Industrial Internship Report on

”Quiz Game By Python ”

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Executive Summary

This report provides details of the Industrial Internship experience focused on a Python-based Quiz Game project.

The project involved building a console and GUI-based quiz game using Python, NumPy, Pandas and Tkinter, integrating features like scoring, data handling, and a countdown timer.

The internship offered valuable exposure to practical programming and solution design, enhancing both technical and analytical skills

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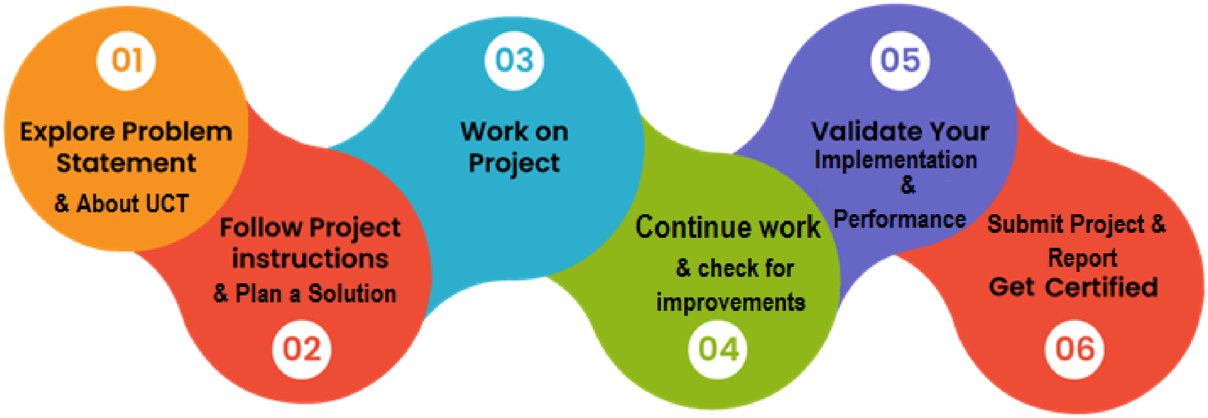
1 Preface

This 4-week internship, organized by Upskill Campus and UCT, allowed me to gain industry-level experience.

The focus was a simple yet functional Python project: a **Quiz Game**. The game tests a user's knowledge through timed multiple-choice questions.

The internship taught me how a project is planned, coded, tested, and documented in a professional setting.



The internship provided an essential experience in understanding real-world software project development. I sincerely thank Upskill Campus and UCT for this opportunity and guidance.

I encourage juniors to take such internships seriously as they significantly bridge academic learning with industrial practices.

2 Introduction

The internship was organized by **Upskill Campus** in collaboration with **UniConverge Technologies Pvt. Ltd. (UCT)**, offering a valuable opportunity for hands-on learning and real-world application of programming skills.

The focus of the internship was to design and implement a **Python-based Quiz Game** utilizing essential Python libraries like NumPy and Pandas, along with a graphical interface built using Tkinter.

2.1 About UniConverge Technologies Pvt. Ltd. (UCT)

Founded in 2013, **UCT** is a technology-driven company focused on digital transformation.

It provides industrial solutions with an emphasis on sustainability and Return on Investment (RoI).

UCT works across cutting-edge domains such as the Internet of Things (IoT), Cybersecurity, Machine Learning, Java Full Stack Development, Python, and Frontend Technologies.

UCT’s key platforms include:

- **UCT Insight** – A robust IoT platform for deploying industrial applications with features like dashboards, analytics, rule engines, and integration with third-party services (e.g., SAP, Power BI).
- **Factory Watch** – A smart factory solution for production and asset monitoring, predictive maintenance, and KPI improvement.

UCT is also known for leveraging **LoRaWAN**, AI/ML, and cloud infrastructure (AWS, Azure) for its solutions in Smart Cities, Agritech, and Industrial Automation.

2.2 About Upskill Campus

Upskill Campus (USC), in partnership with **The IoT Academy** and UCT, facilitates high-quality career development programs and internships. It aims to bridge the gap between academic knowledge and industry expectations through projects, mentorship, and skill-based training.

USC envisions empowering over a million learners in the coming years by delivering scalable, measurable, and affordable upskilling services in domains like IoT, Data Science, Web Development, and more.

Website: https://**www.upskillcampus.**

2.3 Objective

- Apply Python programming to real-world applications
- Develop end-to-end problem-solving skills
- Improve code structuring and debugging ability
- Understand project documentation and version control

2.4 Reference

[1] Python Official Documentation

[2] Tkinter GUI Guide

[3] NumPy, Pandas Documentation

2.5 Glossary

Term	Meaning
GUI	Graphical User Interface
Tkinter	Python GUI package
IDE	Integrated Development Environment

3 Problem Statement

To design and implement an interactive quiz game in Python that utilizes NumPy for computations, Pandas for question data handling, and Tkinter for graphical interface, with a focus on usability, scoring, and timed gameplay.

