RAJALAKSHMI
ENGINEERING COLLEGE
An AUTONOMOUS Institution
Affiliated to ANNA UNIVERSITY, Chennai

Industrial Internship Report on Quiz Game Python Project

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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 Quiz game project provided by UCT. We had to finish the project including the report in 6 weeks' time. My project was generate the quiz from various topics and give the answers and their score. 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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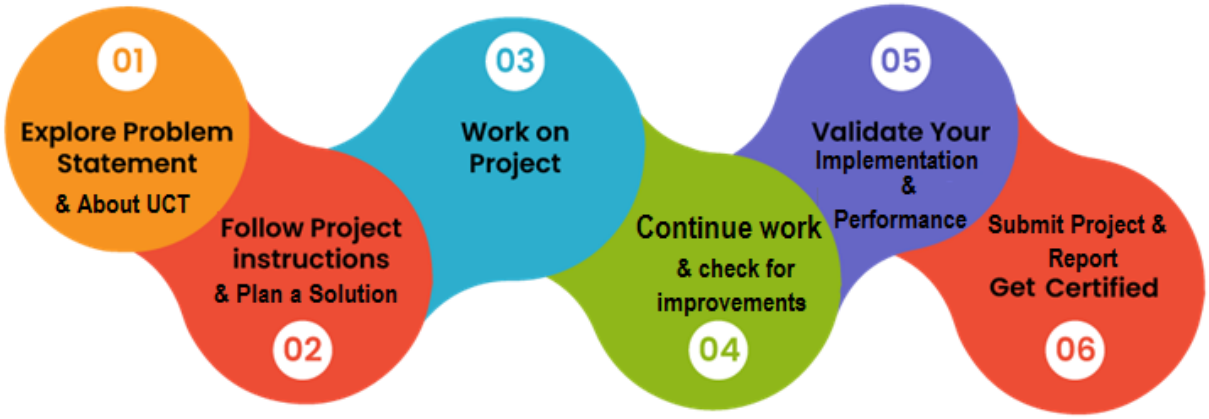
About need of relevant Internship in career development.

Brief about Your project/problem statement.

Opportunity given by USC/UCT.

How Program was planned



Your Learnings and overall experience.

Thank you to everyone who has helped me directly or indirectly.

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.

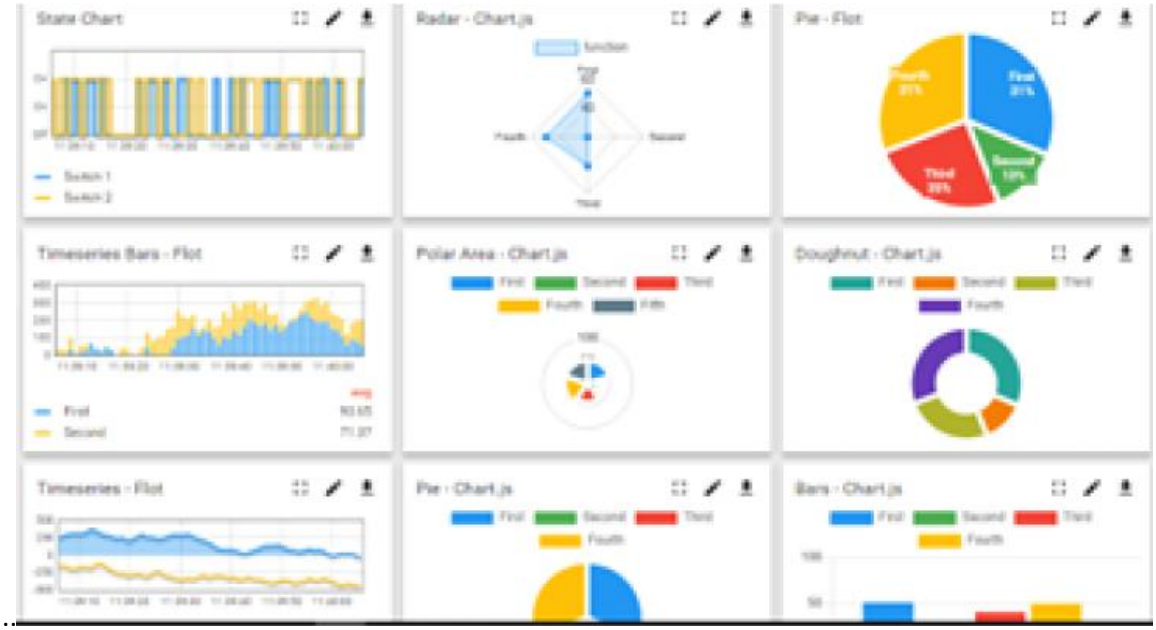
i. UCT IoT Platform (uct Insight)

