

# **A MINI PROJECT REPORT**

**On**

## **NAS STORAGE USING RASPBERRY PI**

**Submitted by**

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### Declaration

We hereby declare that the work which is being presented in the Mini Project “**NAS Storage using Raspberry Pi**”, in fulfillment of the requirements for Mini-Project, is an authentic record of our own work carried under the supervision of **Saurabh Anand, Assistant Professor, GLA University, Mathura.**

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## **CERTIFICATE**

This is to certify that the project entitled “**NAS Storage using Raspberry Pi**” carried out in Mini Project is a Bonafede work done by **Abhishek Kumar (181510001)**, **Saurabh Pundir (181510028)**, **Sparsh Agrawal (181510033)** , **Ritik Tomar (181510025)** and is submitted in partial fulfillment of the requirements for the award of the degree Bachelor of Technology (Computer Science & Engineering).

**Sign**\_\_\_\_\_

**Mr. Saurabh Anand**

**(IBM Coordinator)**

**Date: 12/12/2020**

## **ACKNOWLEDGEMENT**

*It gives us a great sense of pleasure to present the report of the B. Tech Mini Project undertaken during B. Tech. Third Year. This project in itself is an acknowledgement to the inspiration, drive and technical assistance contributed to it by many individuals. This project would never have seen the light of the day without the help and guidance that we have received.*

*Our heartiest thanks to **Prof. (Dr.) Anand Singh Jalal**, Head of Dept., Department of CEA for providing us with an encouraging platform to develop this project, which thus helped us in shaping our abilities towards a constructive goal.*

*We owe special debt of gratitude to **Mr. Saurabh Anand**, Assistant Professor Department of CEA, for his constant support and guidance throughout the course of our work. His sincerity, thoroughness and perseverance have been a constant source of inspiration for us. He has showered us with all his extensively experienced ideas and insightful comments at virtually all stages of the project & has also taught us about the latest industry-oriented technologies.*

*We also do not like to miss the opportunity to acknowledge the contribution of all faculty members of the department for their kind guidance and cooperation during the development of our project. Last but not the least, we acknowledge our friends for their contribution in the completion of the project.*

Abhishek Kumar

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## **Abstract**

Got a lot of digital stuff? Make it available anywhere in your home with your own Raspberry Pi network-attached storage.

If you've got a lot of files like photos, music, or movies, chances are they are sitting on a hard drive somewhere. Getting access to those files and making sure they are protected from drive failure can be challenging without an expensive network-attached storage (NAS) solution. These file- and media-serving black boxes can punch a hole in your bank account, particularly the professional versions aimed at businesses. Now, thanks to the improved throughput of Raspberry Pi 4 with USB 3.0 and Gigabit Ethernet, you can build a fully featured NAS for a fraction of the cost.

# 1.INTRODUCTION

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**Title of project:**

To design and develop Network Attached Storage (NAS) Box using Raspberry Pi.

**Project Description:**

The proposed Network Attached Storage (NAS) Box using Raspberry Pi will give the user a cost-effective storage solution and also will provide the opportunity to control and configure various comprehensive applications such as automated backup, audio, video station and network protocols such as FTP, HTTP/S, Samba, NFS, etc. using their smart phone or desktop PC over network. The technical stack of product includes MariaDB database and Python-Flask Web Framework. Network Attached Storage (NAS) using Raspberry Pi is the future for safely storing all your data. This system consists of one or more hard drives that are constantly connected to the network. Thus becomes your backup "hub", or storage unit that stores all your important files and media such as photos, videos and music. Imagine it being your external hard drive, but rather taking it everywhere, it is placed at one place and accessible for you to use at anytime and anywhere.

**Objectives:**

1. To study taxonomy and survey of NAS Box architecture, Raspberry Pi and networked attached storage.
2. To articulate a model, architecture and concept to interface to work Raspberry Pi as NAS Box.
3. To develop and module user interface to assist users to control Raspberry Pi NAS Box.
4. To implement Networked Attached Storage Box using Raspberry Pi.
5. To deploy and analyze performance of Raspberry Pi NAS Box.

**Outcomes:**

1. Fast configuration with low complications
2. Reliable operation and easy administration
3. Restart time is less as compared to high configuration file servers
4. Efficient data transfer and reliable network access