**Steganography Phase** I

Linden Crandall, Jonathan Mainhart, Zhihua Zheng

University of Maryland Global Campus

CMIS 495: Current Trends and Projects in Computer Science

Prof. Majid Shaalan

April 15, 2022

**Overview**

In week 5, our group has been focusing on foundational function implementation. So far, all the implementation goals for Phase 1 have been achieved. We have developed a GUI which can open and load images. The functionality of the encode and decode features is built but has not yet been integrated into the front end. We did have some issues with version control even though we are using git, but in the end, it was a productive learning experience. We are currently ahead of the schedule. Specific milestones and their status are listed in the table below.

Phase I (Week 5) Milestone Status Table

|  |  |  |  |
| --- | --- | --- | --- |
| **Scope** | **Milestone** | **Status** | **Notes** |
| Week5-6 | Main GUI | incomplete | GUI Display is done.  Will need to dynamically display input and output from other py. classes. |
| Week5-6 | Popup windows | incomplete | Window Display is done.  Will need to dynamically display input and output from other py. classes. |
| Week5-6 | ImageObject Class | complete | Window Display is done.  Will need to dynamically display input and output from other py. classes. |
| Week5 | File Input | complete | Exploring a simplified method to open files |
| Week5-6 | File Output | not started |  |
| Week5 | Message conversion | complete |  |
| Week6 | Image encoding | complete | Will need to refactor to simplify some of the code. |
| Week6 | Image decoding | complete |  |
| Week6 | Image reset | complete |  |
| Week6 | Image save | not started |  |

**Problems Encountered and Reevaluation of the Decisions**

Design Retrospective

Some early decisions and assumptions have caused rework. Notably, an early decision to use different GUI frameworks for different parts of the application caused some conflicts while running on macOS but were not evident on Windows. We decided to move the affected functions to a single framework which fixed the conflict but came with a bit of a learning curve.

A lot of variables and class attributes overlooked during initial design became evident during development. This may have been overcome by pseudo-coding the application before development, but excitement got the better of the team. We are still discovering that we need to implement different helper functions to help us enable the desired functions from the GUI.

The Design document has been updated with the new variables, attributes, methods, and functions highlighted in yellow, those that have been moved from one location to another highlighted in blue, and those that have been deleted highlighted in red.

**Changes of the previous document**

See Project Design.docx.

**Phase I Software Implementation Result**

1. Main GUI

A picture containing text, screenshot, monitor, indoor

Description automatically generated

1. FileChooser - Open Image

Graphical user interface, application

Description automatically generated

1. Load Image

A screenshot of a dog lying in grass

Description automatically generated with low confidence

1. Warning and Info/Error popup windows

Graphical user interface

Description automatically generated

Graphical user interface, website

Description automatically generated