Industrial Internship Report on

”Password manager using Python”

Prepared by

Burri Nagarjuna

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 (Tell about ur Project) 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.

TABLE OF CONTENTS

1 Preface

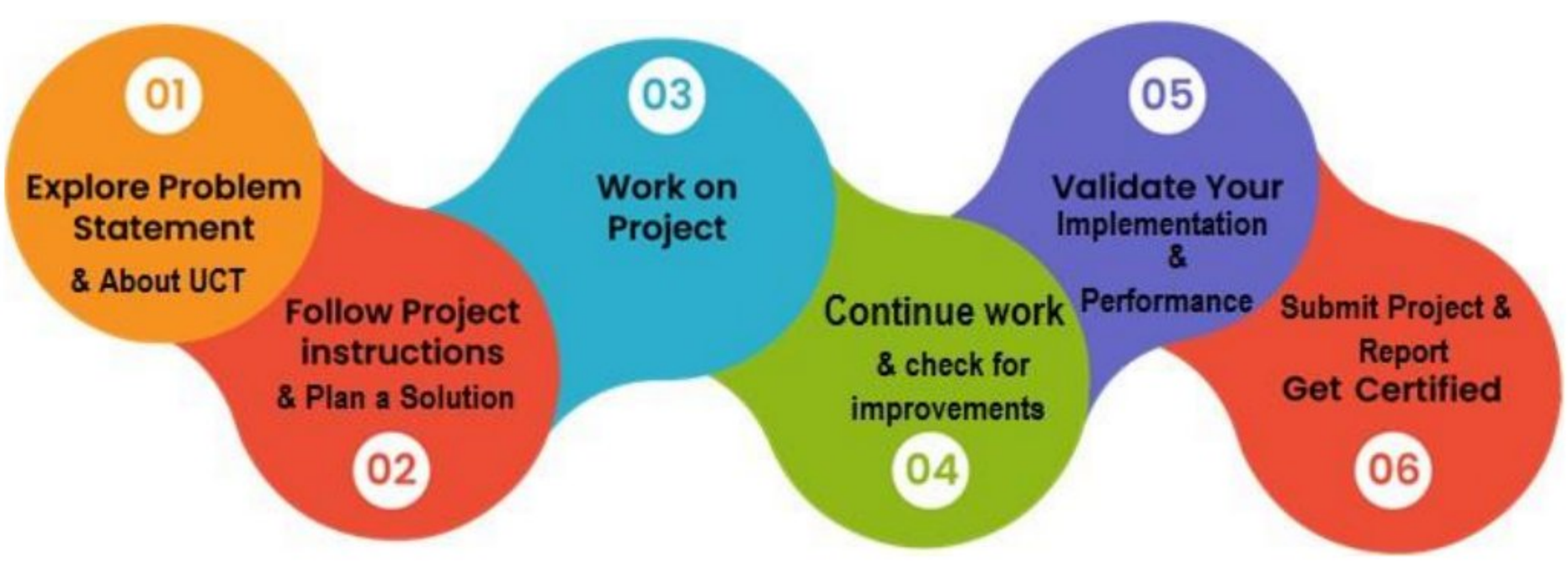
Summary of the whole 6 weeks' work.

About need of relevant Internship in career development.

Brief about Your project/problem statement.

Opportunity given by USC/UCT.

How Program was planned



Your Learnings and overall experience.

Thank to all (with names), who have helped you directly or indirectly.

Your message to your juniors and peers.

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)

