A Note About The Quiz

• Minor Syntax Details Do Not Matter
  – (Mis)Spelling of Standard Functions
  – Function Argument Order

• Try your best to use the correct interface
Upcoming Important Dates

- Quiz Today @ Now
- Exercise 5 due @11:15 AM on Nov. 2\textsuperscript{nd}
- Midterm @ 11:30 AM on Nov. 4\textsuperscript{th}
- Homework 2 due @ 11:59 PM on Nov. 9\textsuperscript{th}
Portable Pixel Map (PPM) Images

• Format
  – A “magic” number (P6)
  – Whitespace (blanks, TABs, CRs, LFs)
  – A width, formatted as ASCII characters in decimal
  – Whitespace
  – A height, formatted as ASCII characters in decimal
  – Whitespace
  – Maximum Color Value
  – Whitespace
  – Triples of RGB pixels from top-to-bottom and left-to-right
Let’s Checkout A Small PPM

P6
#
2 2
255
abcdefgfhijkl
Let’s Checkout A Small PPM

P6
#
hi
2 2
255
abcdefgghijkl

Magic Number
Let’s Checkout A Small PPM

P6
#
2 2
255
abcdefgijkl

Magic Number
A comment
Let’s Checkout A Small PPM

```
P6
# hi
2 2
255
abcdefgkl
```

- **Magic Number**
- **Comment**
- **Width (in pixels)**
- **Height (in pixels)**
Let’s Checkout A Small PPM

P6  Magic Number
#
hi  A comment
2 2
255  Height (in pixels)
abcdefgijkl  Max Color Value

Width (in pixels)
Let’s Checkout A Small PPM

P6  #  hi  2  2  255  abcdefghijkl

- Magic Number
- A comment
- Height (in pixels)
- Max Color Value
- Width (in pixels)
- First Triple
- Second Triple
- Third Triple
- Fourth Triple
Let’s Checkout A Small PPM
Let’s Checkout A Small PPM

P6
#
2
255
abcdefg
hijkl

Green  Green  Green  Green
Let’s Checkout A Small PPM

P6
# hi
2 2
255
abcdefgfhijkl

Blue Blue Blue Blue
The result

<table>
<thead>
<tr>
<th></th>
<th>abc</th>
<th>def</th>
</tr>
</thead>
<tbody>
<tr>
<td>ghi</td>
<td></td>
<td>jkl</td>
</tr>
</tbody>
</table>
Let’s Reorganize It

• Group All The Colors Together
• Swap the dimensions
• Original String:
  – abcdefghijkl
• New String:
  – adgjbehkcfil
The Result

• abcdefghijkl -> adgjbehkcfil
Your Turn!

- Please go to the course website and download the images for today
- I’ve reorganized the colors (like the previous slide)
- I’ve swapped the x and y dimensions
Useful Functions

• File IO
  – fopen – Opens a file
  – fread – Reads from a file
  – fprintf – Printf... for a file!
  – fclose – Close a file
Outline

• Ignore the P6
• Ignore the comment
• Read the dimensions (x and y)
• Ignore the color max
• Read the entire color matrix
• Reorganize the RGB values
• Output content to new file