

FINAL REPORT

Preface:

Industries prefer the candidates who have good technical/soft skills and industrial projects exposure through various internships. So I had taken internship in Upskill campus and Upskill campus with Uniconverge technologies provided the free internships in various domains .I had choosen python domain and below information is the entire journey from first day to till submitting the final report.

Introduction:

About Uniconverge technologies Pvt.Ltd:

Uniconverge technologies Founded in 2013, Uniconverge Technologies has quickly established itself as a leading provider of innovative and high-quality digital solutions. Our team consists of talented and experienced professionals who are passionate about delivering exceptional results for our clients. With a focus on customer satisfaction and a commitment to excellence, we have built a reputation for being a trusted and reliable partner for businesses of all sizes. We have expertise in 'Wireless Communication' and 'Internet of Things, product development and consulting services to companies working in Small Cells, Mobile Platforms, Healthcare, Medical Devices, Logistics, Transportation and Manufacturing domains.

At Uniconverge Technologies mission is to empower businesses to succeed in a rapidly evolving digital landscape. It do this by providing innovative and customized solutions that meet the unique needs of each of our clients. It believe in building long-lasting relationships with our clients based on trust, transparency, and mutual respect.

UCT IoT Platform:

Industrial process valves are widely used in instrumentation and process lines. Historically, a range of instruments must be used to monitor pressure, temperature, flow, humidity, and indication of position/state. This process is not ideal for safety and efficiency. To address this, Industry 4.0 implementation and expansion of the Internet of Things (IoT) applications enables integration of these capabilities into one mechanism with the ability to maintain control and communicate with a central monitoring system.

UCT Fluid Solutions has developed a breakthrough in the process valves industry with IoT H800 Smart Valve. The IoT H800 features constant monitoring, management, and control of position, pressure, flow, humidity, and temperature. The IoT H800 enables increased safety, reduced downtime costs, and improved performance. One of the smart valve's unique features, thanks to its wide array of sensors and capabilities, is that it can be activated by triggering scenarios such as downstream pressure drop, elevated temperature events, vibration, etc.

PYTHON INTERNSHIP FINAL REPORT

IoTH800 innovation embodies convenient cohesion with customers' existing systems. IoT allows immediate response for safety events, machine learning and optimization, machinery and equipment protection, device tracking, and more. As an all-in-one product, the IoTH800 smart valve also eliminates possible leakage sources used with a standard monitoring approach. Our customers are global leaders in gas technology and services, which require predictive maintenance and a high level of safety. In one critical use application, our product has been used to perform continuous measurement of pressure in a hydrogen cylinders bundle. The IoTH800L-LoRa valve was used to provide real-time detection of pressure drop and sent alert notifications when low pressure was detected.

In addition to identifying system issues, pressure monitoring enables refill orders to be triggered. Our smart valve solution can also turn on auxiliary hydrogen flow (backup hydrogen bundle) to the system if cylinder bundle pressure is too low. Our product closes the valve if leakage is detected based on differential pressure between the inlet and outlet. Each year, the Energy Industries Council (EIC) looks at growth strategies from member companies employed in challenging operating conditions and identifies the top contenders in the industry. On December 2, UCT was recognized with the Service and Solution Award. The selection was based on adding value to their OPEX and O&M value chain, and the enhanced scope of meeting customer needs efficiently.

About Upskill Campus:

" **Upskill Campus** is a fast-growing ed-tech platform that is meant to **upskill** students, freshers, working professionals, faculty, entrepreneurs, etc. We have the vision to provide an immersive experience for our learners to ensure their exhaustive growth. To provide 24x7 learning on the latest technologies that will not only help you get a better job but will also encourage you to do hands-on exercises and explore more."

About IoT Academy:

The IoT Academy, we provide training in Coding, Robotics, and IoT. Our vision encourages coding as a form of minds-stretching. We strive to provide affordable training with a customized curriculum that allows each individual student to develop logical thinking and problem-solving skill, an invaluable skill set for the future economy.

Objectives of Internship:

Upskill campus in partnership with its industrial partner UniConverge Technologies (UCT) has brought Internship program (FREE) that is inline to AICTE and Government of India mandate. We aim to equip students with practical knowledge and skills in their respective domains so that they can excel in their career.

UCT offers a wide gamut of services and solutions across the world in IOT, Wireless Communication, Industry 4.0 & Predictive Maintenance. For developing its products and solutions it is leveraging various Cutting Edge Technologies e.g. Internet of

PYTHON INTERNSHIP FINAL REPORT

Things (IoT), Cloud computing (AWS, Azure), Machine Learning, Communication Technologies (4G/5G/LoraWAN), Java Full Stack, Python, Front end etc. Students will get industrial projects from Uniconverge Technologies (UCT) based on these technologies.

By enrolling in our internship program and completing it

The candidate will get practical experience of working in the industry.

Will be able to solve real world problems.

Will have improved job prospects.

Improved understanding of your field and its applications.

Personal growth like better communication and problem solving.

References:

I referred to get the idea for Upskill campus, lot academy is Google and Upskill campus Official website.

