

Industrial Internship Report on**"URL Shortner"****Prepared by****[Santoshi Biswal]***Executive Summary*

This report provides details of the Industrial Internship provided by upskill Campus and The IoT Academy in collaboration with Industrial Partner UniConverge Technologies Pvt Ltd (UCT).

This internship was focused on a project/problem statement provided by UCT. We had to finish the project including the report in 6 weeks' time.

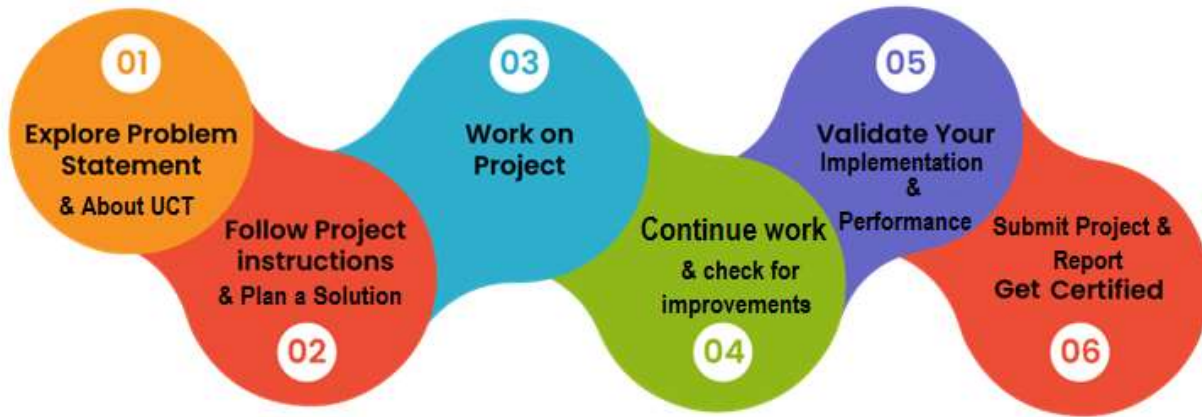
My project was (URL shortner)

This internship gave me a very good opportunity to get exposure to Industrial problems and design/implement solution for that. It was an overall great experience to have this internship.

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1 Preface



2 Introduction

2.1 About UniConverge Technologies Pvt Ltd

A company established in 2013 and working in Digital Transformation domain and providing Industrial solutions with prime focus on sustainability and RoI.

For developing its products and solutions it is leveraging various **Cutting Edge Technologies e.g. Internet of Things (IoT), Cyber Security, Cloud computing (AWS, Azure), Machine Learning, Communication Technologies (4G/5G/LoRaWAN), Java Full Stack, Python, Front end** etc.



