

Web Communication Effectiveness:

Design and Methods
To Get the Best Out Of
ODS, SAS[®], and SAS/ GRAPH[®]

No. 1 Usability Concern: download time
Simple web pages download *faster!!!*

Communication Is Effective

When Receiver

- gets/finds message from Sender
- gets same message as was Sent
- gets message quickly

Assumptions about:

- Web Browser Brand & Version
- Browser Features Enabled

- May be safe if designing for Intranet
- If Not, assume nothing
- Do not tell viewer to enable feature
- Design for worst probable case

Get Your Web Site Found with title=

- `ods html body="yourpagename.html"`
(**title**="this text identifies your content");
- used by search engines
- default text for web browser

Favorites or Bookmarks

- web page browse History list
- title bar for browser window

Search Engines Look at Meta Tags

➤ Coding Example: `ods html . . .`

`metatext=`

`name="keywords"`

`contents="word1, word2, . . ."`

➤ good resource for meta tags info:

www.vancouver-webpages.com/META/

Multiple Meta Tags via ODS

- to define: email me, or try sas.com
- html takes unlimited number of meta tags:
`name="keywords" name="description"`
`name="authors" ...`
- But ODS metatext= supports only
max. 258 characters across all tag defs*
*ODS postprocessor circumvention?

Search Engines*

➤ how to get your web site found:

www.searchenginewatch.com

➤ how to make your searches more effective:

www.searchengineshowdown.com

*I like google.com

If there is a better one, please tell me

Web Window to the World

- Commonest resolution on PCs
still only 800 X 600
- Non-trivial fraction of this
used by browser
- Use remainder wisely

They Don't Want to Scroll

- up-down tolerable, not preferred
- sideways, usually disliked,
frustrates effective viewing
(exceptions: wide trend, wide map)
- up-down AND sideways — **AVOID**

They Want to See It ALL

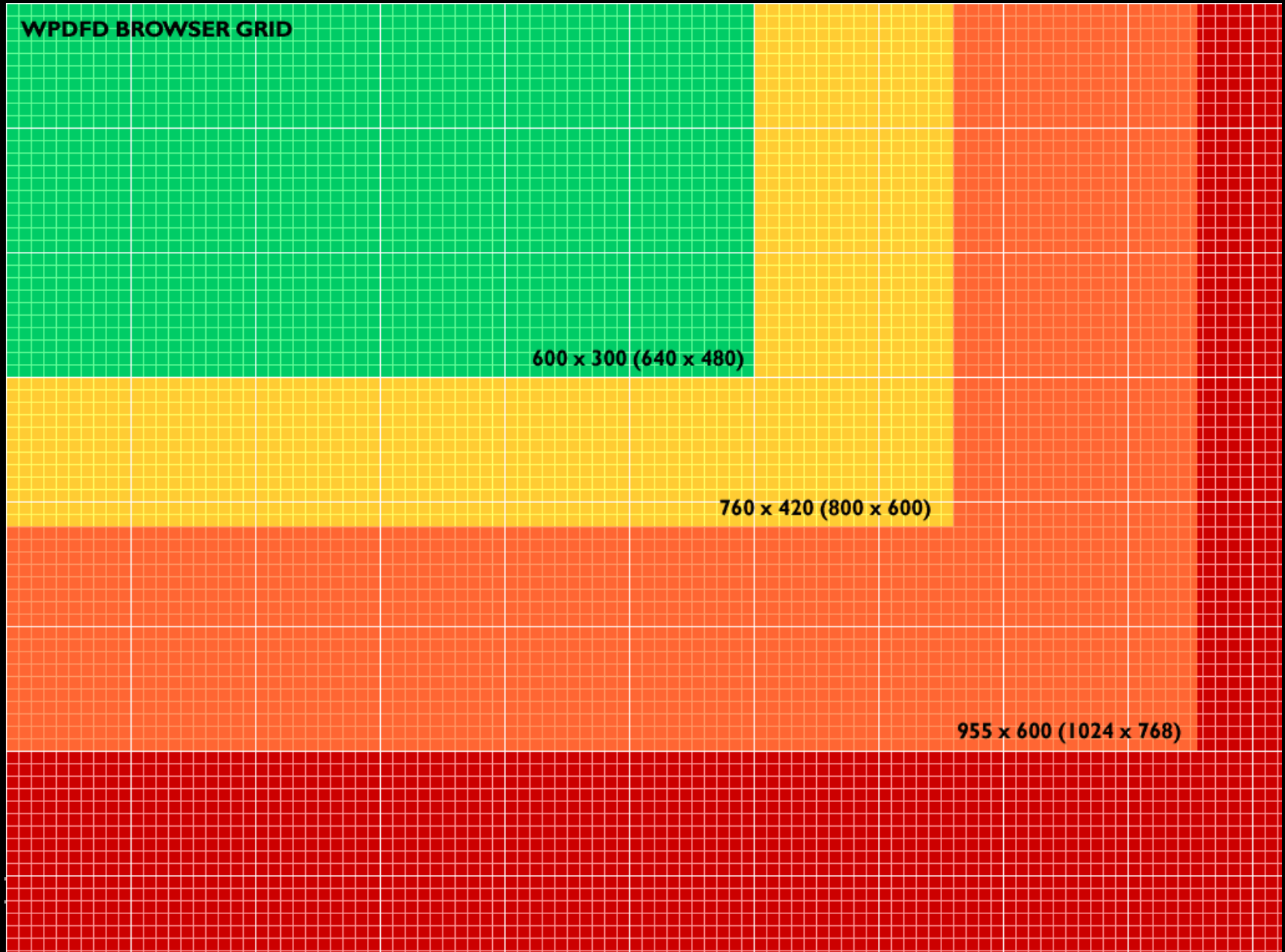
- Design & build for FULL view on smallest probable screen
- Available display space varies:
 - Internet Explorer vs. Netscape
 - Version of web browser
 - PC vs. Mac
- What's left: “live area” or “live space”