About the project:

The URL Shortener project is a Python-based solution aimed at converting long URLs into shorter, more user-friendly links. This project involves the development of a user interface to accept lengthy URLs and generate corresponding shortened URLs. It also encompasses the implementation of a database system to store the mapping between original and shortened URLs. The primary goal is to simplify the sharing and management of URLs by creating concise and easy-to-remember links. Additionally, the project includes functionalities for URL redirection, ensuring that users are seamlessly redirected to the original long URL when accessing the shortened link. By supplying a streamlined and efficient URL shortening service, this project aims to enhance user experience and improve the usability of long web addresses.

Project and Final report Linkson Git Hub:

Code submission link:

[Upskill_campus/url_shortener.py at main · Mahendravusa002/Upskill_campus \(github.com\)](https://github.com/Mahendravusa002/Upskill_campus/blob/main/url_shortener.py)

Final report submission link:

[Mahendravusa002/Upskill_campus \(github.com\)](https://github.com/Mahendravusa002/Upskill_campus/blob/main/Final_report.pdf)

Proposed design:

In the Above program is made with by use of some of websites like Flask, and Sqlite3, String, Random modules.

Flask:

The Flask module is a web framework for Python that allows you to build web applications. It provides tools, libraries, and mechanisms to handle HTTP requests, route URLs to appropriate functions, manage sessions, and more. Flask follows the

WSGI (Web Server Gateway Interface) specification and can be easily integrated with other libraries and frameworks.

To use the Flask module, you need to have it installed. You can install Flask using pip, the Python package manager, by running the following command:

➤ `pip install Flask`

Once Flask is installed, you can import it into your Python script and start building your web application using Flask's features and functions. The code you provided is an example of a Flask application that implements a URL shortener. It defines routes, handles HTTP requests, interacts with a SQLite database, and renders templates to generate web pages.

To run the Flask application, you typically execute the script from the command line. For example, if your script is named `app.py`, you can run it using the command:

➤ `python app.py`

This will start the Flask development server, and your application will be accessible at the specified host and port (usually `http://localhost:5000/` by default).

Please note that the code you provided is missing some parts related to the HTML template files (`index.html`). Make sure you have the necessary template files in a `templates` folder in the same directory as your script for the application to work properly.

SQLite3:

The **sqlite3** module in Python provides an interface for working with SQLite databases. SQLite is a lightweight, serverless, and self-contained relational database engine. It allows you to create, query, and manage databases using SQL (Structured Query Language).

The **sqlite3** module comes bundled with Python, so you don't need to install any additional packages. To use the **sqlite3** module, you can import it in your Python script using the following line:

➤ `Import sqlite3`

To run the Url Shortener program :

1. Create a new Python file and save it with a `.py` extension (e.g., `url_shortener.py`).
2. Install the required dependencies using `pip install flask` and `pip install sqlite3`.
3. Run the Python file (`python url_shortener.py`).
4. Open your web browser and go to `http://localhost:5000` to access the URL shortener web application.

Make sure you have Flask and SQLite3 installed before running the code. The code uses Flask to handle web requests and SQLite3 as the database to store URL mappings.

PYTHON INTERNSHIP FINAL REPORT

Conclusion:

I am very happy to share my experience about my Python internship. I have learned so many new things in this Internship like how python is used for real time projects and syntax of python programming, uses of python, from where it is started many more things.

I am delighted to have successfully completed my first, second, third, fourth, fifth week, final week of internship, during which I had the opportunity to work on the URL shortener project and gain a comprehensive understanding of its underlying concepts. This third week has been incredibly insightful, and I am grateful for the valuable knowledge and experience I have acquired thus far.

Throughout the last weeks and this week, I delved into the world of URL shortening, exploring various techniques and approaches used in this domain. Now, I familiarized myself with the fundamental principles and mechanics behind URL shortening, including the use of redirection and mapping techniques to efficiently transform lengthy URLs into concise and manageable forms.

In closing, completing of my internship on I had worked on the URL shortener project. I am grateful for the opportunity to gain experience, grow, and contribute to a project that holds immense significance in the realm of web development. I eagerly expect the challenges and achievements that lie ahead as I continue to make strides in my internship journey.

References:

During my of internship journey, I embarked on the URL shortener project and dedicated my efforts to gaining a deep understanding of its core concepts. Week by week I have learnt some core concepts about the my project. I can confidently say that I have made quick progress and achieved the goals I set out to accomplish.

Some of the websites I referred are LearnPython.org, W3Schools, Javatpoint, and especially I used UPSKILL INSTITUTE OF LEARNING channel in youtube and I referred the python e-book (Python for Everyone) which upskill had provided in my entire journey of my internship.

Presented By:

VUSA MAHENDRA

Mail: mahendravusa2000@gmail.com

Contact: 8096820342

Department of Data Science

Madanapalle Institute of Technology and Science

Angallu (V), NH - 205, Kurabalakota (M),

Madanapalle, Andhra Pradesh

Postal Code: 517325

Country: India