

Department of Electrical and Computer Engineering

North South University



Senior Design Project

CPPS: A portal for tracking and guiding algorithmic problem solvers

Abdullah Al Imam

ID # 1511013042

Labib Md. Rashid

ID # 1510712042

Hasib Al Muhaimin

ID # 1510720042

Supervisor

Dr. M Shazzad Hosain

**Associate Professor, Electrical and Computer Engineering,
North South University**

LETTER OF TRANSMITTAL

May, 2019

To

Dr. K.M.A Salam

Professor and Chairman,

Department of Electrical and Computer Engineering

North South University, Dhaka

Subject: Submission of Capstone Project on “CPPS: A portal for tracking and guiding algorithmic problem solvers”.

Dear Sir,

With due respect, we would like to submit Our **Capstone Project Report** on “CPPS: A portal for tracking and guiding algorithmic problem solvers” as a part of our BSc. program. The report describes the functions and interface of a web based platform developed to gain higher efficiency in the field of training for competitive programming. 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 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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Abdullah Al Imam
ECE Department
North South University, Bangladesh

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Labib Md. Rashid
ECE Department
North South University, Bangladesh

.....
Hasib Al Muhaimin
ECE Department
North South University, Bangladesh

APPROVAL

The capstone project entitled “**CPPS: A portal for tracking and guiding algorithmic problem solvers**” by Abdullah Al Imam (ID # 1511013042), Hasib Al Muhaimin (ID # 1510720042) and Labib Md. Rashid (ID # 1510712042) , is approved in partial fulfillment of the requirement of the Degree of Bachelor of Science in Computer Science and Engineering on April, 2018 and has been accepted as satisfactory.

Supervisor:

Dr. M Shazzad Hosain

Associate Professor

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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Labib Md. Rashid

ECE Department

North South University, Bangladesh

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Hasib Al Muhaimin

ECE Department

North South University, Bangladesh

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Abdullah Al Imam

ECE Department

North South University, Bangladesh

ACKNOWLEDGEMENT

The capstone project program is very helpful to bridge the gap between the theoretical knowledge and real life experience as part of Bachelor of Science (BSc) program. This report has been designed to have a practical experience through the theoretical understanding.

We also acknowledge our profound sense of gratitude to all the teachers who have been instrumental for providing us the technical knowledge and moral support to complete the project with full understanding.

We would like to convey our heartiest gratitude to our honourable senior design supervisor Dr. M Shazzad Hosain sir. He has been instrumental in the completion of the project with his kind guidance and brilliant leadership and cooperation. Apart from the project the contribution he has been making with forming Bangladesh Advanced Computing society (BACS) among many other initiatives for the competitive programming scene in Bangladesh has been tremendous and widely appreciated. Encouraging us to pursue this idea is another example of his attempts to further the ease and facilities for young programmers in Bangladesh.

Lastly we also would likely to acknowledge Mohammad Samiul Islam, a former student of North South University and currently a software engineer at Google for his support with the technology stacks and ideas regarding the design of the system.

We also thank our friends and families for their moral support to carve out this project and with assistance at times.

ABSTRACT

Sport programming is a fairly underrated co-curricular activity for students of various levels. It can be a very productive hobby for professionals as well. Regular involvement with programming problem solving keeps a programmer's skill to write code from scratch fresh and gives various perspectives in approaching problems of different fields of Computer Science and Software Development. Universities all over the world take initiatives and run training programs for developing highly skilled competitive programmers. This project acknowledges the need for smoothening the process of training students for competitive algorithmic problem solving. The end result of this project is a Web application serving programmers, helping to improve their problem solving skill. It also serves trainers for managing and guiding their students. This app provides with a very well defined guideline and tools for programmers to pursue their goal of becoming a highly skilled programmer and enables them to do well in programming contests as well as building their career as a computer science professional.