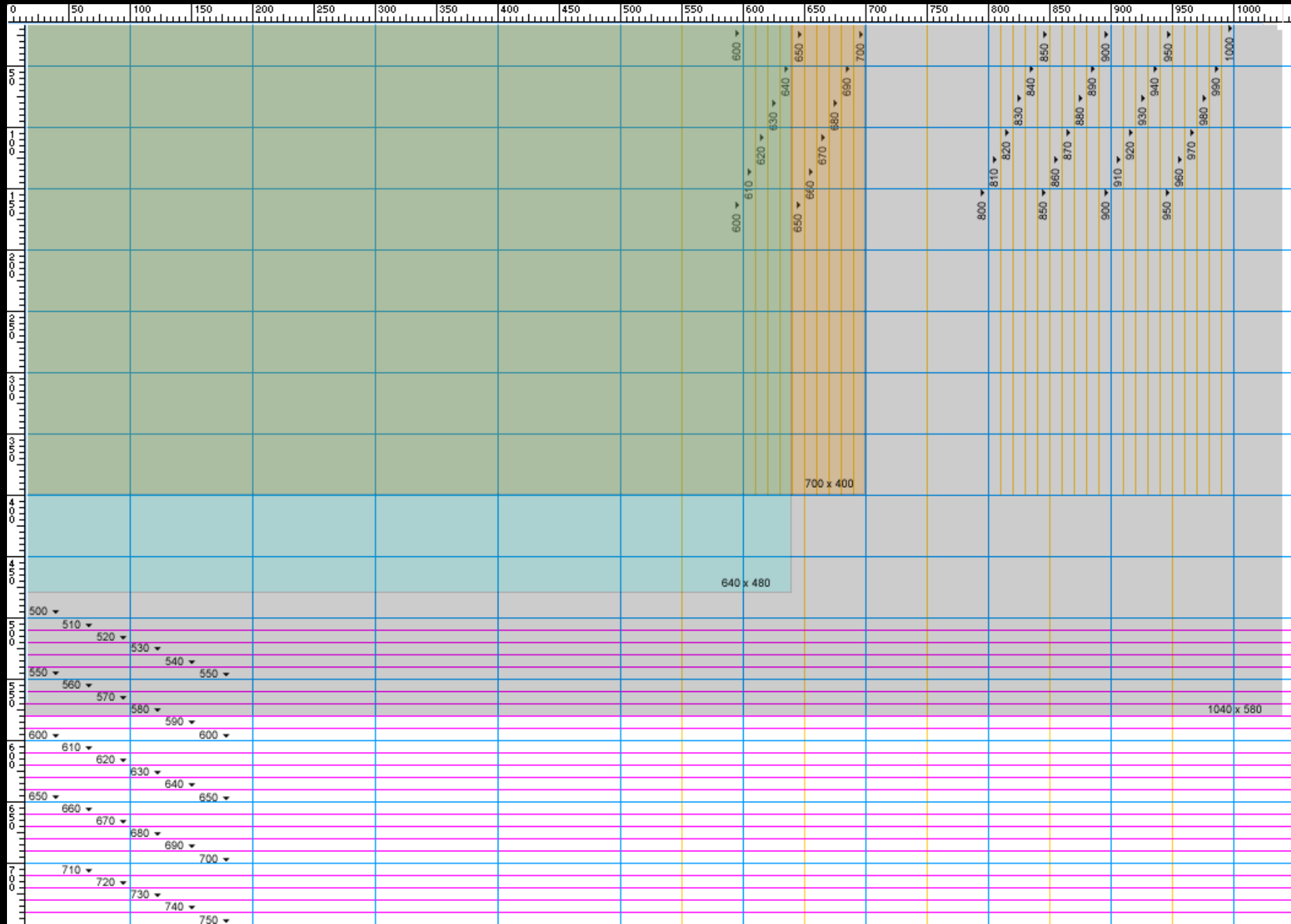
Test Your Design at Other Resolutions

- Change your screen resolution:

Click Start > Settings > Control Panel
> Display > Properties > Settings

- Or, as background to web page,
use grid marked with “live area”
for various cases





Accessibility for Impaired Users

- sas.com/service/techtips/ts_qa/ODS508.html
- “Universal Web Design” by Crystal Waters
- Web Accessibility Initiative:
www.w3.org/WAI/
- Get your pages evaluated for accessibility:
bobby.watchfire.com
- Any User: www.anybrowser.org/campaign/

Accessibility for Impaired Users & All Users

One of the tools: **ALT=** (flyover
descriptors available even when
images turned off / not fully loaded)

ALT text can be translated to voice

ALT= for a graph

html= (or html_legend=)

‘ alt= “describe this area/point”
href=“OtherPageName.html” ’

can use alt= without href=

(To provide ALT text for images,
see my “The Power of Pictures”)

ALT Text Benefits ALL Users

- Quick peek at
precise values on a trend chart
- Avoid download of look-up table

Unneeded Complexity

Distorts, Impedes, or Delays Communication

sparse web page
focuses attention

sparse web page
downloads *faster!!!*

Sparse Communication-Effective
Graph & Map Examples:
“Easy, Elegant, Effective SAS Graphs”
Also, prior SUGI Papers

Focus on the data

Tables do not *need*
grids or backgrounds