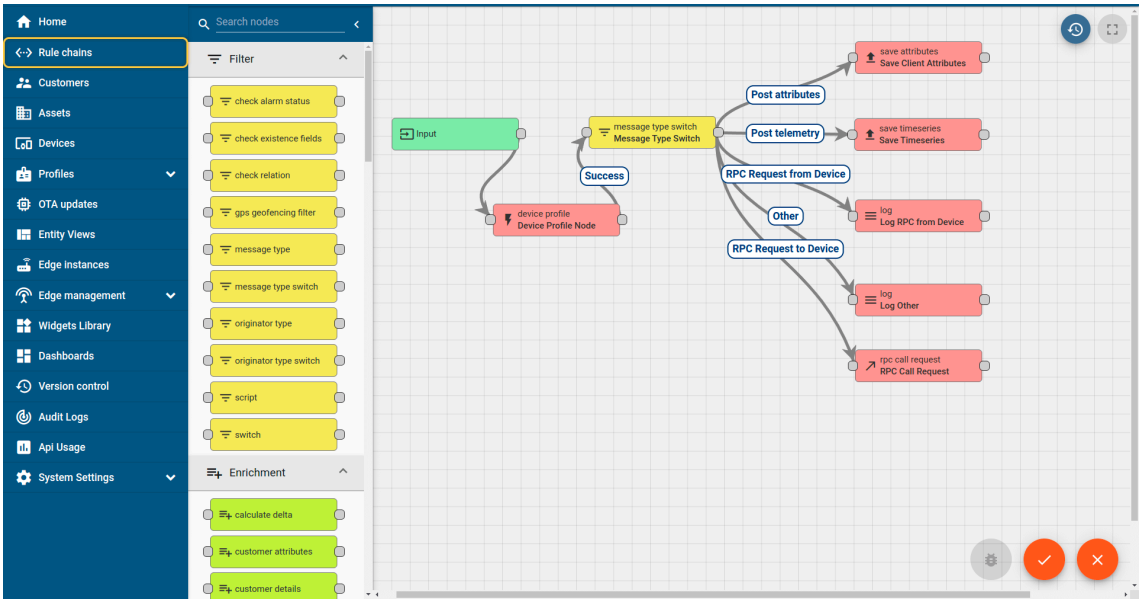
UCT Insight is an IOT platform designed for quick deployment of IOT applications on the same time providing valuable "insight" for your process/business. It has been built in Java for backend and ReactJS for Front end. It has support for MySQL and various NoSql Databases.

- 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
- Rule Engine


State Chart
Radar - Chart.js
Pie - Flot
Timeseries Bars - Flot
Polar Area - Chart.js
Doughnut - Chart.js
Timeseries - Flot
Pie - Chart.js
Bars - Chart.js


Home
Rule chains
Customers
Assets
Devices
Profiles
OTA updates
Entity Views
Edge instances
Edge management
Widgets Library
Dashboards
Version control
Audit Logs
Api Usage
System Settings
Search nodes
Filter
check alarm status
check existence fields
check relation
gps geofencing filter
message type
message type switch
originator type
originator type switch
script
switch
Enrichment
calculate delta
customer attributes
customer details
Input
message type switch
Message Type Switch
device profile
Device Profile Node
Success
Post attributes
Post telemetry
RPC Request from Device
Other
RPC Request to Device
save attributes
Save Client Attributes
save timeseries
Save Timeseries
log
Log RPC from Device
log
Log Other
rpc call request
RPC Call Request

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.

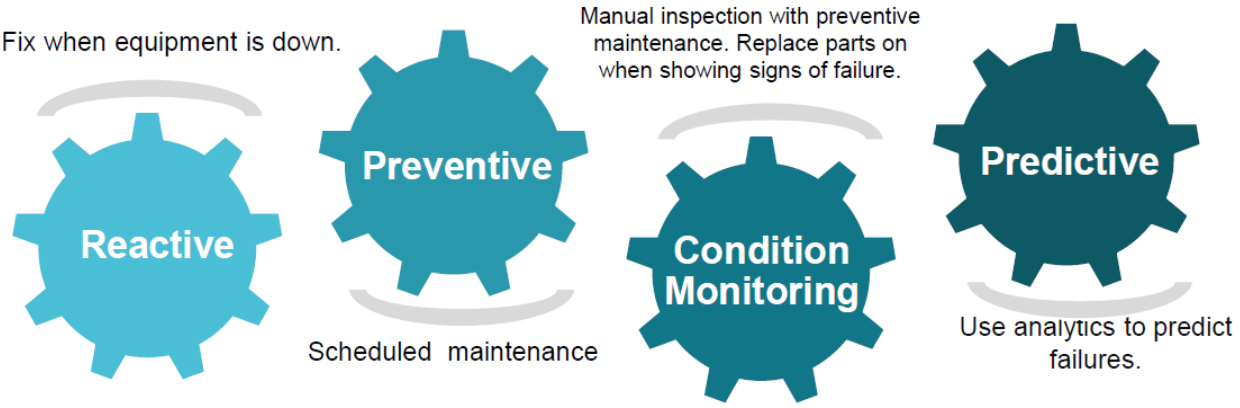
Machine	Operator	Work Order ID	Job ID	Job Performance	Job Progress		Output		Rejection	Time (mins)				Job Status	End Customer
					Start Time	End Time	Planned	Actual		Setup	Pred	Downtime	Idle		
CNC_S7_81	Operator 1	WO0405200001	4168	58%	10:30 AM		55	41	0	80	215	0	45	In Progress	i
CNC_S7_81	Operator 1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

