

# Productivity Suite - Project Documentation

## Overview

The Productivity Suite is a Python-based desktop application built using Tkinter. It combines four essential utilities into a single user-friendly interface: a Calculator, Notes Manager, File Organizer, and Timer (Countdown + Stopwatch).

This documentation provides an overview of features, functionality, and internal workflow.

## 1. Calculator

The calculator supports safe arithmetic operations using a custom AST-based evaluator. It includes buttons for digits, operators, and a real-time evaluation triggered using '=' or Enter key. Supported operations: +, -, \*, /, %, \*\*, and unary + and -.

## 2. Notes Manager

A simple note-taking system that stores notes as .txt files inside a dedicated 'notes' directory. Features include creating, saving, loading, deleting, and exporting notes. The system also sanitizes filenames for safety and compatibility.

## 3. File Organizer

This tool organizes files inside a chosen directory by automatically sorting them into subfolders based on file extensions. For example: .png → png\_files/, .pdf → pdf\_files/. It uses Python's `shutil.move()` for file operations.

## 4. Timer (Countdown + Stopwatch)

The timer module includes: • Countdown Timer – Users can input minutes and seconds; the timer updates every second using Tkinter's `after()` loop. • Stopwatch – Tracks elapsed time with start, stop, and reset. Internally uses timestamps for accurate measurement. Both timers run without freezing the UI thanks to Tkinter's asynchronous scheduling.

## 5. Application Structure

The GUI is built using Tkinter's Tk, Frame, Label, Entry, Button, Text, Notebook, and Spinbox widgets. Tabs are created using `ttk.Notebook`. Internal functionalities are separated into dedicated builder methods: `build_calculator()`, `build_notes()`, `build_file_organizer()`, `build_timer()`. The `safe_eval()` function ensures only valid arithmetic expressions are processed.

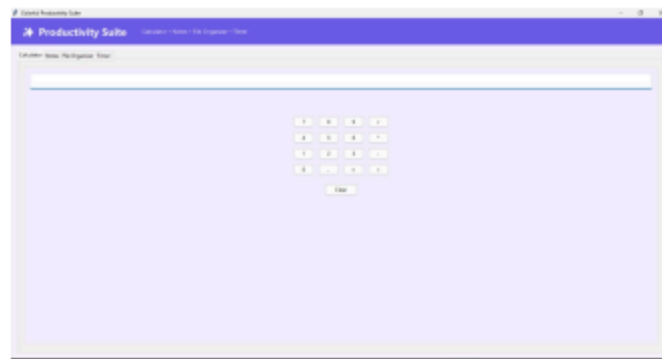
## Conclusion

This Productivity Suite demonstrates modular GUI design, safe computation handling, organized file management, and responsive real-time timers — making it a practical and extendable desktop

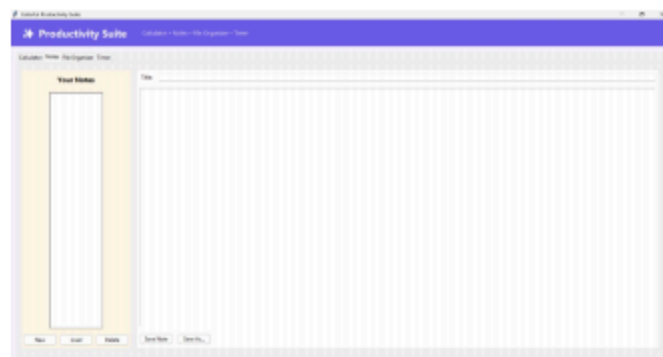
utility.

## 6.Screenshots(Output)

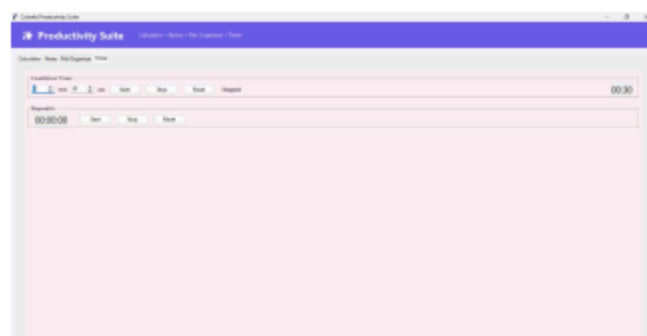
### 1. Calculator



### 2. Notes



### 3. Timer



### 4. File Organizer

