VISVESVARAYA TECHNOLOGICAL UNIVERSITY
"Jnana Sangama", Belagavi-560014, Karnataka

<u>A PROJECT REPORT ON</u>

"LOW COST COMPUTER LAB SETUP FOR RURAL SCHOOLS AND PANCHAYAT USING DEVOPS"

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE

BACHELOR OF ENGINEERING
IN
INFORMATION SCIENCE & ENGINEERING

<u>Submitted By</u>

RAVITEJA S   **(1SV19IS013)**
PRIYA AGADI   **(1SV19IS012)**
CHAITHRA B S   **(1SV19IS002)**
THANMAYI P   **(1SV19IS022)**

<u>Under the guidance of</u>

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Assistant Professor, Dept. of CSE.

SHRIDEVI
E D U C A T I O N

PRINCIPAL
SHRIDEVI INSTITUTE OF
ENGINEERING AND TECHNOLOGY
TUMKUR - 572106

Department of Information Science and Engineering

SHRIDEVI INSTITUTE OF ENGINEERING AND TECHNOLOGY
(Affiliated To Visvesvaraya Technological University)
Sira Road, Tumakuru – 572 106, Karnataka.
2022-23

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that, the project entitled "LOW COST COMPUTER LAB SETUP FOR RURAL SCHOOLS AND PANCHAYAT USING DEVOPS" has been successfully carried out by RAVITEJA S [1SV19IS013], PRIYA AGADI [1SV19IS012], CHAITHRA B S [1SV19IS002], THANMAYI P [1SV19IS022] in partial fulfillment for the award of **Bachelor of Engineering in Information Science & Engineering** of the **Visvesvaraya Technological University, Belagavi** during the academic year **2022-23.** It is certified that all the corrections/suggestions indicated for internal assessments have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the Bachelor of Engineering Degree.

_____   _____
Signature of Guide   **Signature of H.O.D**
Mr.Girish L B.E., M.Tech.,   **Dr.Suhas G K** B.E., M.Tech., Phd,
Assistant Professor,   Associate Professor & HOD
Dept. of CSE,   Dept. of ISE,
SIET, Tumakuru.   SIET, Tumakuru.

_____
Signature of Principal

Dr.Narendra Viswanath M.E., Ph.D., MIE, MISTE, MINSTIFIN
Principal,
SIET, Tumakuru

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External Viva

Name of the Examiners	Signature with Date
1. Dr. Manoj Kumar DP	
2. MERLIN B	24/5/23

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

DECLARATION

We, RAVITEJA S [1SV19IS013], PRIYA AGADI [1SV19IS012], CHAITHRA B S[1SV19IS022], THANMAYI P [1SV19IS022], student of VIII semester **B.E** in Information Science & Engineering, at Shridevi Institute of Engineering & Technology, Tumakuru, hereby declare that, the project work-II entitled **"LOW COST COMPUTER LAB SETUP FOR RURAL SCHOOLS AND PANCHAYAT USING DEVOPS "**, embodies the report of our project work carried out by our team under the guidance of **Mr.Girish L, Assistant Professor, Department of CSE**, SIET, Tumakuru as partial fulfillment of requirements for the award of the degree in **Bachelor of Engineering in Information Science & Engineering of Visvesvaraya Technological University, Belagavi**, during the academic year **2022-23**. The project has been approved as it satisfies the academic requirements in respect to the Project work.
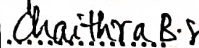
Place: Tumakuru

Date: 24/05/2023

Student Name & Signature
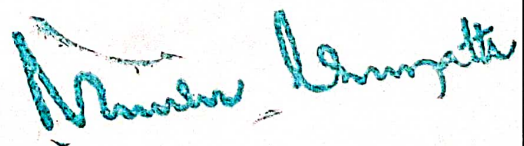
RAVITEJA S   [1SV19IS013]...............

PRIYA AGADI [1SV19IS012]...............

CHAITHRA B S [1SV19IS002].Chaithra.B.r

THANMAYI P   [1SV19IS022]...............

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ACKNOWLEDGEMENT

Date: 22/05/2023

TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Mr. RAVITEJA S** bearing USN **SV19IS013** Student of **Shridevi Institute of Engineering & Technology** has successfully completed his Project Work titled Low Cost Computer Lab Setup for Rural Schools and Panchayat Using DevOps".

We wish every success in his career.

For ShriTEK Innovations

Authorized Signature

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Date: 22/05/2023

TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Ms. PRIYA AGADI** bearing USN **SV19IS012** Student of **Shridevi Institute of Engineering & Technology** has successfully completed her Project Work titled "Low Cost Computer Lab Setup for Rural Schools and Panchayat Using DevOps".

We wish every success in her career.

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This is to certify that **Ms. CHAITHRA B S** bearing USN **SV19IS002** Student of **Shridevi Institute of Engineering & Technology** has successfully completed her Project Work titled Low Cost Computer Lab Setup for Rural Schools and Panchayat Using DevOps".

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Date: 22/05/2023

TO WHOM SO EVER IT MAY CONCERN

his is to certify that **Ms. THANMAYI P** bearing USN
SV19IS022 Student of **Shridevi Institute of Engineering &
Technology** has successfully completed her Project Work titled
Low Cost Computer Lab Setup for Rural Schools and
Panchayat Using DevOps".

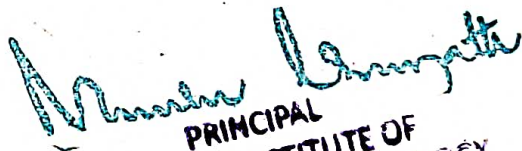We wish every success in her career.

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ABSTRACT

In terms of diversity in operating systems, environments, and platforms, and with limited host infrastructure resources to hold all operating systems and platforms, the need arises to design applications that run in many or in number of operating systems and platforms. There are many methods to create a program running on a multi environment, the most common of them are virtualization and containerization. In this project, we choose to design the proposed project in the shape of a portable program depending on containerization with the Docker container platform. The Docker container platform can host the program and attach all of its dependencies in one unit (container) to run the application in a number of environments. The client-server model is used in most network applications. Providing this model as a container is one of the important things that contribute to reducing the effort spent by programmers in producing their portable applications. This project proposes a multithreaded client-server for each client, and the server appears as a separate Docker container. Both client and server containers are based on ubuntu and developed using Docker network. As a case study, the server acts as a server and it can serve many clients simultaneously. The Docker will build the containers depending on a writing Dockerfile for each container and push them to the registry (docker hub). When pulled the image of the containers from the registry account, then it could be run the container on a host. Keywords: Docker, Thin-client, Container, DevOps

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