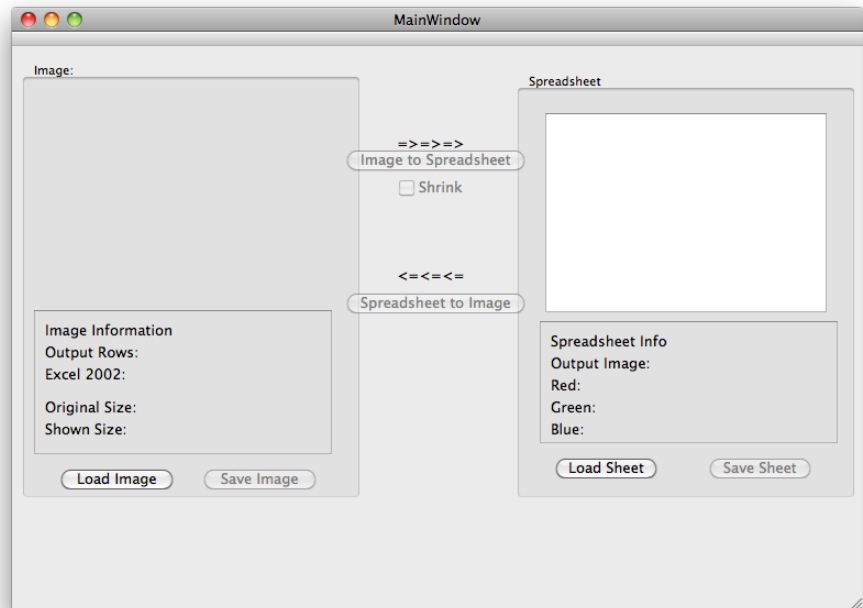


Pixel Spreadsheet

Lesson 1

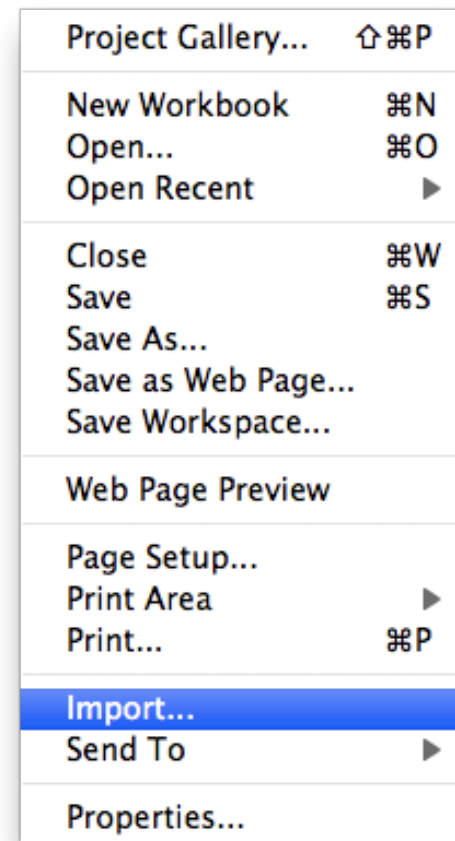
Step 1

- Convert each image into a spreadsheet.
 - Click the load image button
 - Select the mountain image file from the lesson folder
 - Press the Image to spreadsheet button
 - Press the save sheet button
 - Name the spreadsheet mountain
 - Repeat a-e for the Koala image
- An image is made up of a grid of pixels. Each pixel has a red, green, and blue value. The spreadsheet simply shows every pixel as a row element.



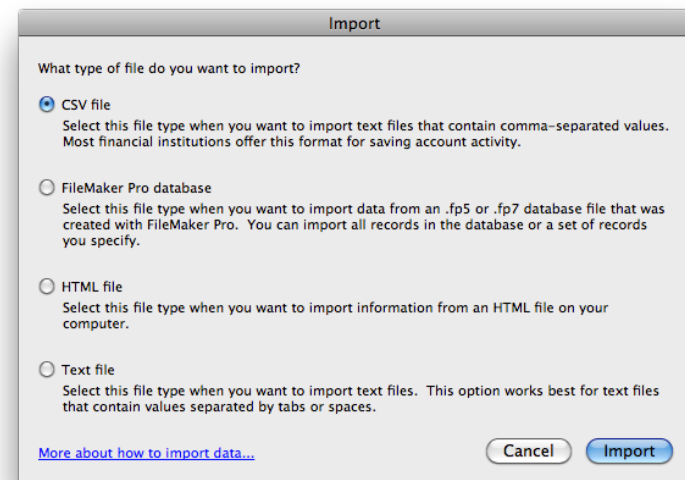
Step 2

- Create a new excel file
- Click on the 'Import Button'



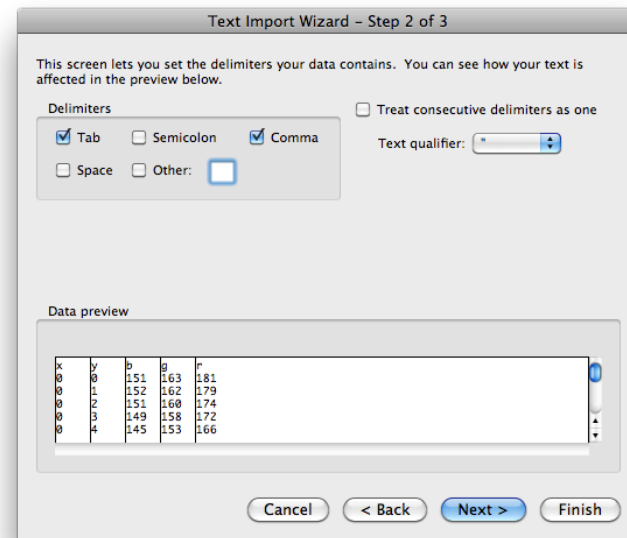
Step 3

- Select Mountain.CSV file
- Click Import



Step 4

- Click Next
- Make sure that tab and comma are selected
- At the bottom there should be 5 columns
- Press Next and then Finish