Set Your Data Free (no cells)

```
proc template;  
edit styles.default as styles.our_style;  
style output from container /  
frame=void          no walls around the table  
rules=none  no walls between labels & data  
cellspacing=0;      no walls between the data  
end; run;
```

Focus Your Web Page

- They don't want to scroll
- If multiple objects fit on web page, OK
- If not, put on separate pages*

*Justified exceptions include long text,
need to compare things. What else?

Focus Your Web Page

- Multi-object web pages can confuse
- Forcing viewer to print multiple objects, when she/he is interested in only one, is annoying

Table of Contents and Scrollable Web Page Using ODS Default Style

The screenshot shows a Microsoft Internet Explorer window titled "SAS Output Frame - Microsoft Internet Explorer". The address bar displays "C:\WebDesign\WebPages\StartDefaultTOCandBodyDemo.html". The page content is divided into two main sections. The left section, titled "Table of Contents", lists four items, each with a link to "SASHELP.CLASS":

1. The Print Procedure
·Data Set
[SASHELP.CLASS](#)
2. The Print Procedure
·Data Set
[SASHELP.CLASS](#)
3. The Print Procedure
·Data Set
[SASHELP.CLASS](#)
4. The Print Procedure
·Data Set
[SASHELP.CLASS](#)

The right section contains two tables. The first table is titled "Students Whose Names Begin with 'A'" and contains two rows of data:

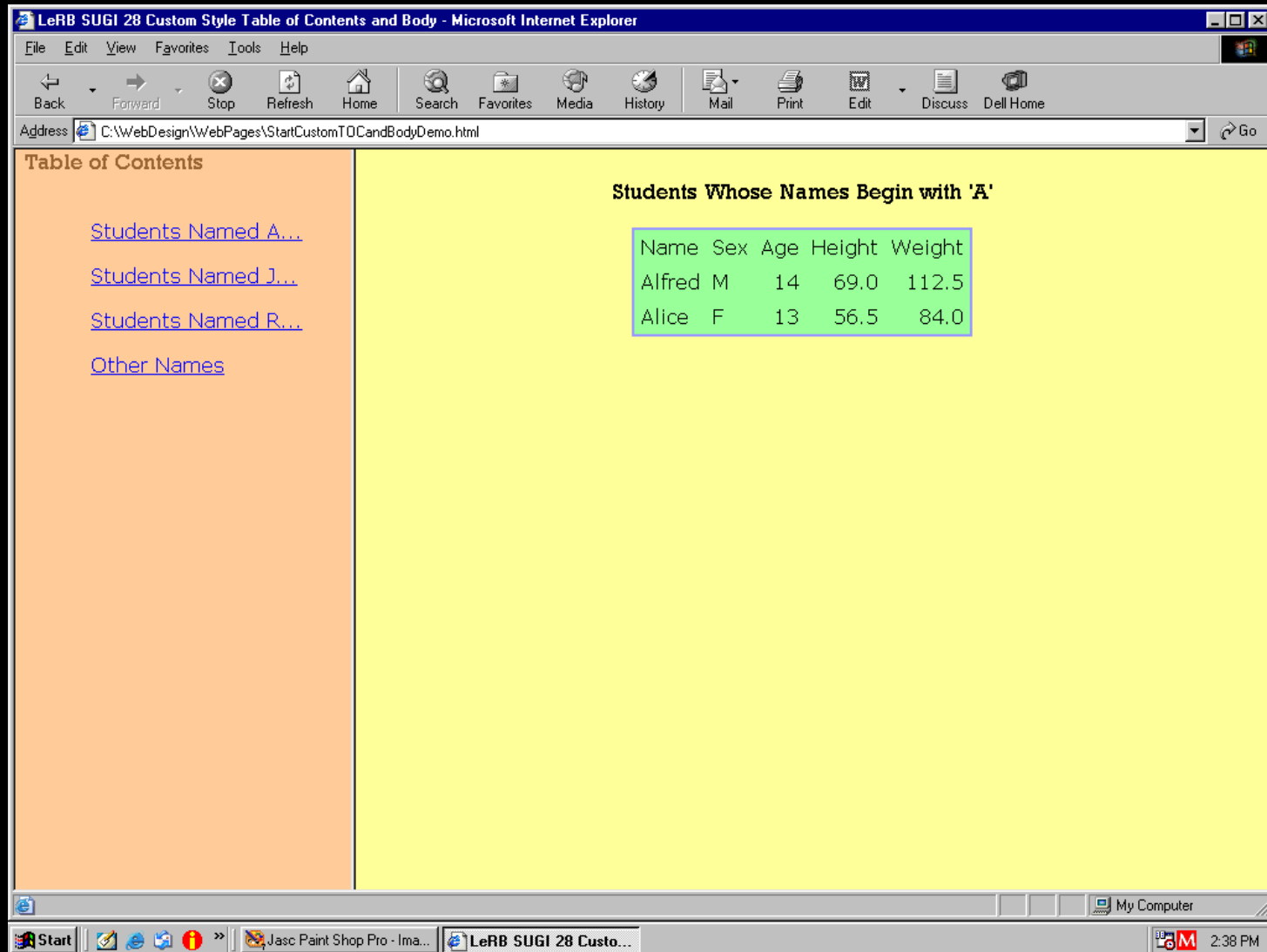
Name	Sex	Age	Height	Weight
Alfred	M	14	69.0	112.5
Alice	F	13	56.5	84.0

The second table is titled "Students Whose Names Begin with 'J'" and contains seven rows of data:

Name	Sex	Age	Height	Weight
James	M	12	57.3	83.0
Jane	F	12	59.8	84.5
Janet	F	15	62.5	112.5
Jeffrey	M	13	62.5	84.0
John	M	12	59.0	99.5
Joyce	F	11	51.3	50.5
Judy	F	14	64.3	90.0

The browser's status bar at the bottom shows "Done", "My Computer", and the system clock "2:37 PM".

