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CAPSTONE PROJECT

PERSONAL NOTES MANAGER

PRESENTED BY

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OUTLINE:

- **Problem Statement** (Should not include solution)
- **Proposed System/Solution**
- **System Development Approach** (Technology Used)
- **Algorithm & Deployment**
- **Result (Output Image)**
- **Conclusion**
- **Future Scope**
- **References**

PROBLEM STATEMENT:

Students and professionals often struggle to organize personal notes effectively.

Traditional paper-based or scattered digital notes lead to:

- Difficulty in searching specific information
- Lack of structured storage
- Risk of losing important notes

There is a need for a lightweight, reliable, and persistent system to manage notes efficiently.

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PROPOSED SOLUTION:

Overview

A lightweight, command-line tool to manage personal notes with simplicity and reliability.

Key Features

- **Add Notes** – Quickly capture ideas or tasks
- **View Notes** – Display stored notes in the terminal
- **Search Notes** – Find notes by keywords instantly
- **Delete Notes** – Remove outdated or irrelevant entries

Technical Highlights

- **Persistent Storage** – Notes saved in JSON for durability
- **Modular Design** – Helper functions ensure clean, maintainable code
- **Unit Tests** – Guarantee correctness and reliability

Benefits

- Easy to manage
- Fast and searchable
- Safely stored for long-term use

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SYSTEM APPROACH:

System Requirements

- Python **3.10+**
- Pure Python (no external dependencies)

Libraries Used

- **json** – Persistent storage of notes
- **os** – File handling and path operations
- **unittest** – Automated testing framework

Folder Structure

- **main-scripts/** – Core application logic
- **utils/** – Helper functions for file operations
- **tests/** – Unit tests for reliability
- **exports/** – Screenshots, PDFs, and outputs

Highlights

- Lightweight & dependency-free
- Clean modular organization
- Easy to test, maintain, and extend

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ALGORITHM & DEPLOYMENT:

Algorithm Flow

1. **Initialize Storage** – Create notes_storage.json if missing
2. **Add Note** – Append *title* + *content* to JSON
3. **View Notes** – Display all stored notes
4. **Search Notes** – Match keywords in title/content
5. **Delete Note** – Remove note by title

Deployment

- **Run Application** -> “python -m main-scripts.notes_manager ”
- **Run Tests** -> “python -m unittest tests.test_notes ”

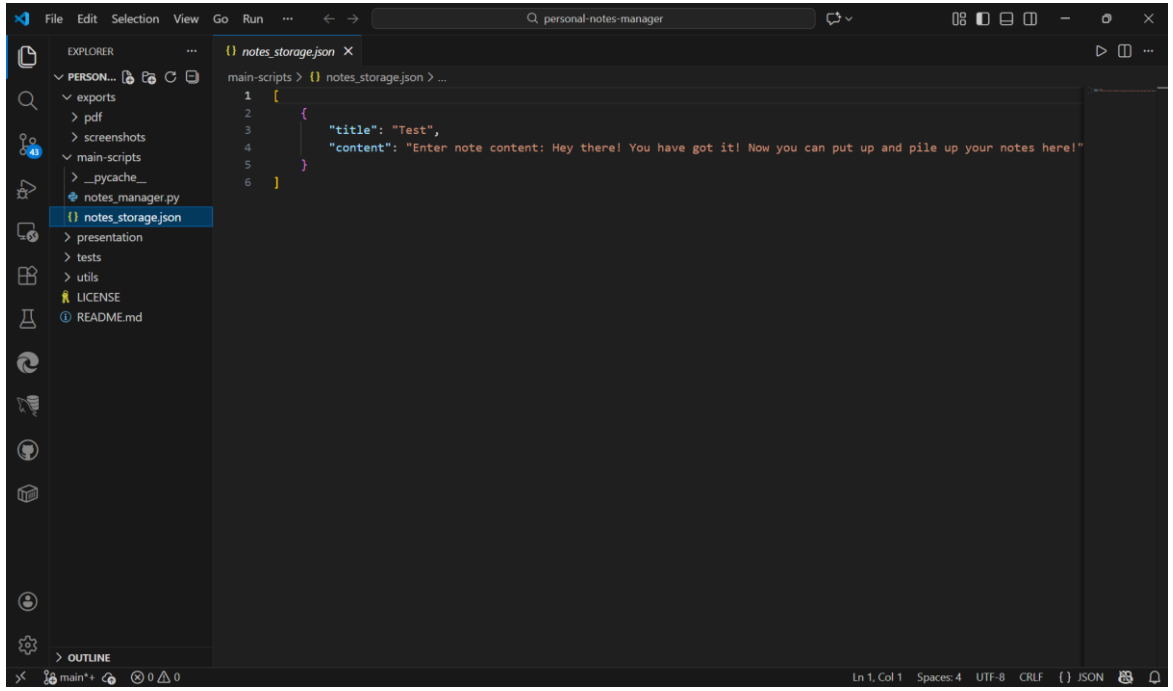
Highlights

- Simple, intuitive workflow
- CLI-friendly execution
- Reliable testing ensures stability