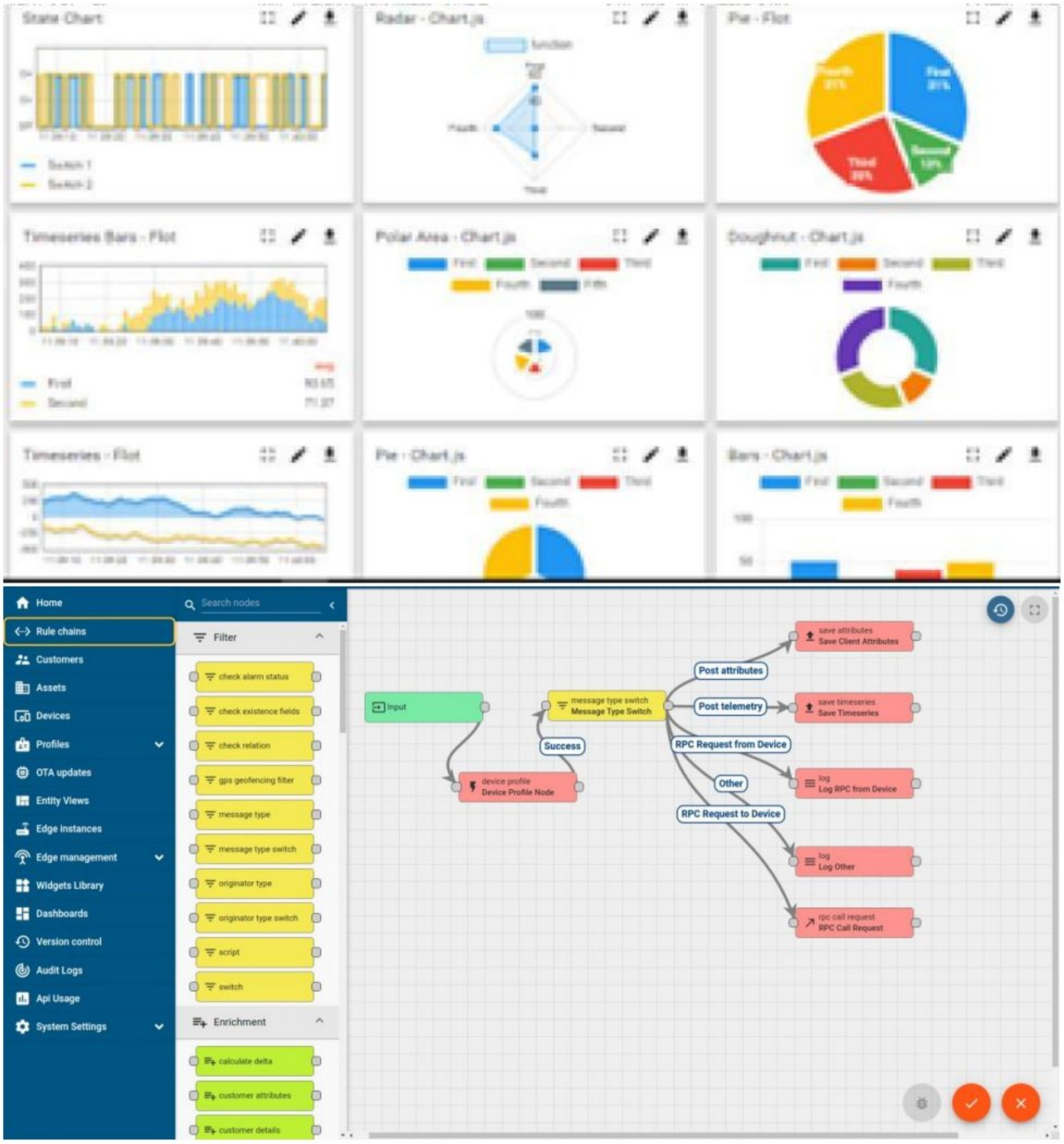
UCT Insight is an IOT platform designed for quick deployment of IOT applications on the same time providing valuable "insight" for your process/business. It has been built in Java for backend and ReactJS for Front end. It has support for MySQL and various NoSql Databases.

- 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



ii. Smart Factory Platform (FACTORY WATCH)

.

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.