Custom Table of Contents and Custom Separate Web Pages



Macros in the Paper

- No ODS coding required by you
- Easily & Quickly implement good design
- **%CustomBaseStyleBuild:**
custom base style to use as starting point
- **%TableOfContentsStyleBuild:**
more usable than ODS default TOC

Demos

- CrossLinked & DrillableWeb Pages

(no Table of Contents

no webframe with thumbnails)

- Combination of

well-designed TOC with CrossLinks

Colour does not improve
a bad design.

Use colour to communicate,
not to decorate.

- LeRB

Effective Communication with Colour:

Ask for my prior papers

Some of the SAS Colour Options

Developed for SAS/GRAPH:

- 292 “Predefined Colours”, American names, but visual result for some recently changed

Adopted from HTML

for ODS (and for SAS/GRAPH in Version 9):

- 140+ long colour names (e.g., PowderBlue)

RGB colour codes (CXrrggbb) are best

What are RGB Colours?

- Mixtures of Red, Green, Blue
- For colour display/projection
- RGB Colour Names: CXrrggbb with rr, gg, bb any hexadecimal value in range 00-FF (0-255 decimal)
- 16.7 million RGB colours
- Only 216 are Browser-Safe / Web-Safe

Beware of SAS html colour names*

- Only 10 are Browser Safe

Actually 8 (2 are synonyms)

- Green, “nominally” RGB browser-safe primary, is not browser-safe!!!
- Lime is web-safe Green (but you can use CX009900 as web-safe “typical” green)

* three typos in SAS 8.2 Color Registry

What is “Browser Unsafety”?

- many PCs set to use only 256 colours, regardless of capability of video card
- browser “inspects” PC to discover palette size
- if 256-colour PC receives web page with a non-Browser-safe colour, browser remaps it to a safe colour

Which RGB Colours Browser-Safe?

➤ **Only*** $6 \times 6 \times 6 = 216$ Browser-Safe colours:

00 33 66 99 CC FF (= 0 51 104 153 204 255)

as rr, gg, bb in CXrrggbb

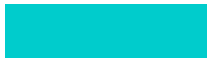
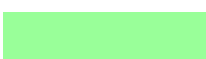
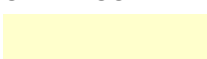
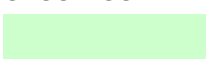
for 0%, 20%, 40%, 60%, 80%, 100%