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upSkill CAMPUS

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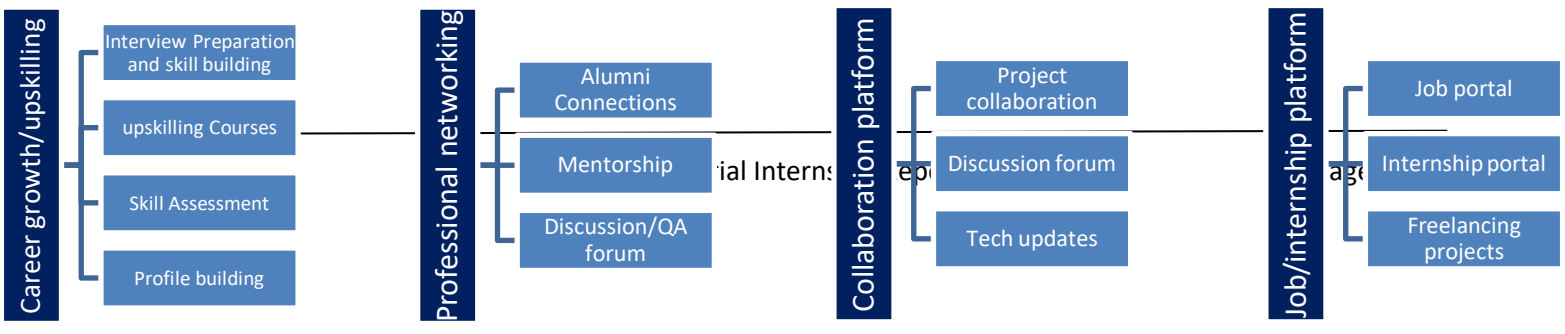
Seeing need of upskilling in self paced manner along-with additional support services e.g. Internship, projects, interaction with Industry experts, Career growth Services

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.

3 Problem Statement

Develop a Python-based quiz game that reads questions and answers from a data store, presents them in an engaging user interface, and tracks user performance. The goal is to provide an interactive learning tool that efficiently tests and reinforces user knowledge on various topics .

Solution:

The proposed solution is a Python-based quiz game that allows users to answer questions from three different subjects. The system reads questions and answers from a structured data store and presents them through an interactive user interface. It employs a smart answer validation mechanism that accepts correct answers even if there are minor spelling variations. The game calculates the percentage score and provides detailed performance feedback for each subject. Additionally, it analyzes the user's weakest subject and suggests areas for improvement, making the quiz a useful learning and self-assessment tool.

