Internship Report

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Branch: Computer Engineering

Duration of internship: 2 month (20 May – 19 July)

Name of organization: **Reliance Industries Limited (Patalganga)**

Name of Mentor: Mr Kanthimahanti Sivananda Kumar

Signature of the Mentor

Index

|  |  |  |
| --- | --- | --- |
| **Sr. No** | Topic | Pg.no |
| 1 | Acknowledgment | 3 |
| 2 | Purpose of internship | 4 |
| 3 | Overview of Reliance Industries Limited | 5 |
| 4 | Internship activities and contributions | 7 |
| 5 | Learning outcomes | 10 |
| 6 | Skills Acquired | 12 |
| 7 | Conclusion | 14 |

Acknowledgment

I would like to express my deepest gratitude to my mentor, K.S Kumar for their invaluable guidance, support and encouragement throughout the duration of my internship at Reliance Industries Limited. Their expertise and insights have been instrumental in enhancing my understanding and skills in various IT domains. The mentorship provided by K.S Kumar has been a cornerstone of my learning experience, and I am truly grateful for their unwavering dedication and patience. This internship would not have been possible without their continuous assistance and mentorship.

Special thanks to Mr Sanjay Shukla Sir (HOD-IT).

Purpose of Internship

The purpose of this internship at Reliance Industries Limited was to gain practical experience and enhance my technical skills in various IT domains, including programming, database management, networking, and server administration. Through hands-on projects, mentorship, and real-world applications, this internship aimed to bridge the gap between theoretical knowledge and practical implementation, preparing me for a successful career in the IT industry.

Overview of Reliance Industries Limited

**Reliance Industries Limited, Patalganga**

Reliance Industries Limited (RIL) Patalganga is one of the major manufacturing units of RIL, located near the banks of the Patalganga River in Maharashtra, India. This facility is known for its significant contributions to RIL's extensive portfolio in the petrochemical, refining, and textile sectors.

Key Features of RIL Patalganga:

1. **Petrochemical Production:**

- The Patalganga complex plays a critical role in RIL's petrochemical operations, producing a variety of petrochemical products, including polyethylene, polypropylene, and polyester. These products are essential for various industries, ranging from packaging to automotive.

2. **Textile Manufacturing:**

- The facility is also involved in the production of polyester fibers, yarns, and fabrics, contributing to RIL's leadership in the global textile market. The advanced manufacturing processes ensure high-quality textile products that meet international standards.

3. **Advanced Technology and Infrastructure:**

- Equipped with state-of-the-art technology and infrastructure, the Patalganga complex emphasizes efficiency, sustainability, and innovation. This includes advanced automation, robotics, and stringent safety protocols to ensure smooth and safe operations.

**4. Environmental and Social Responsibility:**

- RIL Patalganga is committed to sustainable practices, focusing on minimizing environmental impact through efficient resource management, waste reduction, and adherence to environmental regulations. The facility also engages in various community development initiatives, contributing to the well-being of the local population.

**5. Strategic Location:**

- The strategic location of the Patalganga complex, with proximity to major transportation networks, enhances logistical efficiency for the distribution of products both domestically and internationally.

Overall, Reliance Industries Limited, Patalganga, is a mother-plant and cornerstone of RIL's industrial operations, driving innovation and excellence in the petrochemical and textile industries while maintaining a strong commitment to sustainability and community development.

### Internship Activities and Contributions

During my internship at Reliance Industries Limited, I gained extensive practical experience and enhanced my skills across various IT domains. Below is a detailed summary of my key activities and contributions during this period.

1. **Safety Training and IT Services Overview**

The internship began with comprehensive safety training, where I learned about essential workplace safety protocols and emergency procedures. Additionally, I received entry passes to access various company facilities. I also met the employees, gaining an overview of the company's IT services and infrastructure, which helped me understand the different IT services managed by the department.

1. **Technical Assignments and Networking**

I received various coding assignments focused on machine operations and winders, aimed at understanding the specific coding requirements for the machinery used in the company. This was followed by an introduction to networking, where I learned about network topologies, protocols, and basic configurations, gaining practical networking skills.

1. **Automation and File handling**

I created a batch file to automate the process of transferring or copying files from one server to another. This batch file was later set on Task Scheduler to ensure it runs at specified times, enhancing my automation skills.

