

internship_report

QSkill Python Internship Report

Intern Name: Shadullah

Internship Domain: Python, Data Analysis, Machine Learning & NLP

Organization: QSkill

Duration: 4 Weeks

Submission Date: 10 FEB 2026

INTRODUCTION

This internship focused on building strong foundations in Python programming and applying them to real-world problems using Data Analysis, Machine Learning, and Natural Language Processing (NLP).

The internship emphasized hands-on learning, clean project structuring, industry-standard practices, and deployment-ready applications.

OBJECTIVES OF INTERNSHIP

- To understand Python programming in depth
- To perform data analysis using real datasets
- To build machine learning models from scratch
- To develop AI-powered web applications using Flask
- To follow professional coding and documentation standards

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PROJECT DETAILS

Project 1: Data Analysis with Pandas

Description:

Performed Exploratory Data Analysis (EDA) on a student performance dataset. The project involved cleaning raw data, handling missing values, and generating visual insights.

Key Tasks:

- Data preprocessing
- Statistical analysis
- Visualization using graphs and heatmaps

Outcome:

Identified patterns between study hours, attendance, and performance.

Project 2: House Price Prediction (Machine Learning)

Description:

Built a complete machine learning pipeline to predict house prices based on features such as area, number of rooms, and location.

Key Tasks:

- Feature engineering
- Train-test split
- Linear, Ridge & Lasso regression models
- Model evaluation (RMSE, R^2)

Outcome:

Achieved high accuracy with well-evaluated regression models.

Project 3: AI Sentiment Analysis Web Application

Description:

Developed a Flask-based web application that analyzes text sentiment using NLP techniques and provides real-time results.

Key Tasks:

- REST API development
- NLP sentiment analysis
- Interactive web UI
- Rate limiting for security

Outcome:

A production-ready AI web application suitable for real-world use.

LEARNING OUTCOMES

- Hands-on experience with Python projects
- Strong understanding of data analysis workflows
- Ability to build and evaluate ML models
- Practical exposure to NLP and web APIs
- Improved problem-solving and debugging skills

CHALLENGES FACED

- Handling dependency conflicts
- Managing project structure for multiple applications
- Debugging real-world errors
- Optimizing UI/UX for web applications

These challenges improved my technical and analytical skills significantly.

CONCLUSION

This internship provided valuable industry-level exposure to Python development.

The projects strengthened my confidence in building end-to-end solutions and prepared me for real-world software development roles.

GITHUB REPOSITORY

GitHub Link:

<https://github.com/sufiyanpvtt/QSkill-Python-Internship>

DECLARATION

I hereby declare that the work presented in this internship report is my own and has been completed under the guidelines provided during the internship.

Name: Mohammad Shadullah

Signature: Shadullah

Date: 10 FEB 2026