of Red, Green, Blue

➤ Max rr + gg + bb = white, Min = black

***But how many colours do you really need?**

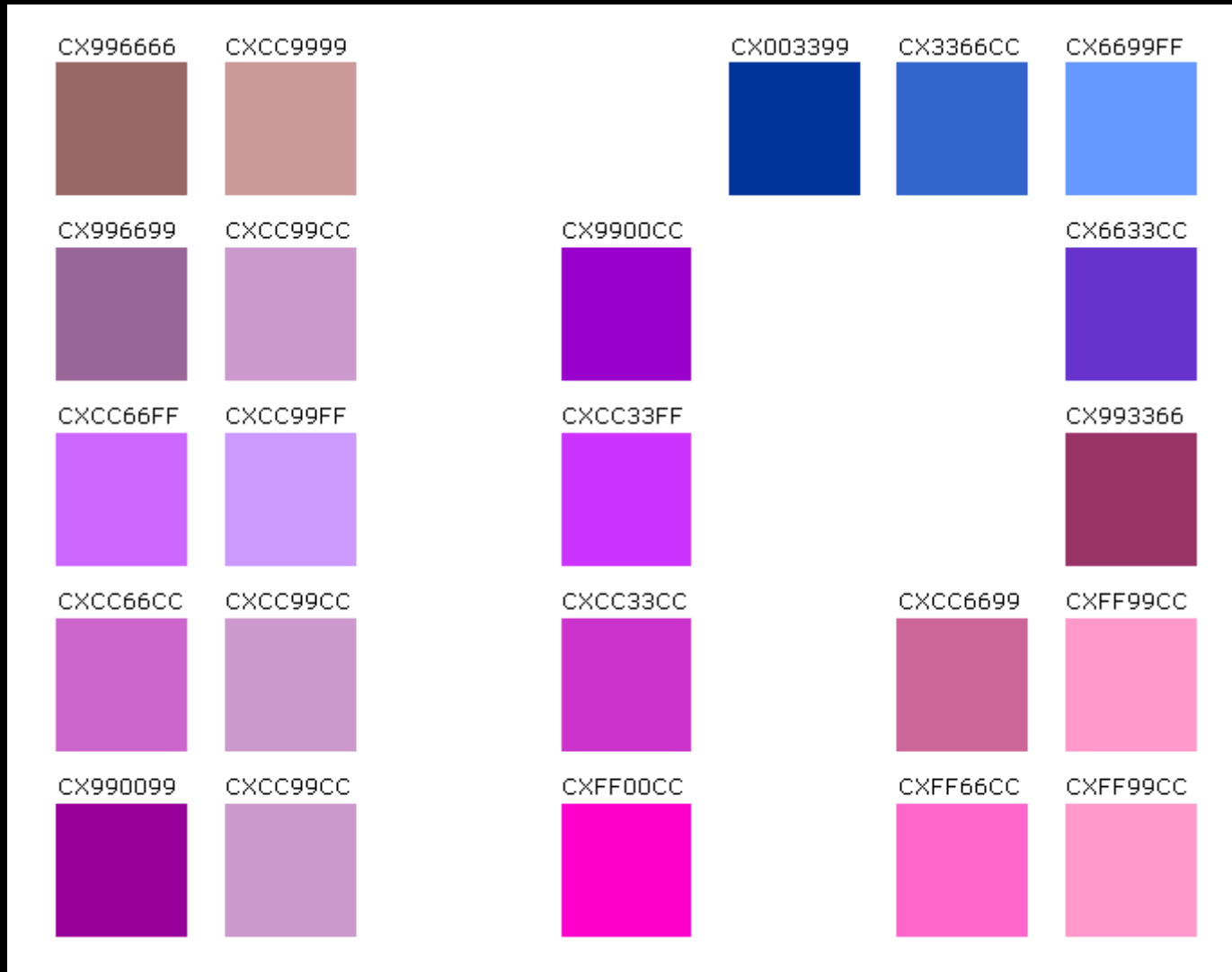
Every Browser-Safe Primary, Secondary, and Grey Distinguishability Problems Apparent

CX330000 	CX333300 	CX003300 	CX003333 	CX000033 	CX330033 	CXFFFFFF 
CX660000 	CX666600 	CX006600 	CX006666 	CX000066 	CX660066 	CXFFFFFF 
CX990000 	CX999900 	CX009900 	CX009999 	CX000099 	CX990099 	CXFFFFFF 
CXCC0000 	CXCCCC00 	CX00CC00 	CX00CCCC 	CX0000CC 	CXCC00CC 	CXFFFFFF 
CXFF0000 	CXFFFF00 	CX00FF00 	CX00FFFF 	CX0000FF 	CXFF00FF 	CX000000 
CXFF3333 	CXFFFF33 	CX33FF33 	CX33FFFF 	CX3333FF 	CXFF33FF 	CX333333 
CXFF6666 	CXFFFF66 	CX66FF66 	CX66FFFF 	CX6666FF 	CXFF66FF 	CX666666 
CXFF9999 	CXFFFF99 	CX99FF99 	CX99FFFF 	CX9999FF 	CXFF99FF 	CX999999 
CXFFCCCC 	CXFFFFCC 	CXCCFFCC 	CXCCFFFF 	CXCCCCFF 	CXFFCCFF 	CXCCCCCC 