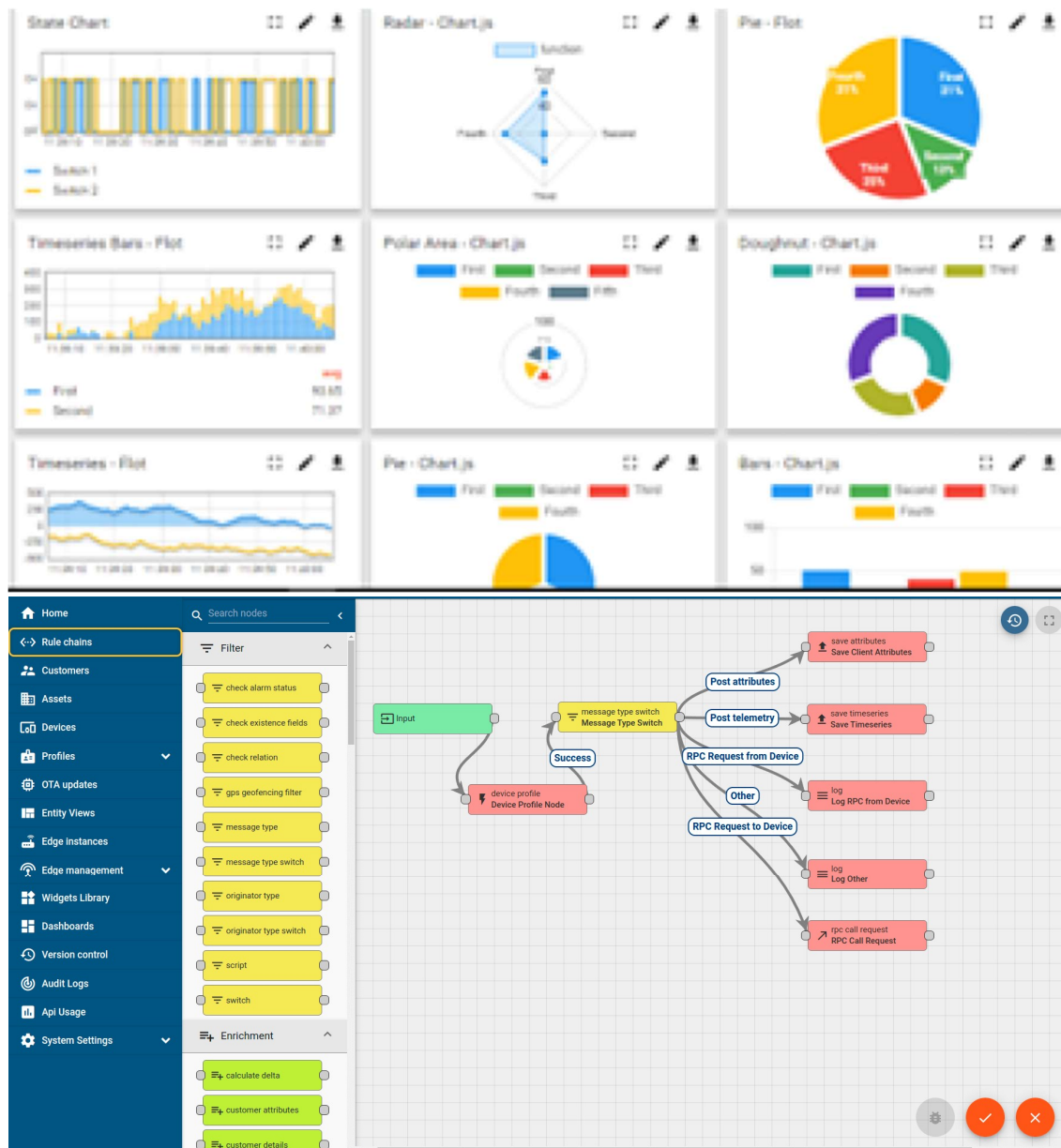
i. UCT IoT Platform ()

UCT Insight is an IOT platform designed for quick deployment of IOT applications on the same time providing valuable “insight” for your process/business. It has been built in Java for backend and ReactJS for Front end. It has support for MySQL and various NoSql Databases.

- It enables device connectivity via industry standard IoT protocols - MQTT, CoAP, HTTP, Modbus TCP, OPC UA
- It supports both cloud and on-premises deployments.

It has features to

- Build Your own dashboard
- Analytics and Reporting
- Alert and Notification
- Integration with third party application(Power BI, SAP, ERP)
- Rule Engine



FACTORY WATCH

ii. Smart Factory Platform ()

Factory watch is a platform for smart factory needs.

It provides Users/ Factory

- with a scalable solution for their Production and asset monitoring
- OEE and predictive maintenance solution scaling up to digital twin for your assets.
- to unleashed the true potential of the data that their machines are generating and helps to identify the KPIs and also improve them.
- A modular architecture that allows users to choose the service that they what to start and then can scale to more complex solutions as per their demands.

Its unique SaaS model helps users to save time, cost and money.



Machine	Operator	Work Order ID	Job ID	Job Performance	Job Progress		Output		Rejection	Time (mins)				Job Status	End Customer
					Start Time	End Time	Planned	Actual		Setup	Pred	Downtime	Idle		
CNC_S7_81	Operator 1	WO040520001	4168	58%	10:30 AM		55	41	0	80	215	0	45	In Progress	i
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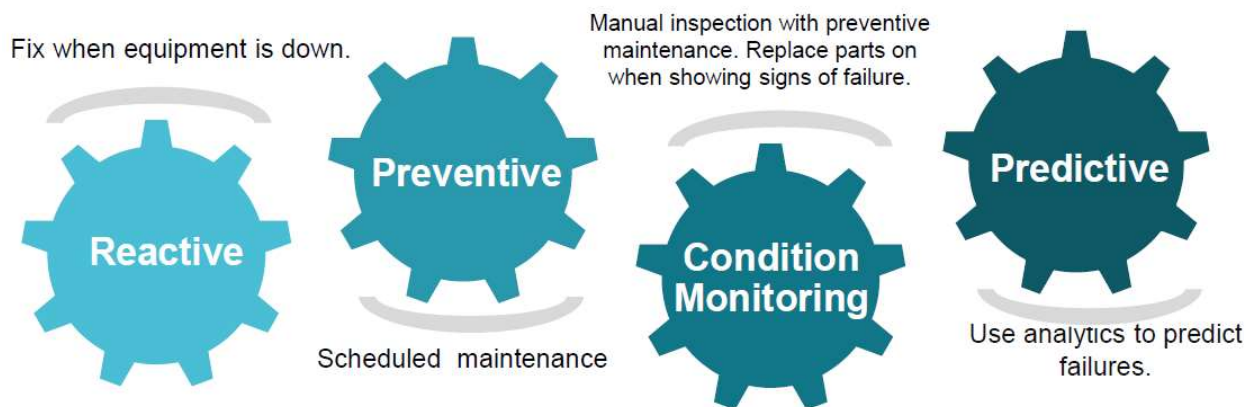


