

**Image to PDF Converter**  
**Concept of Operations**  
**COP 4331, Fall 2016**

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### The Current System

Older applications require sending an image to a program which converts it to PDF format, then user will have to find the file to be able to send it via e-mail. Each time a file is converted the user has to enter the file type and conversion type, which puts a lot of work on the user. Some programs might not support multiple images being put into one PDF file and if there are multiple file types it might not be supported. This process requires looking around the machine for where the files are and will be saved. However newer versions solved most of those problems but there are still downsides. So many Pop ups and adds interrupt users from getting their work done quickly and easily. Besides, after reading reviews on numerous applications users complaining about app crashes and bugs.

### The Proposed System: Needs

The proposed system will combine features into one app that will allow the user to convert many image files into PDF quickly and more efficiently. The application will have drop down menus so the user can select what file type will be converted into a PDF form. The user will then be directed to the Android phone's gallery where they will be able to choose the image for conversion. User will have the option to choose one or more images from the gallery. This channing of images into one file will help speed up the process as opposed to older systems. The application will also feature email so the user can send the image right from the application, this flow of control will allow for smooth file creation and sending. Commercials and pop ups will be eliminated. However to be able to make profit off of the app we will limit the number of times each single user can convert documents in a period of time. For unlimited number of conversion users can buy the pro version.

### The Proposed System: Users and Modes of Operation

We address a single class of user in that every user has access to the same features and will roughly utilize this feature set uniformly.

Our project will have two modes of operation. First is image to PDF conversion which allows multiple images to be collected in aggregate into a single document that is persistent across all systems.

Next is PDF distribution which will be handled by a convenient email interface that will allow the user to send the document to anybody with an

email address.

### **The Proposed System: Operational Scenarios**

Handwritten homework extraction: Student handwrites homework. However, he/she must submit the homework digitally. Said student doesn't have immediate access to a scanner but does have a smartphone to take digital pictures. This app will allow the student to link multiple images in a single portable document format that then can be easily processed digitally.

Note taking: Information either may not be in digital format, or might not be distributed for later review. When information is presented, the individual must take comprehensive notes of the session and distribute it to colleagues. The image to pdf converter will allow the user to easily take pictures of the session and will allow the ordering of notes by converting said images into a single PDF while offering an email interface to quickly send the file to colleagues.

Image organization: The user may have a wide array of images that need to be easily organized into a single space. By transferring these images to a PDF file, the user will have control in how these images are ordered and presented.

Image printing: The user may have a wide array of images that need to be transferred to some physical format. There needs to be some way to quickly organize a group of images into a single location so that a multitude of images can be printed in a timely manner. Instead of manually printing them off one by one, we could import these images into a single PDF easily allowing printing with a single click provided that the conversion is seamless, intuitive and offers responsive interfaces.

In general, the user may be posed with a situation in which information is quickly presented and/or must be quickly and easily distributed to others. Using images and a universal document format, this is possible provided that this images are of good quality and the document can be sent to others in a timely manner . Images will need to be free of artifacts, low on compression, and the email interface must be responsive to the user.

### **The Proposed System: Operational Features**

Must Have:

- support for importing images to pdf, one image per page
- Accessing the camera interface within the app for user convenience
- Extracting images from the Android gallery
- Interface for emailing the constructed PDF
- Support for multiple image formats
- portrait and landscape formatting options

Would Like to Have:

- Extracting images from any directory on the Android phone
- drag n drop user interface to easily order/format images on pdf
- Additional formatting options such as changing color scheme, shrinking images, more images per page, etc.

### **The Proposed System: Expected Impacts**

One of the main impacts would be developing a user interface that is seamless and intuitive for the end user. It should be responsive and have a suitable feature list that will meet the user's end needs. Another impact will be researching and learning how to utilize APIs and Android development tools that will ease app creation and support features such as PDF creation and manipulation.

### **The Proposed System: Analysis**

Expected Improvements:

- Quickly organize pictorial data
- Easily share pictorial data

Disadvantages:

- Unsupported images
- Unsupported other Microsoft formats

Limitations:

- Text in image won't be selectable
- Won't have other data, such as text, interspersed with the images in the PDF

Risks:

- Time taken in image collection and PDF conversion
- Formatting errors in PDF conversion
- Off balance colors in images
- Picture quality maintenance
- Seamlessness in email integration

Alternatives and Tradeoffs:

- Email applications that have this built in
- Compression issues
- Huge file in case couple of HD pictures uploaded