CS258 Report

Pairwise-Image Visualizer

G-18

We decide to use the Incremental Development Model.The design is broken down into smaller, more manageable pieces in an incremental development model, and each iteration produces a working, usable portion of the finished product. This enables the incorporation of comments and adjustments throughout the development process, ensuring that the final product meets the customers' expectations.
This paradigm works especially effectively for projects involving very specific features since these systems frequently have complex requirements or requirements that change quickly. Since we might attempt to add more features to our project in the future It will make it possible for the development process to be more adaptable and iterative, allowing the team to make changes and advancements in response to comments and suggestions.

The Waterfall model follows a sequential procedure, where each step must be finished before moving on to the next, in contrast to the incremental development. For systems with rapidly changing requirements, this method might not be the best. Since time is not a restriction for us, timeboxing splits work into predetermined time frames, which may not be appropriate. RUP (Rational Unified Process) is a heavier-weight, more organised paradigm that might be too much for a small to mid-sized design. Instead of controlling the entire software development process, integration and configuration management concentrate on managing the specific components of software design.

Introduction:

We are required to make a software that can open images from multiple folders and visualize them, the images are of the same name which exists in different folders, maybe as a result of a series of image processing like segmentation, landmark or object detection, or upscaling and this tool would allow the user to visualize such images.

We plan to make this application for the Desktop platform, using Python, since python is easy to use and handles files very well. Python also has

many modules like tkinter, PysimpleGUI, etc., which would help us with the GUI.

We will allow the user to select the folders and display the images side-by-side. The User will also have the option to increase the number of folders. When the user clicks on the search button, all the images with the same name will be displayed as a list on the side panel. And by clicking on each of the buttons of the list, the user can see respective images on the right side of the screen.

Tech Stacks that will be used:
Python- Python is a high-level, general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation.

Tkinter - Tkinter is a Python binding to the Tk GUI toolkit. It is the standard Python interface to the Tk GUI toolkit and is Python's de facto standard GUI.

customTkinter - CustomTkinter is a python UI library based on Tkinter, which provides new, modern, and fully customizable widgets. They are created and used like normal Tkinter widgets and can also be used in combination with normal Tkinter elements. The widgets and the window colors either adapt to the system appearance or the manually set mode ('light', 'dark'), and all CustomTkinter widgets and windows support HighDPI scaling (Windows, macOS). With CustomTkinter, you'll get a consistent and modern look across all desktop platforms (Windows, macOS, Linux).
Github repo: https://github.com/TomSchimansky/CustomTkinter

File Handling in Python:

File handling is an important part of our application.

Python has several functions for creating, reading, updating, and deleting files.

The essential function for working with files in Python is the open() function.

The open() function takes two parameters; *filename* and *mode*.

There are four different methods (modes) for opening a file:

"r" - Read - Default value. Opens a file for reading, error if the file does not exist

"a" - Append - Opens a file for appending, creates the file if it does not exist

"w" - Write - Opens a file for writing, creates the file if it does not exist

"x" - Create - Creates the specified file, returns an error if the file exists

"t" - Text - Default value. Text mode

"b" - Binary - Binary mode (e.g., images)