iii. LoRaWAN based Solution

UCT is one of the early adopters of LoRAWAN technology and providing solution in Agritech, Smart cities, Industrial Monitoring, Smart Street Light, Smart Water/ Gas/ Electricity metering solutions etc.

iv. Predictive Maintenance

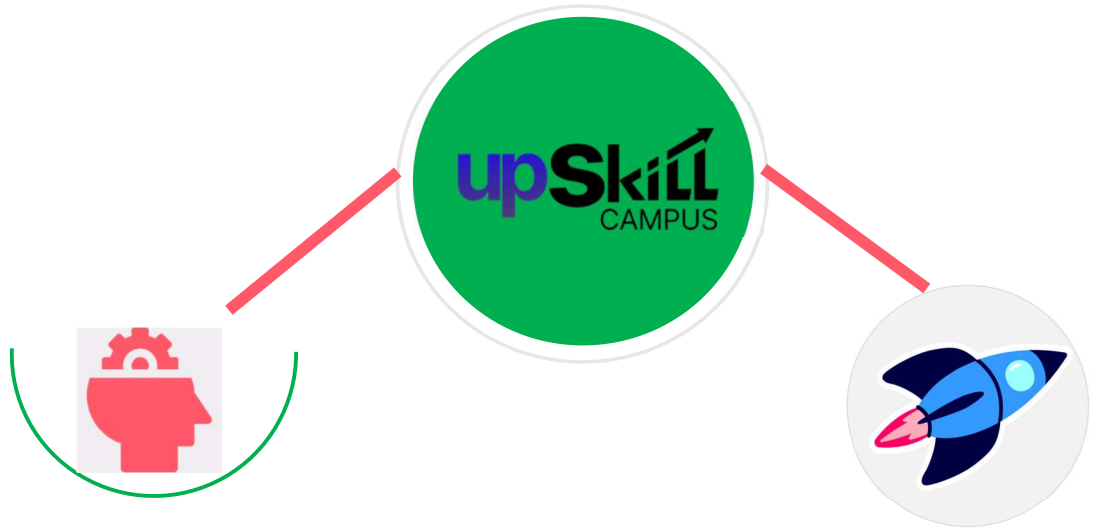
UCT is providing Industrial Machine health monitoring and Predictive maintenance solution leveraging Embedded system, Industrial IoT and Machine Learning Technologies by finding Remaining useful life time of various Machines used in production process.



2.2 About upskill Campus (USC)

upskill Campus along with The IoT Academy and in association with Uniconverge technologies has facilitated the smooth execution of the complete internship process.

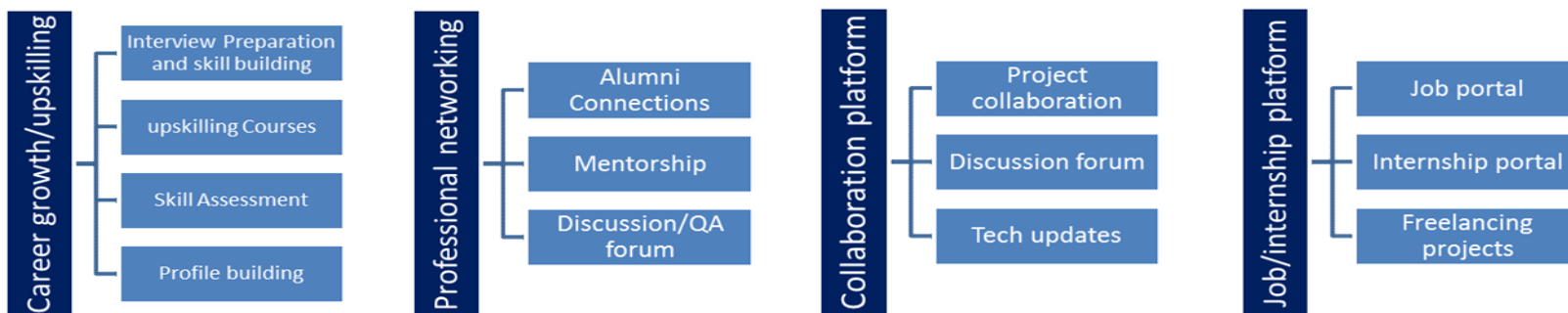
USC is a career development platform that delivers **personalized executive coaching** in a more affordable, scalable and measurable way.