1. **Server Administration**

I gained detailed knowledge of servers, including RAID configurations, different operating systems, and server management. I installed various versions of Windows operating systems (Windows 2012, 2016, 2019) on servers and managed virtual machines using HYPER-V, a virtualization technology by Microsoft.

1. **Network Management**

I installed and configured Active Directory Services and DNS on Windows Server 2019. I also installed a DHCP server, created a file server, and set up a domain, learning about network management and server roles.

1. **Web Development**

I converted an Excel file into an SQL table and developed a simple web application using the .NET framework. This application was hosted on a web portal using Internet Information Services (IIS), allowing seamless network-wide access to all nodes connected to the network , providing a comprehensive solution for inventory data display and management.

1. **Windows form Development**

Developed a Windows Forms application using Visual Studio and integrated it with a database through MS Access. The application offers various functionalities, including adding new records, searching the database, navigating between previous and next records, deleting records, and exiting the application.

1. **Industrial Visit**

Participated in plant visits to various sections PFY/CP-1,2, IDY, APHS, PSF, CP-,6,7. During these visits, I observed the different process involved int the manufacturing of Polyester and the use of robotics to transfer bobbins, gaining practical insights into industrial processes.

1. **Presentation on IT in the Textile Industry**

I created a short presentation on the topic "Role of IT in the Textile Industry," highlighting the significant impact of IT on various aspects of the textile sector, including process automation, supply chain management, and quality control. This presentation underscored the critical role of technology in driving efficiency and innovation within the industry.

Learning Outcomes

1. **Understanding of Workplace Safety Protocols**

Gained knowledge of essential safety practices and emergency procedures crucial for maintaining a safe working environment.

1. **Insight into IT Services and Infrastructure**

Developed a comprehensive understanding of the IT services and infrastructure at Reliance Industries, including networking, server management, and IT support systems.

1. **Practical Networking Skills**

Learned the basics of networking, including topologies, protocols, and configurations. Gained hands-on experience with networking hardware through practical sessions.

1. **Automation Techniques**

Developed automation skills by creating batch files for file transfer and configuring Task Scheduler for automated tasks, improving efficiency and reliability.

1. **Server Administration**

Learned about server configurations, RAID setups, operating system installations, and virtualization using HYPER-V. Acquired skills in managing Windows Server environments, including Active Directory Services, DNS, DHCP, and file servers.

1. **Web Development**

Developed a web application using the .NET framework and hosted it on a web portal via Internet Information Services (IIS), showcasing integration of backend data with frontend accessibility

1. **Windows Form Development**

Developed a Windows Forms application using Visual Studio and integrated it with a database through MS Access successfully.

1. **Industry-Specific IT Applications**

Gained insights into the role of IT in the textile industry, understanding how technology drives process automation, supply chain management, and quality control

Skills acquired

1. **Safety and Compliance**

- Understanding and application of workplace safety protocols and emergency procedures.

2. **IT Infrastructure Management**

- Knowledge of IT services, network configurations, and infrastructure management.

3. **Networking**

- Practical skills in networking, including switch configuration and network troubleshooting.

4. **Automation**

- Ability to create and manage automated tasks using batch files and Task Scheduler.

5. **Server Administration**

- Skills in server setup, RAID configuration, OS installation, and virtualization using HYPER-V.

6. **Active Directory and DNS Management**

- Proficiency in setting up and managing Active Directory Services, DNS, and DHCP on Windows Server.

7. **Web Application Development**

- Experience in developing web applications using the .NET framework and hosting them via IIS.

8. **Presentation and Communication**

- Ability to create and deliver presentations on technical topics, such as the role of IT in the textile industry.

9. **Windows Application Development.**

- Ability to Develop a Windows form and connecting it to the database with the working functionalities.

Conclusion

My internship at Reliance Industries Limited was a transformative experience, providing me with a comprehensive understanding of various IT domains. Through practical applications and hands-on sessions which enabled me to bridge theory with practice effectively. Under the guidance of experienced mentor I navigated complex tasks and challenges with confidence, enhancing my problem-solving abilities and technical expertise.

This internship not only deepened my understanding of IT infrastructure and industry-specific applications but also underscored the pivotal role of technology in driving operational efficiency and innovation. These experiences have prepared me for future challenges in the IT sector, equipping me with valuable insights and practical skills.