**User’s Guide and Test Plan**

*CMSC 495 Week 3*

*By: Shelley Schoppert, Jake Gonzalez, Justin Smith, Timothy Strickland*

*University of Maryland, Global Campus*

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# **1. Introduction**

**1.1 Objectives**

The purpose of this document is to outline the framework of testing strategies for our application.

**1.2 Background**

The idea is to create a program that uploads, analyzes and manipulates image metadata.The program will be able to handle both JPG and PNG formats and produce exif data. Errors will be handled gracefully if encountered.

**1.3 Scope**

This document will not include specific test cases. Instead, it will highlight high level abstract tests that can be designed more specifically as the project progresses.

# **2. Test Environment**

## **2.1 Hardware**

A desktop or laptop computer capable of running the software is all that is required for testing hardware. The web application should be able to run in any modern web browser and requires no special hardware to test. The minimum specifications required for the computer(s) is:

• Core Duo processor or above;

• 4 GB RAM or more.

• 500GB hard disk drive (HDD) or solid-state drive (SDD);

• Mouse (wired or wireless);

• Keyboard (wired or wireless);

• Display at 1280 x 1024 for minimum viewing of images. The higher the resolution the better the image quality.

## **2.2 Software**

The following software is required for operation of the program. The ImageMetrics program (to be designed). Browser software. The following applications are required for the ImageMetrics program to work:

* Python3
  + Pillow Library installed.
  + Python Flask
  + NumPy
  + Matplotlib
* HTML/CSS
  + Landing page
    - Upload button - opens Finder or File Explorer for user to choose their image
    - Once chose, the photo’s file path will be displayed
    - Submit button - submits photo to be analyzed
    - Link to About page in upper corner of page
  + Results page
    - Will display photo analysis results (See section 4 - Test Specifications)
    - Results will be organized in a table or list format
    - Link to About page in upper corner of page
    - Export button - option to export file of the analysis report
  + About page
    - Describes what the application is used for
    - Contains guide on how to use website to analyze a photo
    - Lists the categories of information that will be obtained from the analysis

## **2.3 Tools**

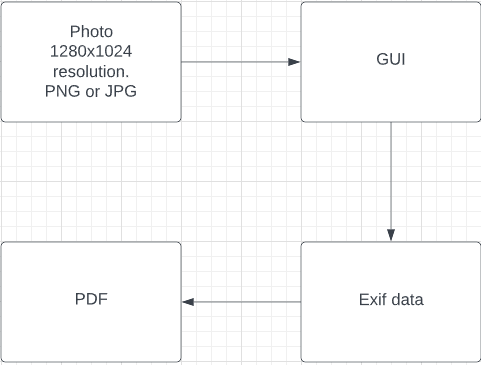
Image editing software might be helpful but not required.

## **2.4 Data**

Images raw, modified images. PNG and JPG are supported. PDF exported images.

# **3. Diagrams**

## **3.1 Overview**

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# **4. Test Specifications**

## **4.1 User Interface test cases**

These cases are for the testing of the program

### **4.1.1 Select Upload Button**

**Objective**

The purpose of this test is to verify that the upload button allows the user to select an image.

