried our level best to make the report meaningful and informative.

The Capstone project was very much valuable to us as it helped us to gain experience from the practical field. It was a great learning experience for us. We tried to the maximum competence to meet all the dimensions required from this report.

We will be highly obliged if you are kind enough to receive this report and provide your valuable judgment. It would be our immense pleasure if you find this report useful and informative to have an apparent perspective on the issue.

Sincerely Yours,

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Hasan Abrar

ID-1632650643

Department of ECE

North South University, Bangladesh

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Walid Hossain

ID- 1722349642

Department of ECE

North South University, Bangladesh

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Sk. Abdul Walid

ID- 1712662642

Department of ECE

North South University, Bangladesh

APPROVAL

The capstone project entitled “**Bill Monitoring System with Home Automation.**” by Hasan Abrar (ID #1632650643), Walid Hossain (ID #1722349642) and Sk. Abdul Walid (ID #1712662642) is approved in partial fulfillment of the requirement of the Degree of Bachelor of Science in Computer Science and Engineering in 9th June, 2022 and has been accepted as satisfactory.

Supervisor:

Mohammad Ashrafuzzaman

Khan

Assistant Professor

Department of Electrical and Computer Engineering

North South University

Dhaka, Bangladesh.

Department Chair:

Dr. Rezaul Bari

Associate Professor & Chairman

Department of Electrical and Computer Engineering

North South University

Dhaka, Bangladesh.

DECLARATION

This is our truthful declaration that the “**Capstone Project Report**” we have prepared is not a copy of any “**Capstone Project Report**” previously made by any other team. We also express our honest confirmation in support of the fact that the said “**Capstone Project Report**” has neither been used before to fulfill any other course related purpose nor it will be submitted to any other team or authority in future.

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Hasan Abrar

Department of ECE

North South University, Bangladesh

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Walid Hossain

Department of ECE

North South University, Bangladesh

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Sk. Abdul Walid

Department of ECE

North South University, Bangladesh

ABSTRACT

The world is quickly being automated. Because people have less time to complete tasks, automation is a convenient way to ensure that any item or piece of technology performs as we like. The purpose of this post is to show how to use an Arduino and a Bluetooth module to construct and build a home automation system. A home automation system delivers a simple and trustworthy technology with the Android application. A bluetooth module, an Arduino microcontroller, and an electricity meter are the primary components of the system. The connection route between the Android phone and the Arduino microcontroller is wifi. The complexity of the concepts involved in the home automation system is hidden by grouping them together into a simple, yet comprehensive collection of linked concepts. This simplification is necessary in order to pack as many features as needed on the limited area available on a mobile device's display. This article offers a system that is low-cost, secure, universally accessible, auto-configurable, and remotely operated. The technique described in the research is innovative, and it has been effective at controlling home appliances and creating a vital impact on the user to limit their unnecessary electrical uses.