

# VISVESVARAYATECHNOLOGICALUNIVERSITY

“JnanaSangama”,Belagavi-590018,Karnataka.



## Project Phase-I Report( BIS685)

on

**“A Research on CodeHive: The Pulse of Collaborative Coding Platform for  
synchronized innovation through collective teamwork”**

*Submitted in partial fulfillment for the award of VI semester*

## BACHELOR OF ENGINEERING

in

## DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

### Project-Associates

- |                         |            |
|-------------------------|------------|
| 1. Raghavendragouda K T | 1DB22IS117 |
| 2. Prasanna N           | 1DB22IS107 |
| 3. Manjesh R            | 1DB22IS076 |
| 4. Likhith Gowda T D    | 1DB22IS069 |

### Under the Guidance of

**Mrs. Supriya**

### ASSISTANT PROFESSOR

Dept of Information Science and Engineering

Don Bosco Institute of Technology



**Department of Information Science and Engineering**

**DON BOSCO INSTITUTE OF TECHNOLOGY**

**Kumbalagodu,Mysuru road,Bengaluru-560074**

**2024-25**

# **Don Bosco Institute of Technology**

**Kumbalgodu Mysuru Road Bengaluru-560074**

## **DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING**



### **CERTIFICATE**

This is to Certify that the Project work on the topic “**A Research on CodeHive: The Pulse of Collaborative Coding Platform for synchronized innovation through collective teamwork**” has been successfully presented at **Don Bosco Institute of technology** by **Raghavendragouda(1DB22IS117), Prasanna N(1DB22IS107), Manjesh R (1D22IS076), Likhith Gowda T D(1DB22IS069)** in partial fulfillment of the requirements for the *VI Semester degree of Bachelor of Engineering in Information Science and Engineering* of *Visvesvaraya Technological University, Belagavi* during academic year 2024- 2025. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Project Phase-I report deposited in the departmental library. The Project Phase -I report has been approved as it satisfies the academic requirements in respect of Project for the said degree.

#### **Signature of the Guide**

**Mrs. Supriya**  
Assistant Professor  
Dept. of ISE  
DBIT,Bengaluru

#### **Signature of the HOD**

**Dr. B K Raghavendra**  
Professor & Head  
Dept. of ISE  
DBIT,Bengaluru

#### **Signature of the Principal**

**Dr. B S Naghabhushana**  
Principal  
DBIT,Bengaluru

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<b>Raghavendragouda K T</b>	<b>(1DB22IS117)</b>
<b>Prasanna N</b>	<b>(1DB22IS107)</b>
<b>Manjesh R</b>	<b>(1DB22IS059)</b>
<b>Likhith Gowda T D</b>	<b>(1DB22IS069)</b>

# ABSTRACT

CodeHive is a collaborative coding platform designed to enhance real-time teamwork among developers through a cloud-based integrated development environment (IDE). Supporting multiple programming languages and version control systems, CodeHive enables users to co-edit code, communicate via embedded chat and video conferencing, and manage tasks with greater transparency. Its synchronous and asynchronous collaboration tools allow teams to review, comment, and track changes efficiently, regardless of their physical locations.

Adaptable to diverse environments—from agile startups to large enterprises and educational institutions—CodeHive integrates seamlessly with tools like GitHub, Jira, and Slack to maintain workflow continuity. The platform also supports instructors and students by enabling collaborative learning and facilitating pair programming. With its focus on security, scalability, and usability, CodeHive fosters innovation while promoting accountability and effective teamwork across technical projects.

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# Chapter1

## Introduction

Rainfall is a crucial element of the Earth's climate system, and its accurate monitoring is essential for a wide range of applications, from agriculture and water resource management to flood forecasting and weather forecasting. Over the years, traditional rainfall monitoring systems have been used to gather information on precipitation, such as rain gauges and weather stations. However, these systems can be expensive, require a significant amount of maintenance, and may not provide real-time data.

With the advent of the Internet of Things (IoT) technology, a new era of rainfall monitoring has emerged, making it possible to develop low-cost and efficient monitoring systems that can provide real-time data. One such system is the Rainfall Monitoring using Arduino with IoT. This system combines the power of the Arduino microcontroller and Wi-Fi module to create a reliable, low-cost, and scalable rainfall monitoring system that can be easily deployed in any location.

The Rainfall Monitoring using Arduino with IoT system comprises three primary components: a rain gauge sensor, an Arduino microcontroller, and a Wi-Fi module. The rain gauge sensor measures the amount of rainfall and sends this data to the Arduino microcontroller, which processes the information and transmits it to a cloud-based IoT platform via Wi-Fi.

In summary, the Rainfall Monitoring using Arduino with IoT system is an innovative and effective solution for monitoring rainfall in real-time. Its low cost, accuracy, reliability, and scalability make it an ideal system for a wide range of applications, including agriculture, water resource management, flood forecasting, and weather forecasting. With the system's ability to provide real-time data, decision-makers can make more informed choices based on the latest information on precipitation patterns, leading to better outcomes for people and the environment.



## Chapter 2

### Literature Survey

#### 2.1 Related Works

Sl.no	Author	Title	Publication	Pros	Cons
1.	ZHI Yong-feng, LI Ru	Design of Raindrop Detector Based on Arduino	International Conference on Computer Science and Electronics Engineering	Simple and cost- effective design; uses Arduino which is beginner- friendly	Limited to detecting raindrops; no data storage or transmission
2.	S. R. Olaniyan, O. S. Ajala	Design and Implementation of an Automated Rainfall Monitoring System Using IoT.	International Journal of Engineering Research & Technology (IJERT).	Real-time data transmission; low-cost and scalable.	Depends on network connectivity; basic data processing.
3.	M. R. Islam, M. J. Hasan	Design and Development of a Wireless Rainfall Monitoring System.	International Conference on Electrical Engineering and Information & Communication Technology.	Uses wireless transmission via ZigBee; energy efficient.	ZigBee has limited range; system complexity increases with distance.



4.	Tareq Alhmiedat, Ghassan Samara	A Low Cost ZigBee Sensor Network Architecture for Indoor Air Quality Monitoring	arXiv preprint arXiv:1712.04190	Low-cost design; suitable for indoor environments	Limited to indoor air quality monitoring; may not be applicable for outdoor rainfall monitoring
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