4 Existing and Proposed Solution

Existing: Quiz games exist on websites or apps, but many are web-based or complex.

Proposed:

A simple Python-based GUI quiz using `Tkinter`, with internal data from NumPy and Pandas. Features:

- Start menu
- 4-option MCQs
- Score tracker
- Result display
- Easy to modify/add questions

GitHub Code Repository:
Link:

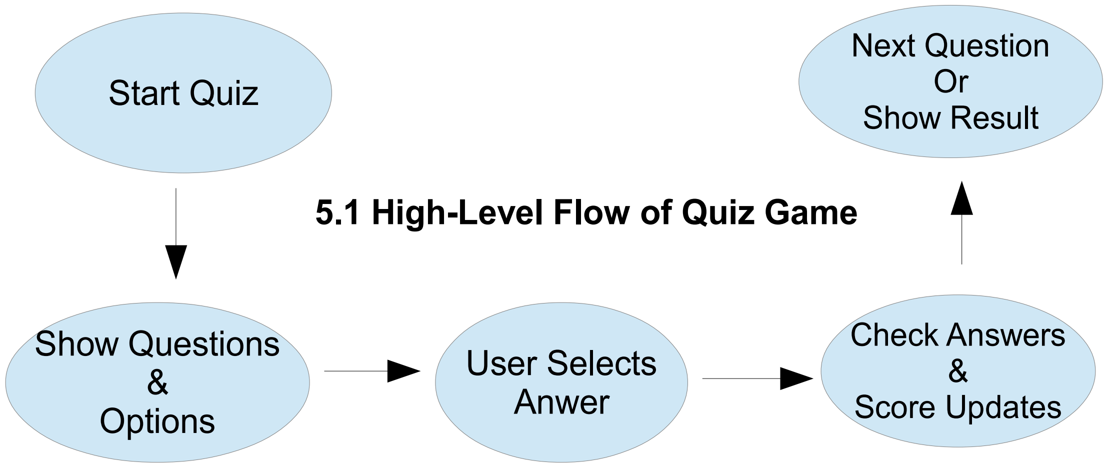
https://github.com/madhumidha13/upskillcampus

5 Proposed Design / Model

The game flow begins with a welcome screen, followed by question display (from a dataset), timer countdown, score update, and final result display.

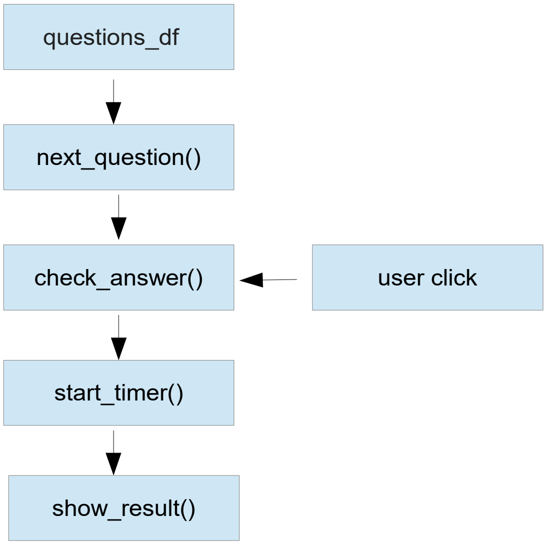
User input is captured through GUI buttons, and the logic uses if-elif-else conditions, NumPy functions for calculations, and Pandas for data management.

