Image/Picture Steganography

Student Details

- Number: 154409

- Name: Emmanuel Maneswa

- Email: emmanuelmaneswa@gmail.com

Project Advisor

- Asst. Prof. Dr. Cem Kalyoncu

Languages

- C++
- QML
- JavaScript

Softwares/Tools Used

- Visual Studio Code: https://code.visualstudio.com/
- Git: https://git-scm.com/
- Bitbucket: https://bitbucket.org/
- Github: https://github.com/
- CMake: https://cmake.org/
- Qt: https://www.qt.io/
- OpenCV: https://opencv.org/
- Doxygen: http://www.doxygen.nl/
- Trello: https://trello.com/

Supported Image Formats

- JPEG: *.jpeg, *.jpg, *.jpe
- PNG: *.png
- TIFF: *.tiff, *.tif
- WebP: *.webp
- Bitmaps: *.bmp
- OpenEXR: *.exr
- HDR: *.hdr

Format Stego Image is Saved

- PNG: *.png —> Because it uses a lossless compression(LZW).

Third-Party Libraries

- Sha256: http://www.zedwood.com/article/cpp-sha256-function
- Easy Encryption: https://github.com/philipperemy/easy-encryption

Directory Structure

```
.
├── build
├── docs
│   ├── project 1
│   │   ├── proj1_documentation.docx
│   │   ├── proj1_documentation.pdf
│   │   ├── proj1_poster.pdf
│   │   └── proj1_poster.pptx
│   └── project 2
│       ├── Project Poster (154409 - Emmanuel Maneswa).pptx
│       ├── Project Presentation (154409 - Emmanuel Maneswa).pptx
│       └── Project Report (154409 - Emmanuel Maneswa).docx
├── gui
│   ├── js
│   │   ├── embed.js
│   │   └── extract.js
│   ├── pages
│   │   ├── embed.qml
│   │   ├── extract.qml
│   │   └── main.qml
│   └── qml.qrc
├── ImSteg.pro
├── include
│   ├── convert.hpp
│   ├── middlemen.hpp
│   └── steganography.hpp
├── README.md
├── README.pdf
├── samples
│   ├── 3.webp
│   ├── sample_1280×853.exr
│   ├── sample_1280×853.hdr
│   ├── sample_1920×1280.bmp
│   ├── stego-image11.png
│   ├── stego-image12.png
│   ├── stego-image13.png
│   ├── stego-image14.png
│   ├── stego-image15.png
│   ├── stego-image16.png
│   ├── stego-image1.png
│   ├── stego-images
│   │   ├── stego1.png
│   │   └── stego2.png
│   └── tiff-image.tiff
├── scrum-board
│   ├── 10. 2020-05-21_22:30.jpg
│   ├── 11. 2020-05-21_23:28.jpg
```

```
|       ├── 1. 2020-03-11_20:23.jpeg
|       ├── 12. 2020-05-21_23:28.jpg
|       ├── 13. 2020-05-22_00:02.jpg
|       ├── 14. 2020-05-22_00:02.jpg
|       ├── 2. 2020-03-30_07:31.jpg
|       ├── 3. 2020-04-07_16:53.jpg
|       ├── 4. 2020-04-07_16:56.jpg
|       ├── 5. 2020-04-08_12:32.jpg
|       ├── 6. 2020-04-08_12:35.jpg
|       ├── 7. 2020-04-09_08:46.jpg
|       ├── 8. 2020-04-25_02:30.jpg
|       └── 9. 2020-05-21_01:35.jpg
├── src
|   ├── convert.cpp
|   ├── main.cpp
|   ├── middlemen.cpp
|   └── steganography.cpp
└── third-party
    ├── easy-encryption
    |   ├── include
    |   |   ├── b64.h
    |   |   ├── encrypt.h
    |   |   └── vigenere.h
    |   └── LICENSE
    ├── README.md
    ├── README.pdf
    └── sha256
        ├── include
        |   └── sha256.hpp
        ├── LICENCE.txt
        └── src
            └── sha256.cpp
```