**Industrial Internship Report on Projects:**

* **URL Shortner**
* **File Organizer**
* **Password Manager**
* **Quiz Game**

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| *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 a URL shortener, streamlining long web addresses into concise links for effortless sharing and accessibility across various platforms, fostering seamless online communication.  My project was a file organizer, meticulously engineered to efficiently categorize and manage digital files, promoting enhanced organization and accessibility within complex data ecosystems, thus optimizing productivity and workflow efficiency.  My project was a password manager, employing robust encryption protocols to safeguard users' sensitive login credentials, providing a secure and convenient solution for managing and accessing digital identities across multiple platforms with ease.  My project was a quiz game, creatively developed to engage users in entertaining and educational challenges, offering a dynamic platform for learning and entertainment while fostering critical thinking and knowledge retention in an interactive and enjoyable format.  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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# Preface

During the six weeks of my internship, I delved into the realm of software development, gaining invaluable hands-on experience that significantly contributed to my career development. The internship provided me with a platform to apply theoretical knowledge to real-world projects, honing my technical skills and enhancing my problem-solving abilities.

My project focused on developing essential tools to address modern-day challenges in digital management and security. Specifically, I worked on a suite of applications including a URL shortener, a file organizer, a password manager, and a quiz game. Each project aimed to streamline tasks, improve efficiency, and enhance user experience in their respective domains.

The internship with USC/UCT offered a unique opportunity to work alongside industry experts and mentors, providing guidance and support throughout the project. This collaborative environment fostered growth and learning, allowing me to explore new technologies and methodologies while gaining insights into industry best practices.

The problem statement revolved around addressing the increasing demand for efficient digital solutions in today's fast-paced world. With the proliferation of online activities, there is a growing need for tools that can simplify tasks, enhance productivity, and ensure data security. My projects aimed to tackle these challenges by providing innovative solutions tailored to meet the evolving needs of users.

Overall, the internship experience with USC/UCT not only equipped me with technical skills but also instilled in me a sense of professionalism, teamwork, and adaptability – essential attributes for success in the ever-changing landscape of the tech industry. It served as a stepping stone in my career journey, providing me with valuable insights and experiences that will undoubtedly shape my future endeavors.

This is how all planned:



I would like to express my sincere gratitude to several individuals who have contributed directly or indirectly to my internship journey.

# Introduction

## 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 RoIe.

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.



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

**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 unleased 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.



**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.

**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.



## 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.



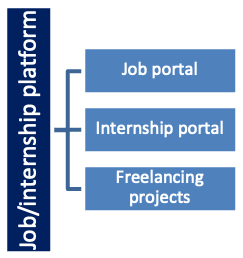
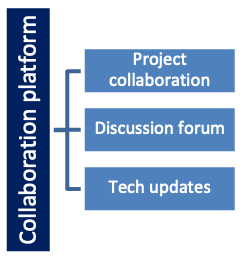
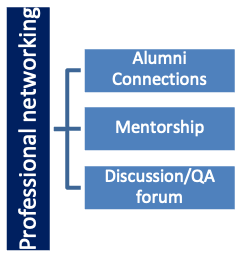
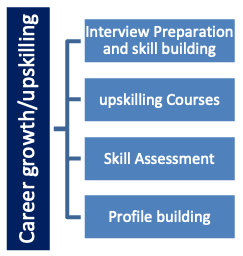


<https://www.upskillcampus.com/>



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



## 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.

## 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’s

## Glossary

1. **URL:** Uniform Resource Locator, a reference to a web resource that specifies its location on a computer network and the mechanism for retrieving it, commonly known as a web address.
2. **File Organizer:** A software tool or application designed to categorize, sort, and manage digital files stored on a computer or cloud storage, facilitating easy access and organization.
3. **Password Manager:** A software application or service that securely stores and manages passwords and login credentials for various online accounts, often providing features such as password generation, autofill, and encryption.
4. **Quiz Game:** An interactive game or application that presents users with questions or challenges to test their knowledge on specific topics or subjects, often including multiple-choice questions, scoring systems, and leaderboard functionalities.

# Problem Statement

1. **URL Shortener:**

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.

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.

1. **File Organizer:**

Description: The file organizer is a Python project that helps users organize their files in a directory. It scans a specified directory, categorizes files based on their type (e.g., images, documents, videos), and moves them into respective folders.

Scope: The scope of this project involves designing a user interface to specify the directory to organize, implementing functions to identify file types and create folders, and developing a file-moving algorithm to organize files into the appropriate folders.

1. **Password Manager:**

Description: The password manager is a Python project that securely stores and manages user passwords. It allows users to store their passwords for various accounts, generate strong passwords, and retrieve passwords when needed.

Scope: The scope of this project involves implementing encryption algorithms to secure password storage, designing a user interface to input and retrieve passwords, and developing functions to generate strong passwords and store/retrieve them from a database.

1. **Quiz Game:**

Description: The quiz game is a Python project that quizzes users on various topics. It reads questions and answers from a file or database, presents them to the user, and keeps track of their score.

Scope: The scope of this project involves designing a user interface to display questions and collect user answers, implementing a database or file system to store quiz data, and developing a scoring algorithm to track the user's progress and calculate their final score.

# Existing and Proposed solution

Develop comprehensive solutions for each domain:

* **URL Shortener:** Introduce advanced customization options, detailed analytics, and enhanced security features such as link expiration and password protection.
* **File Organizer:** Implement intelligent algorithms for automatic file categorization, intuitive user interfaces, and seamless integration with popular file storage platforms.
* **Password Manager:** Enhance security measures through robust encryption methods, multi-factor authentication, and regular security audits. Provide intuitive user interfaces across various devices and platforms.
* **Quiz Game:** Develop an extensive database of diverse quiz questions, customizable quiz creation tools, and innovative gameplay features to promote engagement and learning.

## Code submission (GitHub Link):

This is my GitHub repository containing project’s code:

**https://github.com/krsna016/upskill-campus.git**

## Report submission (GitHub link):

## first make placeholder, copy the link.

# Performance Test

This is very important part and defines why this work is meant of Real industries, instead of being just academic project.

Here we need to first find the constraints.

How those constraints were taken care in your design?

What were test results around those constraints?

Constraints can be e.g. memory, MIPS (speed, operations per second), accuracy, durability, power consumption etc.

In case you could not test them, but still you should mention how identified constraints can impact your design, and what are recommendations to handle them.

## Test Plan/ Test Cases

## Test Procedure

## Performance Outcome

# My learnings

You should provide summary of your overall learning and how it would help you in your career growth.

# Future work scope

You can put some ideas that you could not work due to time limitation but can be taken in future.