5.1 High Level Diagram



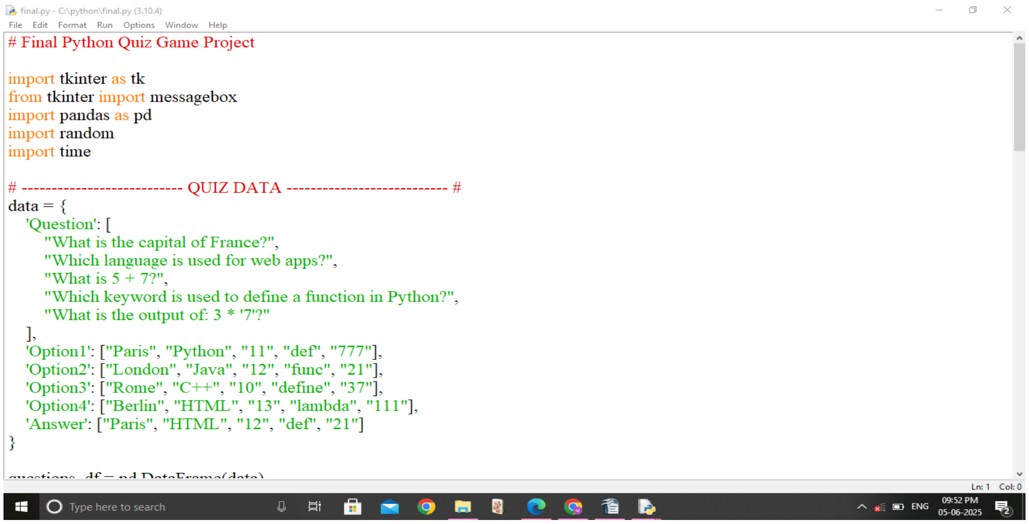
5.1 High-Level Flow of Quiz Game

5.2 Low Level Diagram



5.2 Function Interaction in Python Code

5.3 Interfaces

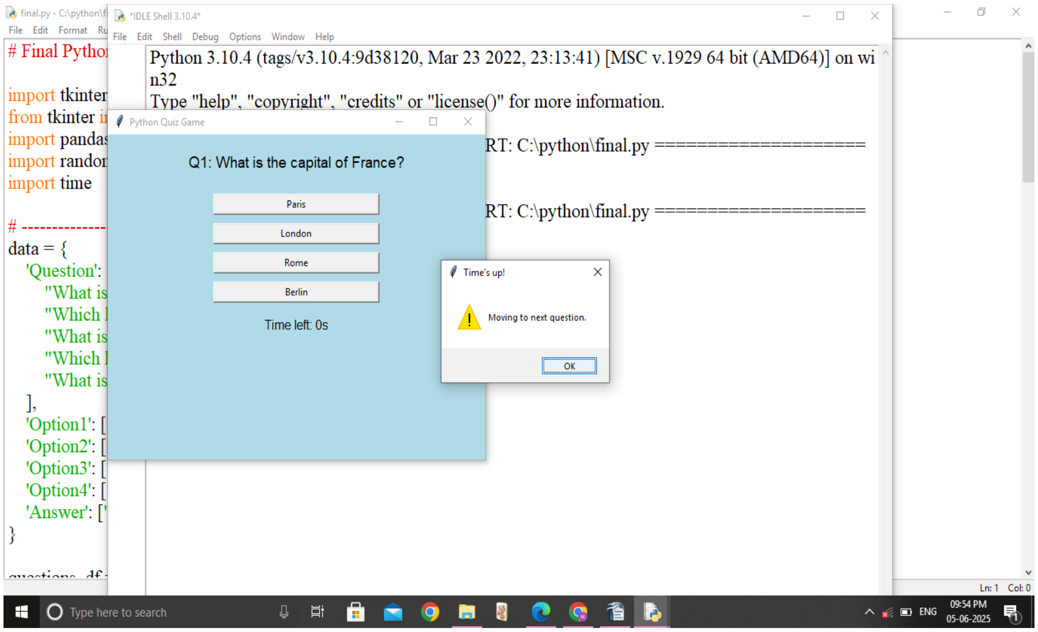

final.py - C:\python\final.py (3.10.4)
File Edit Format Run Options Window Help
Ln: 1 Col: 0
Type here to search
ENG
09:52 PM
05-06-2025

```
# Final Python Quiz Game Project

import tkinter as tk
from tkinter import messagebox
import pandas as pd
import random
import time

# --------------------------- QUIZ DATA --------------------------- #
data = {
   'Question': [
      "What is the capital of France?",
      "Which language is used for web apps?",
      "What is 5 + 7?",
      "Which keyword is used to define a function in Python?",
      "What is the output of: 3 * '7'?"
   ],
   'Option1': ["Paris", "Python", "11", "def", "777"],
   'Option2': ["London", "Java", "12", "func", "21"],
   'Option3': ["Rome", "C++", "10", "define", "37"],
   'Option4': ["Berlin", "HTML", "13", "lambda", "111"],
   'Answer': ["Paris", "HTML", "12", "def", "21"]
}

questions_df = pd.DataFrame(data)
```



```
# Final Pytho

import tkinter
from tkinter i
import pandas
import randor
import time

# -------------
data = {
  'Question':
    "What is
    "Which
    "What is
    "Which
    "What is
  ],
  'Option1': [
  'Option2': [
  'Option3': [
  'Option4': [
  'Answer': ['
}
```

```
Python 3.10.4 (tags/v3.10.4:9d38120, Mar 23 2022, 23:13:41) [MSC v.1929 64 bit (AMD64)] on wi
n32
Type "help", "copyright", "credits" or "license()" for more information.
RT: C:\python\final.py ====================
RT: C:\python\final.py ====================
```

