VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama", Belagavi-560014, Karnataka



A PROJECT REPORT ON

"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

Submitted By

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

Under the guidance of

Mr.Girish L B.E., M. Tech.,

Assistant Professor, Dept. of CSE.



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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



Sri Shridevi Charitable Trust (R.)



(Recognised by Govt. of Karnataka, Affiliated to VTU, Belagavi and Approved by AICTE, New Delhi)

Sira Road, Tumakuru - 572 106. Karnataka.

Phone: 0816-2212629 | Fax: 0816-2212628 | Email: info@shrideviengineering.org | Web: http://www.shrideviengineering.org

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 Mr.Girish L B.E., M.Tech., Assistant Professor,

Dept. of CSE, SIET, Tumakuru. Signature of H.O.D

Dr. Suhas G K B.E., M. Tech., Phd, Associate Professor & HOD Dept. of ISE,

SIET, Tumakuru.

Signature of Principal

SIET, Tumakuru

Dr. Narendra Viswanath M.E., Ph.D., MIE, MISTE MINES, THE OF Principal,

SIET Tumplows ENGINEERING AND TECHNOLOGY TUMKUR - 572106

External Viva

Name of the Examiners

Signature with Date

1 Dr. Mang Reeman DP

MERLIN.B



Sri Shridevi Charitable Trust (R.)

Karnataka, Affiliated to VTU, Belagavi and Approved by AICTE, New Delhi)





Sira Road, Tumakuru - 572 106. Karnataka. Phone: 0816-2212629 | Fax: 0816-2212628 | Email: info@shrideviengineering.org | Web: http://www.shrideviengineering.org

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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: 24/01/2023

Student Name & Signature

RAVITEJAS [1SV19IS013].

PRIYA AGADI [1SV19IS012].

CHAITHRA BS [18V19IS002] Chai

THANMAYI P [1SV19IS022]....

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ACKNOWLEDGEMENT

This project work will be incomplete without thanking the personalities responsible for this venture, which otherwise would not have become a reality.

We express our profound gratitude to Dr.Narendra Viswanath, Principal, S.I.E.T, for his moral support towards completing our project work.

We would like to thank Head of Department Dr.Suhas G K. Head, Department of ISE, SIET for providing all the support and facility.

We would like to thank my guide Mr. Girish L, Assistant Professor, Department of computer Science and Engineering, SIET for his/her help, sharing his/her technical expertise and timely advice.

We would like to express our sincere gratitude to all teaching and non-teaching faculty of the department of CSE for guiding us throughout the course of this project by giving valuable suggestion and encouragement.

By,

RAVITEJA S [1SV19IS013] PRIYA AGADI [1SV19IS012] CHAITHRA B S [1SV19IS002] THANMAYI P [1SV19IS022]

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Skill & Career Development Centre, Room No. 3, Ground Floor, SIET Campus, Sira Road, Tumakuru - 572 106. Karnataka.

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6:0816-2211642

: www.shritek.com

🗟 : shritekinnovations@gmail.com

Date: 22/05/2023

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his is to certify that Mr. RAVITEJA Sobearing USN SV19IS013 Student of Shridevi Institute of Engineering & echnology has successfully completed his Project Work titled Low Cost Computer Lab Setup for Rural Schools and anchayat Using DevOps".

Ve wish every success in his career.

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: www.shritek.com

🧟 : shritekinnovations@gmail.com

Date: 22/05/2023

TO WHOM SO EVER IT MAY CONCERN

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

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- Skill & Career Development Centre, Room No. 3, Ground Floor, SIET Campus, Sira Road, Tumakuru 572 106. Karnataka.
- **6**:0816-2211642
- : www.shritek.com
- 🖻 : shritekinnovations@gmail.com

Date: 22/05/2023

TO WHOM SO EVER IT MAY CONCERN

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

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ENGINEERING AND TECHNOLOGY
TUMKUR - 572106

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Skill & Career Development Centre, Room No. 3, Ground Floor, SIET Campus, Sira Road, Tumakuru - 572 106, Karnataka.

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: www.shritek.com

a: shritekinnovations@gmail.com

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 & echnology has successfully completed her Project Work titled Low Cost Computer Lab Setup for Rural Schools and anchayat Using DevOps".

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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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