Department of Electrical and Computer Engineering
North South University

Senior Design Project

ADVANCED VIRTUAL CLASSROOM AND AUTOMATED GRADING SYSTEM

ALIF AL RAZI **ID# 2011358042**

ABDUL MONIM **ID# 1712556642**

Faculty Advisor:

Dr. Mohammad Monirujjaman Khan

Associate Professor

ECE Department

Summer, 2023

LETTER OF TRANSMITTAL

November, 2023

To

Dr. Rajesh Palit
Chairman,
Department of Electrical and Computer Engineering
North South University, Dhaka

Subject: **Submission of Capstone Project Report on "Advanced Virtual Classroom and Automated Grading System"**

Dear Sir,

With due respect, we would like to submit our **Capstone Project Report** on **"Advanced Virtual Classroom and Automated Grading System"** as a part of our BSc program. The report deals with virtual classroom where students and teachers may collaborate and interact in real time regardless of where they are physically situated. This project was very much valuable to us as it helped us gain experience from practical field and apply in real life. We tried to the maximum competence to meet all the dimensions required from this report.

We will be highly obliged if you kindly 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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Alif Al Razi
ECE Department
North South University, Bangladesh

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Abdul Monim
ECE Department
North South University, Bangladesh

APPROVAL

Alif Al Razi (ID # 2011358042) and Abdul Monim (ID # 1712556642) from Electrical and Computer Engineering Department of North South University, have worked on the Senior Design Project titled "**Advanced Virtual Classroom and Automated Grading System**" under the supervision of Dr. Mohammad Monirujjaman Khan partial fulfillment of the requirement for the degree of Bachelors of Science in Engineering and has been accepted as satisfactory.

Supervisor's Signature

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Dr. Mohammad Monirujjaman Khan

Associate Professor

Department of Electrical and Computer Engineering

North South University

Dhaka, Bangladesh.

Chairman's Signature

…….

Dr. Rajesh Palit

Professor

Department of Electrical and Computer Engineering

North South University

Dhaka, Bangladesh.

DECLARATION

This is to declare that this project is our original work. No part of this work has been submitted elsewhere partially or fully for the award of any other degree or diploma. All project related information will remain confidential and shall not be disclosed without the formal consent of the project supervisor. Relevant previous works presented in this report have been properly acknowledged and cited. The plagiarism policy, as stated by the supervisor, has been maintained.

Students' names & Signatures

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1. Alif Al Razi

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2. Abdul Monim

ACKNOWLEDGEMENTS

The authors would like to express their heartfelt gratitude towards their project and research supervisor, Dr. Mohammad Monirujjaman Khan, Associate Professor, Department of Electrical and Computer Engineering, North South University, Bangladesh, for his invaluable support, precise guidance and advice pertaining to the experiments, research and theoretical studies carried out during the course of the current project and also in the preparation of the current report.

Furthermore, the authors would like to thank the Department of Electrical and Computer Engineering, North South University, Bangladesh for facilitating the research. The authors would also like to thank their loved ones for their countless sacrifices and continual support.

ABSTRACT

Advanced Virtual Classroom and Automated Grading System

The Advance Virtual Classroom and Automated Grading System, which aims to revolutionise the traditional education system by integrating virtual classroom functionalities and automated grading, highlights the need for flexible and accessible learning platforms that can enhance student engagement and streamline the grading process. The current status of the system indicates its final stages. It mentions that the system has been designed and implemented with the goal of providing a comprehensive virtual classroom experience and automating the grading process to improve efficiency and accuracy. The methods followed in the development of the system mention the utilisation of advanced technologies, such as web development frameworks and machine learning algorithms, to create a user-friendly virtual classroom environment and implement automated grading mechanisms. The abstract also highlights the integration of secure examination systems to ensure the integrity of assessments. The results acquired through the implementation of the Advance Virtual Classroom and Automated Grading System It states that the system has successfully provided students with a virtual classroom experience that includes features such as live video lectures, interactive discussions, and collaborative tools. Additionally, the system's automated grading component has demonstrated improved accuracy and efficiency in evaluating student assessments. The impact and significance of the results obtained from the system It highlights the potential of the Advance Virtual Classroom and Automated Grading System to revolutionise education by enabling flexible and accessible learning, enhancing student-teacher interaction, and reducing the administrative burden of manual grading. The system's implementation can lead to improved learning outcomes, increased efficiency in grading, and a more engaging educational experience for both students and instructors.