

# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Jnana Sangama, Belgaum – 560018



A Project Report - Phase II

on

**“Transparency in Carbon credit using Blockchain and IoT”**

*Submitted in the partial fulfilment of the requirements for the award of the Degree of*

**Bachelor of Engineering**

**in**

**Computer Science and Engineering**

*Submitted By*

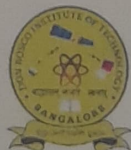
M G Nikhil	1DB20CS067
Nitish K L	1DB20CS081
S Suhas	1DB20CS091
Santoshkumar	1DB20CS095

*Under the guidance of*

**Dr. Venugeetha Y**

**Professor**

*Department of CSE*



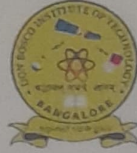
**Don Bosco Institute of Technology**

Mysore Road, Kumbalgodu, Bengaluru – 560074

**2023-2024**

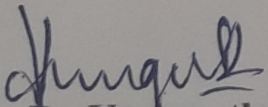
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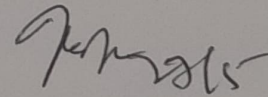
**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

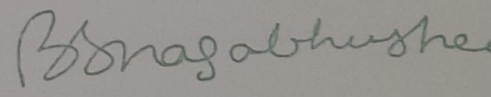


**CERTIFICATE**

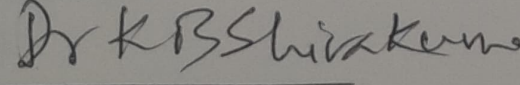
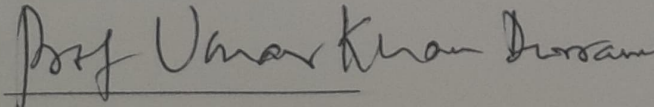
*This is to certify that the Project Phase-II entitled "Transparency in Carbon Credit using Blockchain and IoT" been carried out by M G Nikhil (1DB20CS067), Nitish K L (1DB20CS081), S Suhas (1DB20CS091), Santoshkumar (1DB20CS095), bonafied by DON BOSCO INSTITUTE OF TECHNOLOGY, Bengaluru, in the partial fulfilment of award of Degree of Bachelor of Engineering in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi, during the academic year 2023-24. The Project Phase -II has been approved as it satisfies the academic requirements in respect of the Project Phase-II prescribed for the Bachelor of Engineering Degree.*

  
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B.E. (CSE), M.Sc. (IT), MTech (CNE),  
Ph.D.  
Professor,  
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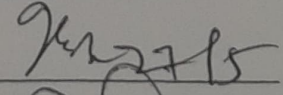
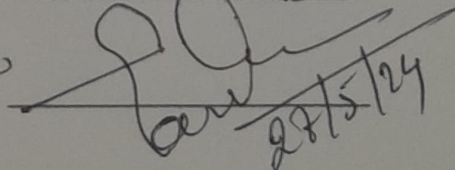
  
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**EXAMINER:**

- 1)   
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- 2)   
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**Signature With Date**

  
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28/5/24



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**  
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Mysuru road, Kumbalgodu, Bengaluru-560074

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**



**DECLARATION**

*We M G Nikhil (1DB20CS067), Nitish K L (1DB20CS081), S Suhas (1DB20CS091), Santoshkumar (1DB20CS095), students of eight semester B.E, at the Department of Computer Science and Engineering, Don Bosco Institute of Technology, Bengaluru declare that the Project Phase-II entitled “TRANSPARENCY IN CARBON CREDIT USING BLOCKCHAIN AND IoT” has been carried out by us and submitted to partial fulfilment of the course requirements for the award of the degree of Bachelor of Engineering in Computer Science and Engineering discipline of Visveswaraya Technological University, Belagavi during the academic year 2023-24. The matter embodied in this report has not been submitted to any other university or institution for the award of any other degree.*

**Place: Bengaluru**

**M G Nikhil**

**1DB20CS067**

**Date:**

**Nitish K L**

**1DB20CS081**

**S Suhas**

**1DB20CS091**

**Santoshkumar**

**1DB20CS095**

## ACKNOWLEDGEMENT

The satisfaction and euphoria that successful completion of any project is incomplete without the mention of people who made it possible, whose constant guidance and encouragement made our effort fruitful.

First and foremost, we ought to pay our due regards to this institute, which provide us with a platform and given an opportunity to display our skills through the medium of project work. We express our heartfelt thanks to our beloved principal **Dr. Nagabhushana B S, Don Bosco Institute of Technology, Bengaluru** for this encouragement and providing us with all the infrastructure.

We express our deep sense of gratitude and thanks to **Dr. K B ShivaKumar**, professor and Head, **Department of Computer Science and Engineering** for extending his valuable insights and suggestions offered during this course.

We express our acknowledgement to our project coordinator **Dr. Asha K H, Department of Computer Science and Engineering** for extending their direction and support during the completion of Project Phase-II.

It's our outmost pressure to acknowledge the kind help extended by our guide **Dr. Venugeetha Y, Department of Computer Science and Engineering**, for the guidance and assistance which consequently resulted in getting the Project Phase-II work completed successfully.

Finally, I would like to thank teaching and non-teaching staff for their cooperation extended during the completion of the Project Phase-II.

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<b>Nitish K L</b>	<b>1DB20CS081</b>
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## ABSTRACT

The urgency to mitigate climate change has prompted the development of innovative solutions to incentivize emission reductions and promote sustainable practices. In this context, we propose a novel system integrating blockchain technology with Internet of Things (IoT) sensors for the management of carbon credits. Our system employs IoT sensors to continuously monitor emissions from various sources such as industrial facilities, transportation, and energy production. The emissions data collected is securely transmitted to a blockchain-based ledger, where it is validated, recorded, and used to generate carbon credits based on predefined criteria. These blockchain-enabled carbon credits represent a unit of emission reduction or avoidance and are transparently recorded on the distributed ledger. Smart contracts automate the trading and transfer of credits, ensuring efficiency and reliability in carbon markets. Stakeholders, including regulators, investors, and the public, have real-time access to emissions data and carbon credit transactions, fostering transparency and accountability in emission reduction efforts. By providing a tangible value to emissions reductions, our system incentivizes companies and individuals to adopt sustainable practices and invest in emission reduction technologies. Ultimately, this integrated approach to carbon credit management accelerates the transition to a low-carbon economy and contributes to global climate mitigation efforts.