Step 5

- You will now have all of the data from the mountain image in your spreadsheet
- Repeat the import process for the koala
- At the last step, select the first free column after the data from the mountain image (F1)

Step 6

- The average of two numbers uses the formula $(x1 + x2)/2 = \text{Average}$
- We will use this formula on every pixel value to get the average of these two images
- In Excel, select the first blank column. This will be our new red
- Begin a formula by typing =
- Click on the first r element of the mountain data. This is x2
- Click on the first r element of the koala data. This is x1
- Write the mean equation from above using these points

Step 7

- Once completed with that cell, Excel can automatically fill in the rest for us
- Copy the finished cell
- Click on the column header to select the entire column
- Paste (Ctl+V or Command + V)
- Repeat for the g and b columns

Step 8

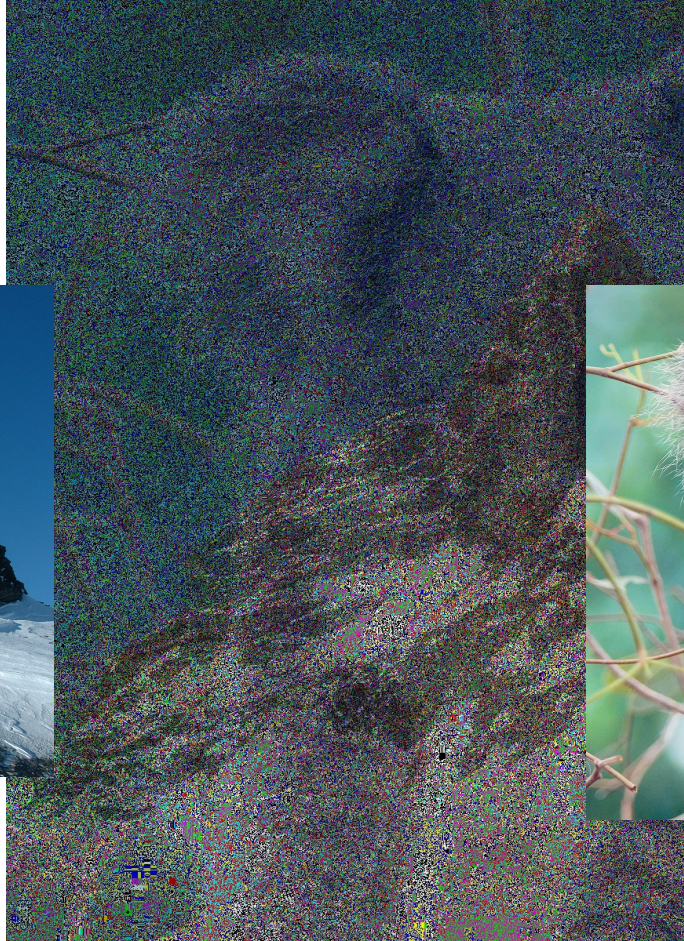
- Rename the newly created columns r,g, and b
- Rename the old columns as oldr, oldg, and oldb
- Save the file as a Windows formatted CSV

Step 9

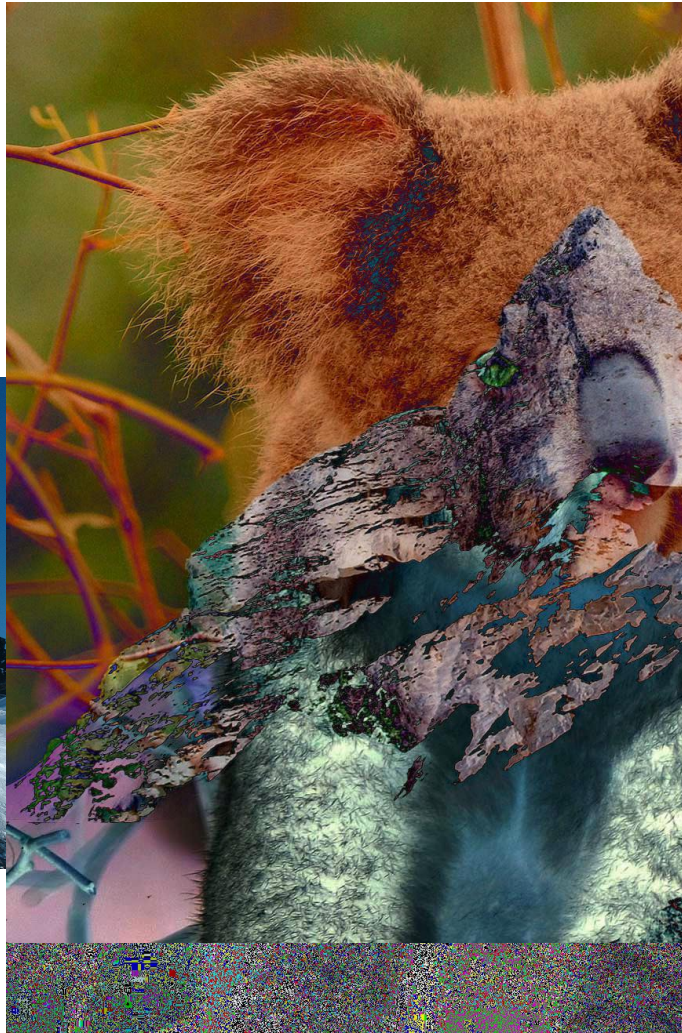
- **Instructions for converting back

Finished Result: Average

-



Finished Result: Subtraction



Finished: Single Channel Replacement