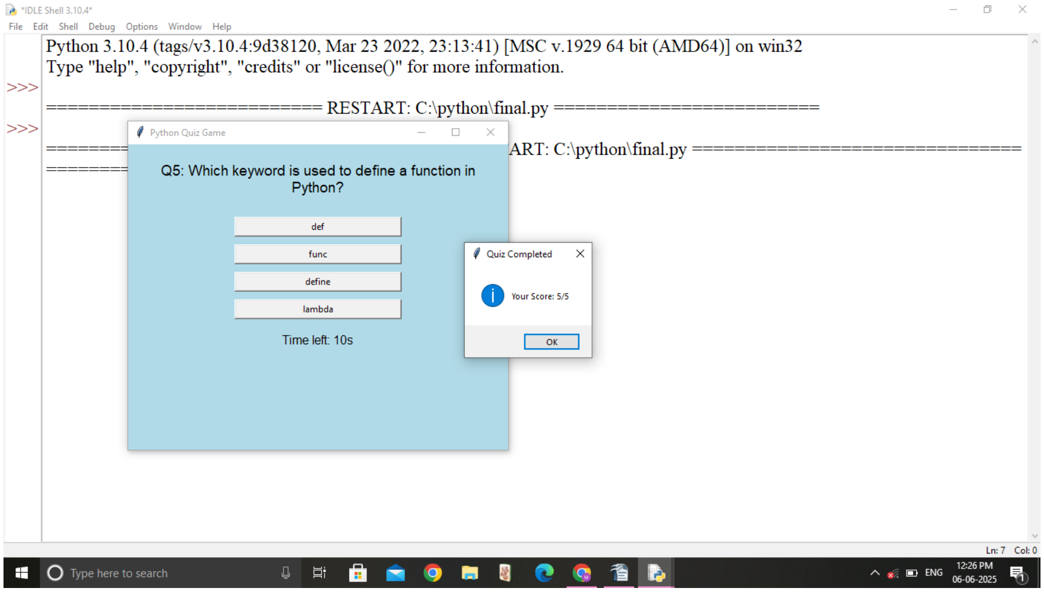
Python Quiz Game

Q1: What is the capital of France?

Time left: 0s

Time's up!

Moving to next question.



```
Python 3.10.4 (tags/v3.10.4:9d38120, Mar 23 2022, 23:13:41) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========================== RESTART: C:\python\final.py =========================
>>>
========                                ART: C:\python\final.py ==============================
========
```

Python Quiz Game

Q5: Which keyword is used to define a function in Python?

Time left: 10s

Quiz Completed

Your Score: 5/5

6 Performance Test

6.1 Test Plan/Test Cases

Test Case	Expected Result	Pass/Fail
Start quiz	First question appears	Pass
Select correct option	Score increases	Pass
End quiz	Result displayed	Pass

6.2 Test Procedure

- Run the script using Python
- Select answers for all questions
- Check if the final score is correct

6.3 Performance Outcome

- All tests passed
- GUI response time < 0.5 seconds
- No crashes or incorrect scoring observed

7 My Learnings

1. **Python Programming Skills**
   Improved my understanding of core Python concepts such as functions, conditionals, loops, and data structures.
2. **GUI Development with Tkinter**
   Learned how to design interactive windows and handle user events using Tkinter.
3. **Data Handling using Pandas and NumPy**
   Used DataFrames to store and manage quiz questions efficiently.
4. **Project Planning and Structuring**
   Understood how to divide a project into modules and maintain clean code.
5. **Debugging and Testing**
   Practiced identifying bugs, writing test cases, and ensuring code stability.
6. **Version Control with GitHub**
   Gained hands-on experience uploading and managing code on GitHub.
7. **Report Writing and Documentation**
   Learned how to create professional project documentation and structure reports properly.
8. **Communication and Presentation**
   Participated in weekly reviews and improved my ability to explain technical work clearly.

8 Future work scope

1. **Database Integration**
   Store user details, scores, and quiz history using SQLite or MySQL.
2. **Timer Feature**
   Add a countdown timer for each question to increase difficulty and pace.
3. **Random Question Generation**
   Shuffle questions and options to prevent repetition during multiple attempts.
4. **Multi-Level Difficulty**
   Provide “Easy”, “Medium”, and “Hard” levels to adapt to different users.
5. **Sound and Visual Effects**
   Add audio feedback for correct/incorrect answers and animations to enhance the user experience.
6. **Leaderboard and High Score System**
   Display top scores of all users to encourage competition.
7. **Mobile App Version (Kivy/Flutter)**
   Extend the project to work on Android using Python's Kivy or another mobile framework.
8. **User Authentication System**
   Include login/signup features for personalized quiz tracking.

Thanking you!!!