Seeing need of upskilling in self paced manner along-with additional support services e.g. Internship, projects, interaction with Industry experts, Career growth Services

upSkill Campus aiming to upskill 1 million learners in next 5 year

<https://www.upskillcampus.com/>



2.3 The IoT Academy

The IoT academy is EdTech Division of UCT that is running long executive certification programs in collaboration with EICT Academy, IITK, IITR and IITG in multiple domains.

2.4 Objectives of this Internship program

The objective for this internship program was to

- get practical experience of working in the industry.
- to solve real world problems.
- to have improved job prospects.
- to have Improved understanding of our field and its applications.
- to have Personal growth like better communication and problem solving

2.5 Glossary

Terms	Acronym

3 Problem Statement

Description: The URL shortener is a Python project that converts long URLs into shorter, more manageable links. It takes a long URL as input, generates a unique shortened URL, and redirects users to the original URL when the shortened link is accessed.

4 Existing and Proposed solution

URL shorteners serve an essential role in the modern internet ecosystem, offering numerous benefits and fulfilling various needs. Here are some of the key reasons why URL shorteners are important and widely used:

1. **Space-saving:** URL shorteners reduce the length of long URLs, which is particularly useful for platforms with character limits, such as social media platforms like Twitter. This helps users share links without worrying about exceeding the character limit.
2. **Shareability:** Shortened URLs are easier to share, remember, and communicate, making them more user-friendly for sharing in emails, text messages, or on printed materials.
3. **Aesthetics and Branding:** Lengthy URLs can look cluttered and unattractive. URL shorteners allow individuals and businesses to create clean and branded links that reflect their identity or the content of the page they are sharing.
4. **Tracking and Analytics:** Many URL shorteners offer tracking features that allow users to monitor how many times a link has been clicked, the geographic location of the users, and other relevant analytics. This data can be valuable for marketing and understanding user behavior.
5. **Redirection and Link Management:** URL shorteners make it easy to redirect a short link to a different target URL. This feature is helpful when a link needs to be updated or changed without affecting the short URL that has already been shared.
6. **QR Code Generation:** URL shorteners often provide the ability to generate QR codes for the shortened links. QR codes are scannable by smartphones, enabling easy access to the linked content.

7. Link Customization: Some URL shorteners allow users to customize the end of the shortened URL to make it more memorable or descriptive, enhancing the user experience.

8. Link Security: Advanced URL shorteners may provide security features like link expiration, password protection, or the ability to restrict access to specific users.

Despite these benefits, it's important to note that there are potential downsides to URL shorteners as well. Shortened links can hide the actual destination, leading to a lack of transparency and security concerns. Users may unknowingly click on malicious links, as they don't know where the link will take them. As a result, some platforms and security tools may block or warn against clicking on certain shortened URLs.

In summary, URL shorteners play a crucial role in making URLs more manageable, shareable, and trackable. However, users should exercise caution when clicking on shortened links and be aware of potential security risks associated with their use.

4.1 Code submission (Github link) - <https://github.com/Santoshi1904/URL-SHORTENER->

4.2 Report submission (Github link) : first make placeholder, copy the link.

5 Proposed Design/ Model

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6 Performance Test

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7 My learnings

This virtual Internship at Upskills campus was a valuable experience in terms of skills development and remote collaboration. Despite the challenges of remote communication and self-discipline, I successfully engaged in Python programming tasks.

8 Future work scope

Scope: The scope of this project involves designing a user interface to input long URLs and display the shortened links, implementing a database to store the mapping between original and shortened URLs, and developing functions to generate unique shortened URLs and handle redirection.