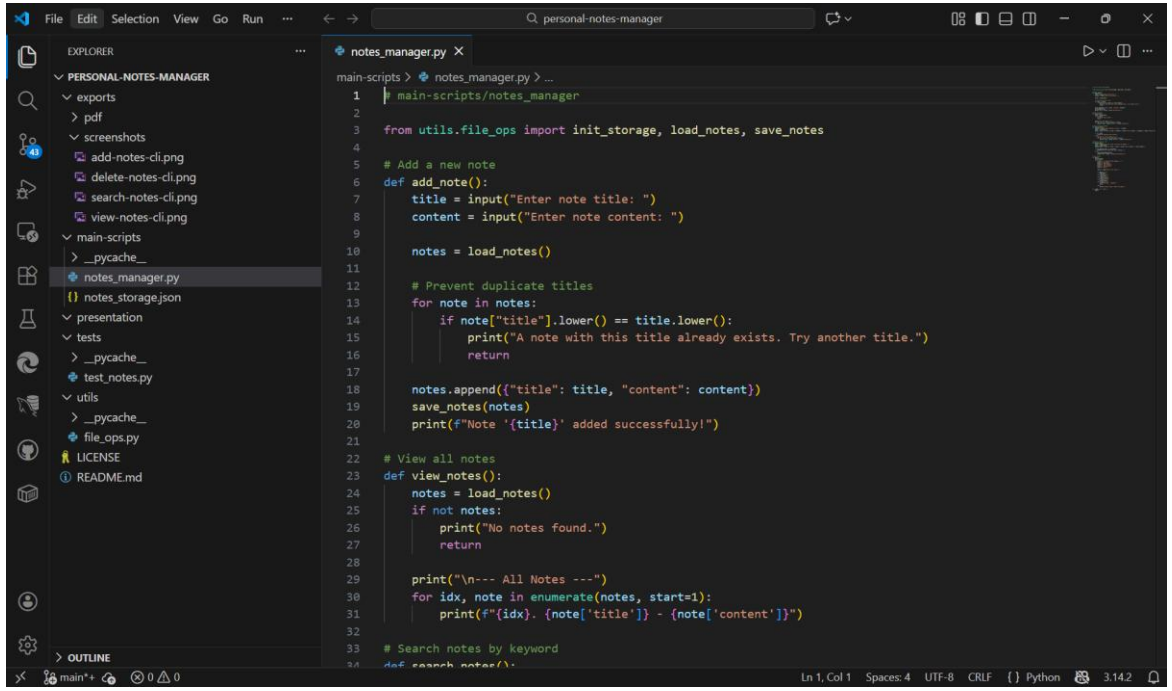
RESULT:

The Personal Notes Manager successfully demonstrated all core features — Add, View, Search, and Delete — with persistent JSON storage.

Unit tests executed with Python's unittest framework confirmed reliable functionality and accurate data handling.



.json file where the notes are saved.



Code Sample.

CONCLUSION:

Problem Solved

- Tackles the issue of **scattered note-taking** by providing a centralized, structured solution

Key Strengths

- **Lightweight** – Minimal setup, runs smoothly in any environment
- **Reliable** – JSON persistence + unit tests ensure stability
- **Easy to Use** – Simple CLI interface for quick note management
- **Fully Tested** – Verified functionality for confidence in daily use

Outcome

- Demonstrates **practical application of Python** for workflow automation
- Enhances productivity through organized, searchable, and secure notes

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FUTURE SCOPE:

Planned Features

- **Timestamps on Notes** – Automatically record creation and update times for better tracking
- **Export to PDF** – Generate shareable, professional note documents
- **GUI Interface** – User-friendly front end via **Tkinter** (desktop) or **Flask** (web)
- **Cloud Integration** – Sync and access notes anywhere using **Azure Functions**
- **Copilot Integration** – Smart suggestions to improve note organization and productivity

Impact

- Enhances usability with multiple interfaces
- Enables portability and sharing of notes
- Provides intelligent assistance for smarter workflows
- Scales from personal use to cloud-connected productivity

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REFERENCES:

Python Documentation

- json (docs.python.org in Bing) – JSON encoder/decoder
- os (docs.python.org in Bing) – Miscellaneous operating system interfaces
- unittest (docs.python.org in Bing) – Unit testing framework

- **GitHub Repository – Click here [https://github.com/rajghosh06-dev/personal-notes-manager]**

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Thank You