Senior project requirements doc  
photo castle 1.0

Student Name: Brian Aguilar Diaz

Project Advisor Name: Dr. Sean Hayes

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# Overview

## Functional

The new system must include the following:

1. The System

ID: 1.1

The program must show the policies and rules to which the user must agree to before using the program. The program must allow the user to customize the interface size, and tool pop up location and size. The user must be given the option to stick to the free Photo Castle or upgrade to the pro edition. If any issues occur the system must have a help section that guides them to the forum/support team.

1. The Enjoyment

ID: 1.2

1. The Conflict

ID: 1.3

## Look and Feel

The new system shall include the following:

1. Appearance

ID: 2.1

Type: Non-Functional

Description: This program shall be suited for a younger teenage audience. The program shall be user friendly and be given a minimal design. A dark and light mode will be incorporated for different times of the day. The interface should have a small menu pop up for tools and colors. Photo Castle branding shall be standard on the program as well as minimal.

Rationale: The user’s who love to edit photos are a younger teenage audience. Young audience like updated modern apps that function easier than photoshop but can still do the same job. Photoshop type apps use dark and light modes on their programs. Photoshop contains their branding on the program which helps people remember the brand and their work.

Fit Criterion: Within a couple of minutes of downloading and opening the app the user will be given the interface and can instantly interact with it. The user can test out each tool through the pop ups and pick whether they want a dark or light mode. Photo Castle branding will be inspected to look and match the Photo Castle logo whether it be in dark or light mode (small or large).

1. Style

ID: 2.2

Type: Non-Functional

Description: The program shall be minimal and attractive. Similar to Mac OS and their minimal and detailed look, Photo Castle’s look will be inspired by the same style.

Rationale: Younger users tend to like updated modern and minimal UI like Apple’s programs. The users want a program that can do it all without looking complicated. The users do not want a program that looks like a 90’s program but instead need a clean and simple UI.

Fit Criterion: Once the program is used, 80% of the potential users will agree that the design element is clean and minimal (however with room to improve). Users will be given a survey after 3 days of use and decide if the minimal look is perfect or needs improvement.

## Usability

The new system shall include the following:

1. Ease of Use

ID: 3.1

Type: Non-Functional

Description: The program was created to be an easier photoshop that is just as efficient/accurate. The program shall be easy to use for a young 12-year-old teen to use. The program is meant to help and avoid the user from making mistakes. The program’s tool pop up shall make the user want to use it more as its very convenient. The program can be used by anyone without need of proper English as symbols and pictures on tools will be incorporated (however more languages shall late be incorporated).

Rationale: Users want photoshop however do not want to pay money for it. The user also finds photoshop very complicated yet needs to edit their photos professionally. Users do not understand photoshop symbols.

Fit Criterion: 90% of younger teenagers shall be able to complete basic editing on their selfies and photos within a couple of minutes. After usage of about one week the user shall have an error rate of less than .5%. Surveys shall be given to identify how long users use the program and specific functionalities to know if symbols were used/understood.

1. Personalization and Internationalization

ID: 3.2

Type: Non-Functional

Description: The program shall allow users to chose from a variety of languages, starting alphabetically. For text boxes a spell checker will be incorporated. The pro-option will come with a purchase option in U.S. dollars and allow for more personal configurations. Currently only purchasable in U.S. dollars however there is an intention to have it purchasable in pesos and other currencies.

Rationale:

Fit Criterion:

1. Learning

ID: 3.3

Type:

Description:

Rationale:

This program shall be easy to learn for a middle school student. The program was meant for ease of use therefore no training is needed to use Photo Castle. For the older generation, a tutorial and manual is provided in case they need help (Video Tutorials in the future).

Fit Criterion: 99% of teenagers shall be successful in using all the features photo castle has in less than 3 days. After receiving video tutorials and some training, older people will be able to use the app with less than 10% errors in 1 week. Without using manuals or tutorials the average person can learn Photo castle in 3-6 days.

1. Understandability and Politeness

ID: 3.4

Type:

Description:

Rationale:

The program shall use very basic verbiage and symbols that most people understand and have seen before in their daily lives. The program shall also hide its complexity and construction so the user and see a very minimal and clean interface.

1. Accessibility

ID: 3.5

Type:

Description:

Rationale:

The program shall be usable for those who are color blind with a color-blind help mode. The program shall also have an easy mode with less tools and bigger sizes to adapt to those with disabilities and thus following the Americans with disabilities act.

1. Convenience

ID: 3.6

Type:

Description:

Rationale:

The program shall give them a small pop up of new changes and features added to Photo Castle. The program will also notify the user of their last work and if they want to continue where they left off.

## Performance

The new system must include the following:

1. Speed and Latency

ID: 4.1

Type:

Description:

Rationale:

The interface the user is given shall have a response time of 1 second for every operation that can be chosen. The response time needs to be fast as the user’s thought process cannot be forgotten or interrupted. The photo manipulating program must download the photo the user wants to manipulate in 10 seconds. The program shall save all the progress and store the photo away within 15 seconds. The program could be delayed in downloading and saving if a bulk of photos are chosen to edit all at once (10 more seconds per photo). Response time to applying effects on photos cannot take more than .5 seconds as applying whitening and waiting for it to show up can disorient the user.

Fit Criterion: The program’s response time shall have no more than 1 second for 70 percent of the actions. The response should only take longer in downloading and saving if a bulk amount of photos are edited at once.

1. Safety-Critical

ID: 4.2

Type:

Description:

Rationale:

The program shall not purposely cause heating or memory issues to the system. The program will not cause malware or contain third party ads that could potentially steal the users privacy/data.