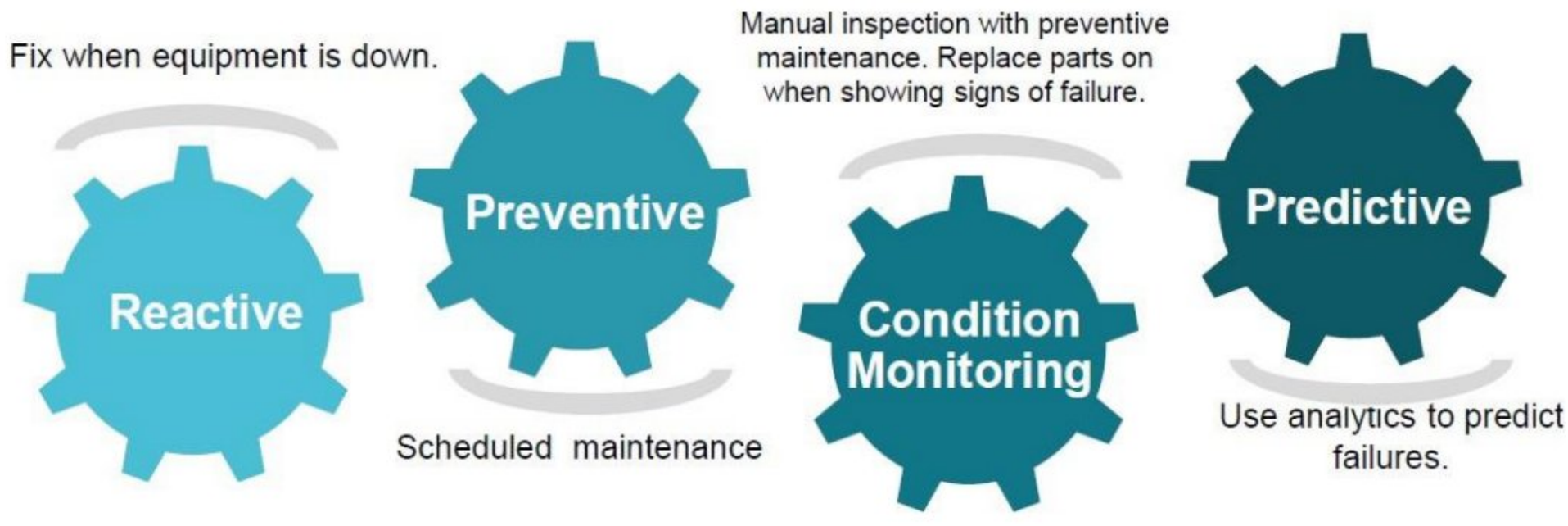
Machine	Operator	Work Order ID	Job ID	Job Performance	Job Progress		Output		Rejection	Time (mins)				Job Status	End Customer
					Start Time	End Time	Planned	Actual		Setup	Pred	Downtime	Idle		
CNC_S7_81	Operator 1	WO0405200001	4168	58%	10:30 AM		55	41	0	80	215	0	45	In Progress	i
CNC_S7_81	Operator 1	WO0405200001	4168	58%	10:30 AM		55	41	0	80	215	0	45	In Progress	i

iii. LoRaWAN based Solution

UCT is one of the early adopters of LoRAWAN teschnology 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)

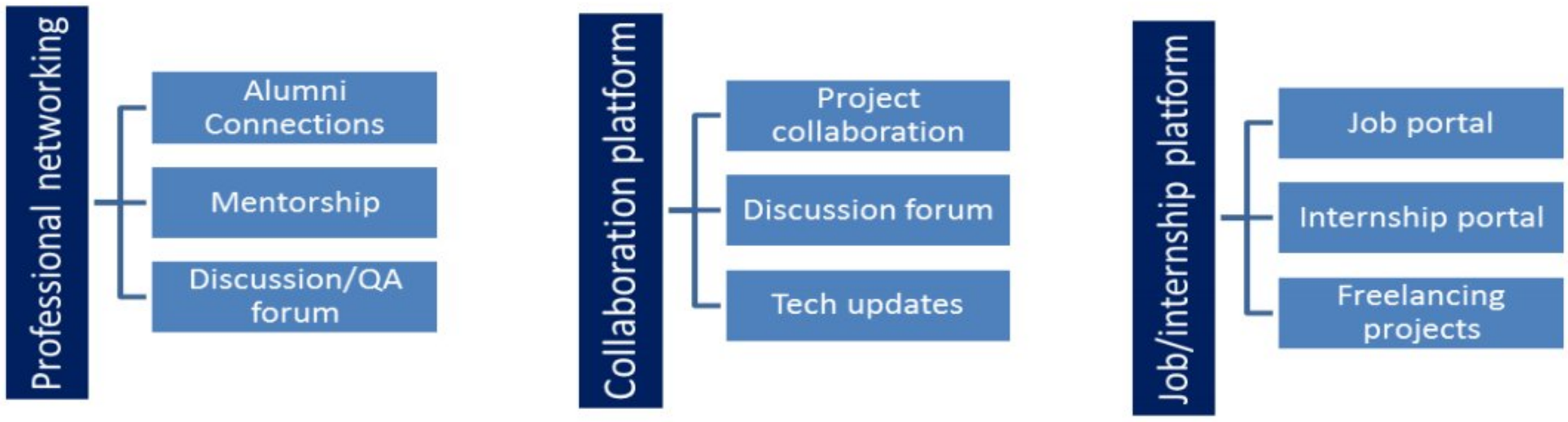
upskill Campus along with The IoT Academy and in association with Uniconverge technologies has facilitated the smooth execution of the complete internship process.

