

# Image/Picture Steganography

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## Student Details

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## Project Advisor

- Asst. Prof. Dr. Cem Kalyoncu

## Languages

- C++

## 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/>
- 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>

## Directory Structure

```
.
├── build
├── CMakeLists.txt
├── 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
├── include
│   ├── convert.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
│   └── tiff-image.tiff
├── scrum-board
│   ├── 1. 2020-03-11_20:23.jpeg
│   ├── 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
├── src
│   ├── convert.cpp
│   ├── main.cpp
│   └── steganography.cpp
├── tests
├── third-party
│   ├── README.md
│   ├── README.pdf
│   └── sha256
│       ├── include
│       │   └── sha256.hpp
│       └── LICENCE.txt
```

```
|  
|  
└─ web  
    └─ src  
        └─ sha256.cpp
```