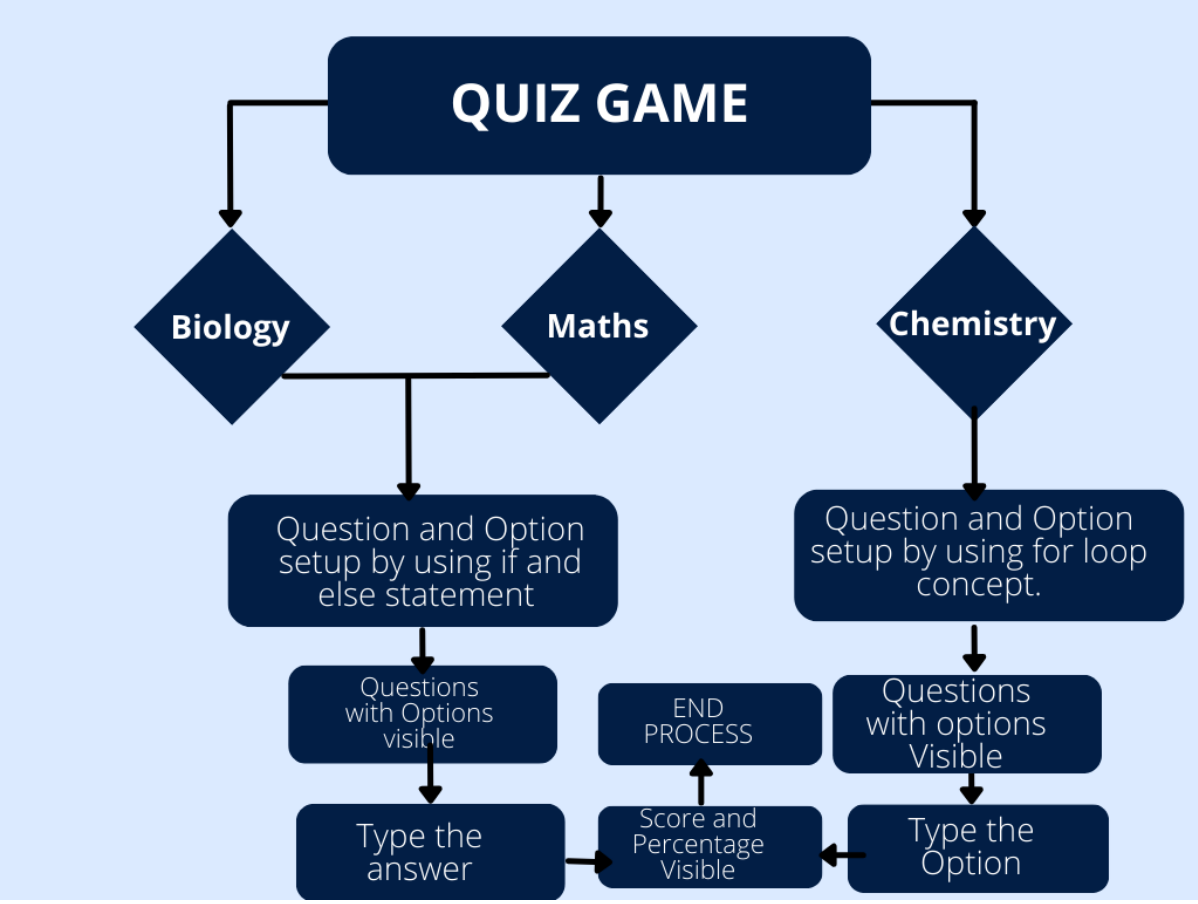
3.1 Code ad Report submission (Github link):

https://github.com/christypriya-33/upskillcampus.git

4 Proposed Design/ Model:

I use python language for the Quiz project generation.

4.1 Diagram:



5 My learnings

Conditional Statements (If-Else)

The if-else statement is used to evaluate user responses and determine whether an answer is correct. If the user's answer matches the correct option, a message confirming correctness is displayed, and the score is updated. Otherwise, the correct answer is shown, and no points are awarded. Additionally, if-else is used to analyze the user's overall performance and provide suggestions for improvement.

Loops (For Loop)

A for loop is used to iterate through the quiz questions, displaying each question along with its answer choices. This avoids repetitive code and makes the quiz more efficient. By looping through stored questions and answers, the program can dynamically present new questions to the user without manually writing individual prompts.

Tuples for Data Storage

Tuples are used to store quiz questions, answer options, and correct answers. Since tuples are immutable, they ensure that the quiz data remains unchanged during execution, preventing accidental modifications. This structure helps in organizing the questions efficiently while keeping them easily accessible during the quiz.

String Manipulation

String functions such as strip(), upper(), and capitalize() are used to standardize user input, ensuring that minor variations in typing do not affect answer validation. This improves the accuracy of the quiz by allowing answers with slight spelling differences to still be considered correct.

Mathematical Operations

Basic mathematical operations are used to calculate scores and percentages. The total correct answers are divided by the total number of questions to determine the percentage performance in each subject. This helps in generating meaningful feedback for the user about their strengths and areas needing improvement.

Print Statements for Display

Print statements are used throughout the program to display questions, provide feedback on answers, and show final scores. These statements ensure that the user receives clear instructions and results, making the quiz interactive and easy to understand.

6 Future work scope:

Dynamic Quiz Generation:

Create a system that generates quizzes automatically from a structured dataset, ensuring up-to-date, personalized assessments across multiple subjects with adaptive feedback based on user performance.

Integrated Educational Platform:

Combine the image-based learning module and the dynamic quiz generator to form a comprehensive educational tool, enhancing both visual learning and knowledge assessment in an interactive manner.

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