**Input specifications**

1. Upload a photo or image to the GUI. This is done by clicking on the “Upload Button”.

**Output specifications**

1. Opens a window that allows the user to select an image.
2. File path to the image is displayed.

### **4.1.2 Select Submit**

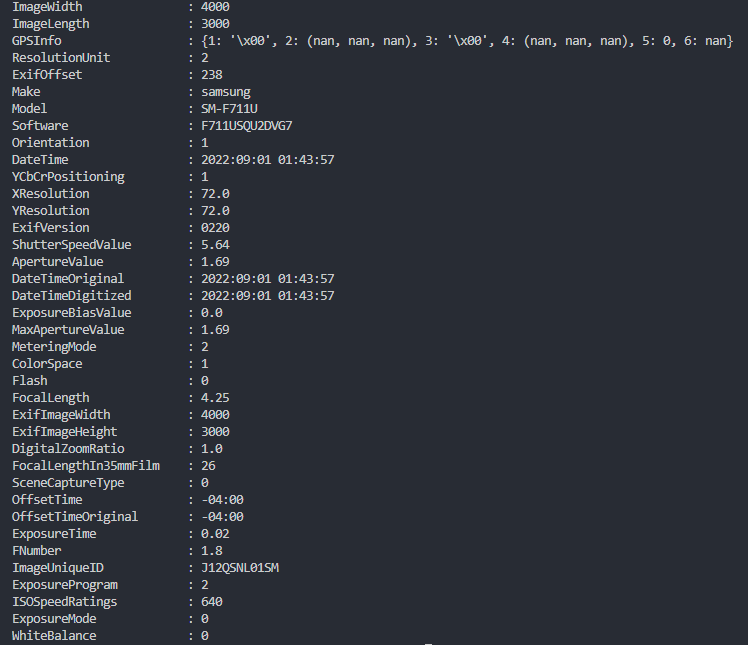
**Objective**

The purpose of this test is to upload the image to the GUI.

**Input Specifications**

1. Select the “Submit” button.

**Output Specifications**

1. Exif data is printed to the screen as seen in the following image (next page):
2. 

### **4.1.3 Select Export**

**Objective**

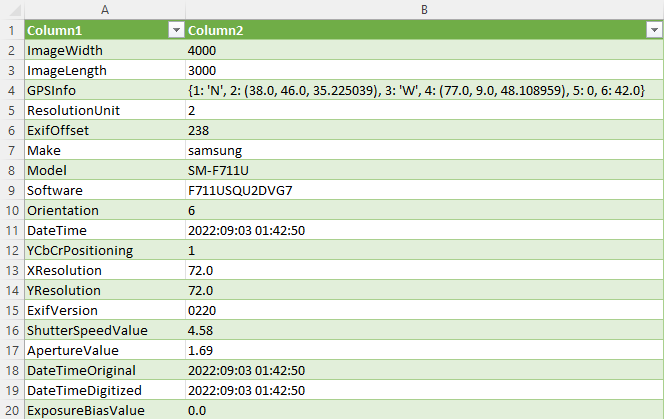
The purpose of this test is to export data to a file.

**Input Specifications**

1. Push the Export button.

**Output Specifications**

1. File is created with the exif data inserted.



### **4.1.4 Return Button**

**Objective**

The purpose of this test is to return to the home page from the data page.

**Input Specifications**

1. Push the Return button.

**Output Specifications**

1. Return the user to the home page

### **4.1.5 About Button**

**Objective**

The purpose of this test is to present the “About” page to the user.

**Input Specifications**

1. Push the “About” button.

**Output Specifications**

1. User is presented the “About” page.

## **4.2 File Handling**

### **4.2.1 Incorrect file type is presented**

**Objective**

The purpose of this test is to ensure incorrect file types are handled appropriately.

**Input Specifications**

1. Attempt to upload a file that is not jpg or png.

**Output Specifications**

1. The file is rejected and a helpful message is displayed.

### **4.2.2 Requested Data is not Available/Missing**

**Objective**

The purpose of this test is the handling of missing exif data.

**Input Specifications**

1. Upload a valid file that is missing specific exif data.
2. Request the missing data be presented.

**Output Specifications**

1. The output annotates that the requested data could not be found.

# **5. User Guide**

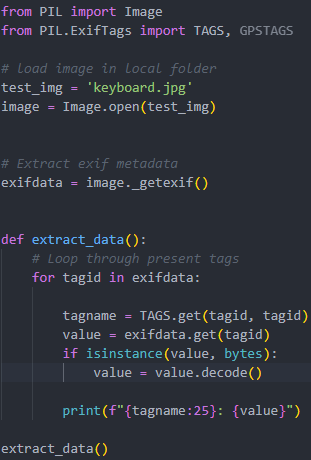
### **5.1 Home Page**

* Add Image Button
  + Users can add an image to retrieve exif data. Takes the user to the data page. Image must be jpg or png.
    - Opens a navigation window so the user can navigate to the file in question
* Search for…
  + User can use drop down to determine what specific data to sort for.
* About Button
  + User is taken to an “about” page to learn about the site and what it is capable of.

### **5.2 Data Page**

* Data pane
  + User is presented the exif data in the pane
* Return Button
  + User is returned to home screen
* Export Button
  + User can export the data to a saved file

Loop through and extract metadata with Python.



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### **5.3 About Page**

* User is presented a guide to show what the site is capable of.
* Return button
  + Returns the user to the home page