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 m additional support services e.g. Internship, projec ndustry experts, Career growth Services

https ilcampus.com/

upSkill Campus aimi to upskill 1 million lea in next 5 year



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 Reference

[1] Google

[2] YouTube

[3] geeksforgeeks

3 Problem Statement

Everything is fine

3.1 Glossary

Terms	Acronym

4 Existing and Proposed solution

Traditional Quiz Apps:

Strengths: Commonly used, straightforward design.

Limitations: Limited interactivity, often lacks engaging features.

Online Quiz Platforms:

Strengths: Offers scalability and accessibility.

Limitations: Generic interfaces, may not cater to specific user needs.

4.1 Code submission (Github link)

https://github.com/BurriNagarjuna/upskillcampus

4.2 Report submission (Github link) :

https://github.com/BurriNagarjuna

5 Proposed Design/ Model

5.1 Programming Implementation:

5.2 - Coded the backend logic using a programming language (e.g., Python).

5.3 - Integrated database interactions, algorithms, and user management.

5.4 Testing :

5.5 - Conducted unit tests for individual components.

5.6 - Performed integration testing to verify seamless interaction among modules.

5.7 - Executed system tests to validate the entire game flow.

5.8 Optimization:

5.9 **-** Identified and resolved performance bottlenecks.

5.10 - Applied optimization techniques for efficient resource usage.

5.11

5.12 User Acceptance Testing (UAT):

5.13 **-** Engaged real users or stakeholders to test the game in a controlleenvironment.

5.14 - Collected feedback for further refinements.

5.15

5.16 Deployment:

5.17 **-** Launched the quiz game for public access.

5.18 - Monitored initial usage patterns and addressed any unforeseen issues.

5.19

5.20 Maintenance and Updates:

5.21 **-** Implemented periodic updates based on user feedback.

5.22 High Level Diagram (if applicable)

Figure 1: HIGH LEVEL DIAGRAM OF THE SYSTEM

5.23 Low Level Diagram (if applicable)

5.24 Interfaces (if applicable)

Update with Block Diagrams, Data flow, protocols, FLOW Charts, State Machines, Memory Buffer Management.

6 Performance Test

Constraints Addressed:

In developing the quiz game, critical constraints like memory, processing speed, and UI responsiveness were considered.

Handling Constraints:

- Memory: Implemented efficient data structures.

- Processing Speed: Used optimized algorithms for retrieval and scoring.

- UI Responsiveness: Employed asynchronous operations to prevent freezes.

Test Plan/ Cases:

1. Memory Test: Checked large question set loading.

2. Processing Speed Test: Simulated heavy load.

3. UI Responsiveness:*Tested interactions during resource-intensive tasks.

Outcomes:

- Memory usage remained within limits.

- Game processing was swift under varying loads.

- UI maintained responsiveness, ensuring a positive user experience.

Impact and Recommendations:

Unaddressed constraints could lead to performance issues. Recommendations include continuous monitoring, periodic testing, and optimization techniques for future updates

7 My learnings

Creating a quiz game demonstrates practical application of programming skills, particularly in game development using Python. This experience enhances problem-solving, logic, and coding proficiency. The development of a quiz game showcases a hands-on understanding of software design and implementation, contributing positively to skill sets relevant in the field of game development or software engineering.

8 Future work scope

I want to become a python developer.

9 Performance Test

Constraints Addressed:

In developing the quiz game, critical constraints like memory, processing speed, and UI responsiveness were considered.

Handling Constraints:

- Memory: Implemented efficient data structures.

- Processing Speed: Used optimized algorithms for retrieval and scoring.

- UI Responsiveness: Employed asynchronous operations to prevent freezes.

Test Plan/ Cases:

1. Memory Test: Checked large question set loading.

2. Processing Speed Test: Simulated heavy load.

3. UI Responsiveness:*Tested interactions during resource-intensive tasks.

Outcomes:

- Memory usage remained within limits.

- Game processing was swift under varying loads.

- UI maintained responsiveness, ensuring a positive user experience.

Impact and Recommendations:

Unaddressed constraints could lead to performance issues. Recommendations include continuous monitoring, periodic testing, and optimization techniques for future updates

.

10 My learnings

Creating a quiz game demonstrates practical application of programming skills, particularly in game development using Python. This experience enhances problem-solving, logic, and coding proficiency. The development of a quiz game showcases a hands-on understanding of software design and implementation, contributing positively to skill sets relevant in the field of game development or software engineering.

11 Future work scope

More projects .