Fit Criterion: The program shall be certified by the AEE’s etc etc. It is to be certified by qualified computer science majors. No third party or other unauthorized users shall manage or edit the program after its testing qualifications and the program shall be given to download once it is safe to administrate. The program will comply with all safety standards such as … .

1. Precision or Accuracy

ID: 4.3

Type:

Description:

Rationale:

The programs tools all contain accurate measurements in opacity and size of the tools in decimal places (0.00-0.99) and percentages (0-100%). All copies are saved with the accurate changes and a copy is created as well with the same precise changes.

1. Reliability and Availability

ID: 4.4

Type:

Description:

Rationale:

The program shall run and be available at all times the user needs it (24 hours a day/365 days per year). If the program were to close, the program will contain autosave and produce a save for every major change. It is vital to have autosave, so the user does not have to start over again and produce frustration and uninstallation. The program will have a 99% uptime as its downloadable and usable offline. If a beta online version were to be released, then that would vary between 60-90% uptime.

1. Robustness or Fault-Tolerance

ID: 4.5

Type:

Description:

Rationale:

The program does contain autosave features so if the program abruptly closes or internet connection is lost, the users work is not lost with it. The program can run offline, so an internet connection is not necessary. If power is lost and the program does not manage to autosave it will recover the last version before a save.

1. Capacity

ID: 4.6

Type:

Description:

Rationale:

The program shall be able to handle 100 images or 400 megabytes at one time (when it comes to bulk editing). Maximum picture size can be up to 100 megabytes. Unlimited editing is allowed and is an important part of the program’s functionality.

1. Scalability or Extensibility

ID: 4.7

Type:

Description:

Rationale:

The program shall later be capable of 1,000 images or 4 gigabytes of space at one time (from the original 100 images/400 mbs). This program supports about 20 different editing tools which will be extended to 100 tools on the Pro edition.

1. Longevity

ID: 4.8

Type:

Description:

Rationale:

The program will continuously receive updates and improve functionality over the span of 5 years.

## Maintainability and Support

The new system must include the following:

1. Maintenance

ID: 5.1

Type:

Description:

Rationale:

A new program update can be seen issued around the first week of launch. A report shall be given there after and a weekly feed on improvements and changes coming over the next couple of updates will be given. Users should not have to worry about maintenance work as the program will continue to function offline. Monthly updates at the end of each month will be adding the majority of new tools/functions and bug fixes.

1. Supportability

ID: 5.2

Type:

Description:

Rationale:

The program will contain pop ups and tutorials on how to use each feature to help the user understand what each tool does. A more dedicated and detailed tutorial will be located in the help section of the program. If any issues are perceived or questions need to be asked there will be a forum dedicated to questions and bugs/issues. A forum support team will communicate these issues to the programmers and a fix shall be incorporated and a reply in as little as one week shall be issued.

1. Adaptability

ID: 5.3

Type:

Description:

Rationale:

The program is expected to run under Windows 10 and Linux systems. The program currently is installable in the United States however international downloads for other countries such as Mexico and Japan will be integrated in their respective languages. The program currently is dedicated for computers however a mobile and tablet version is intended to be developed.

## Security

The new system must include the following:

1. Access

ID: 6.1

Type:

Description:

Rationale:

Only high-level cyber security personnel will access and manage accounts.

Forum support team can only access public data from accounts and therefore must contact cyber security personnel for more detailed info such as password resets and changes/deletions.

1. Integrity

ID: 6.2

Type:

Description:

Rationale:

The program does not store and does not upload any photos the user is editing. The program will include a layer of security to access accounts such as a two-factor authentication to prevent external attacks. High-level cyber security personnel will be certified and held accountable to weekly logs.

1. Privacy

ID: 6.3

Type:

Description:

Rationale:

If any data must be collected from the user they will be aware and it shall be known what shall be conducted on their personal information. If any changes occur in our policy the user shall be sent a pop up upon opening the program. According to the relevant laws on privacy and private information, all practices shall be followed according to policy.

1. Audit (what information must be recorded to allow security checks. E.g., logs)

ID: 6.4

Type:

Description:

Rationale:

If a user opens the program a log is created, and their login time and logout time is recorded to measure stats and obtain accurate information on usage. Security checks will be running monthly with the updates and weekly logs will be assessed to higher-level personnel. These actions support security for the user on where and when the program was accessed which can be sent to the user on request.

1. Immunity

ID: 6.5

Type:

Description:

Rationale:

A security program is to be implemented on the program to prevent malicious software on existing programs to run onto photo castle. Ads and third party programs are not incorporated into this program which helps prevent them from outside attacks. This program is to be built as secure as it can be so the user can edit without any malicious attacks or disturbances.

## Cultural

The new system must include the following:

1. Cultural

ID: 7.1

Type:

Description:

Rationale:

The program shall not be offensive to any religion or ethnic group. The program shall provide options for different languages and provide the appropriate spell checks. The program shall keep in mind all holidays for all countries and their system of measurements. Due to its minimalistic look, it will not have any issues with cultural diversity. Every symbol and color used will be checked to see if there are different meanings in another culture to avoid these culturally diverse issues.

## Implementation Plan

**Requirement Specification**

Each requirement will contain at least the following information.

1. ID Number
2. Type (*see the list above*)
3. Description
4. Rationale
5. Fit Criterion (*a measurable/testable condition to know if the product meets this requirement*)
6. Priority
7. Dependencies (*the ID of any requirement that must be completed before this requirement if any.*)

Remember, good requirements are precise, testable, unambiguous, and describe the real need.

## High-Level Timeline/Schedule

# Approval and Authority to Proceed

We approve the project as described above, and authorize the team to proceed.

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| --- | --- | --- |
| Name | Title | Date |
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