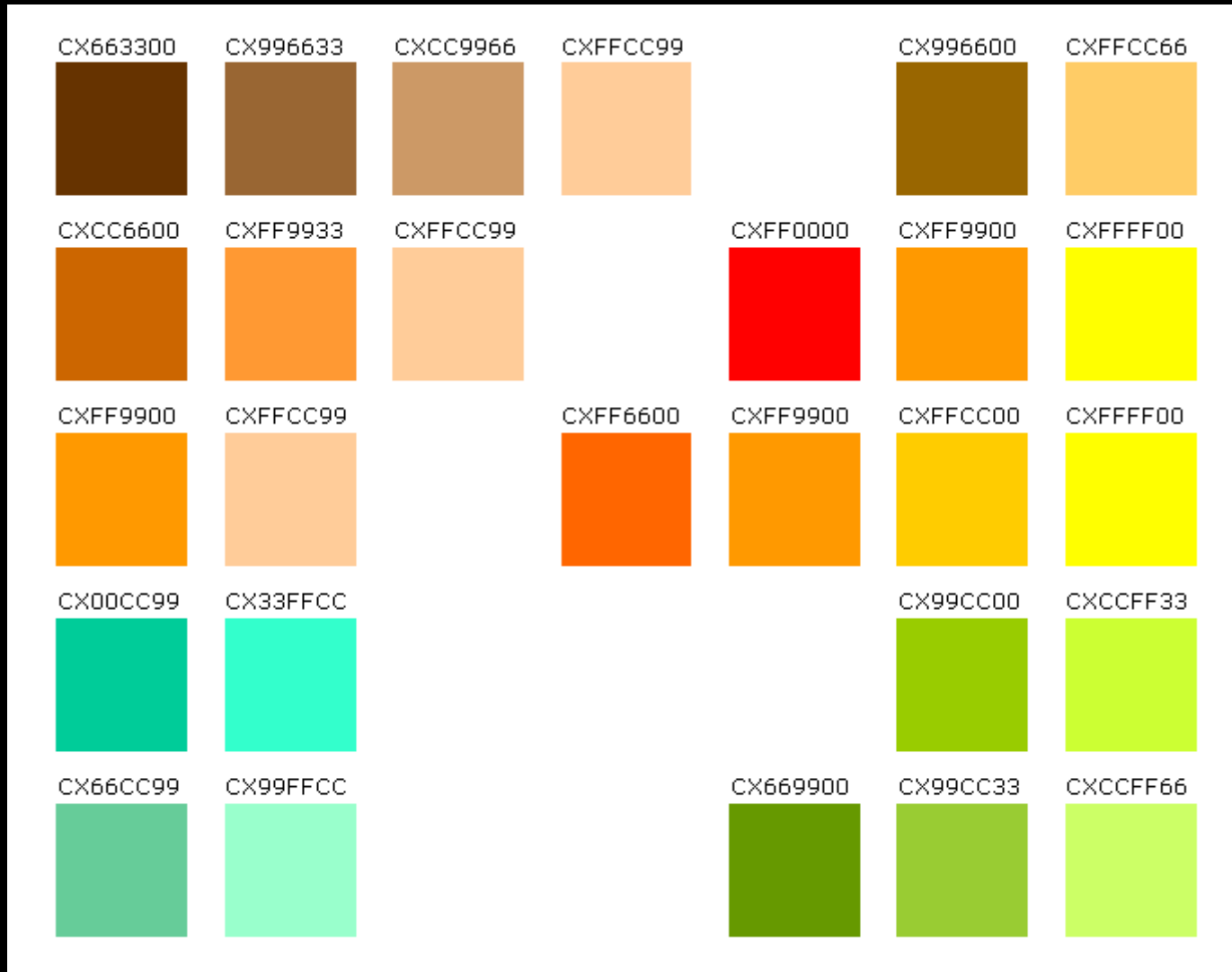
Adding Grey to, and Reducing “Strength” of, Browser-Safe Primaries and Secondaries



Some Browser-Safe Hues



Still More Browser-Safe Hues (in combinations)



Web Page Background

- Choose your background colour
- default gray is boring,
does not make data or text more legible

Use Solid Colour Background

- NO texture, NO transition, NO image
- variable contrast with text & lines

impairs readability/visibility

Basic Rules for Text

- Please keep it horizontal

- **NO BLINKING**

- not everyone likes

- frustrates web tools

used by visually impaired

Emphasize Colourless Text with

➤ **Bold**

➤ *Italics ???*

➤ (if used sparingly) ALL CAPS

➤ DO NOT use Underline

(web signal for links)

Best TrueType Fonts for the Web

Beyond popular Times New Roman and Arial

Matthew Carter's designs for web:

Georgia (serif) and Verdana (sans serif)

Make Font Samples

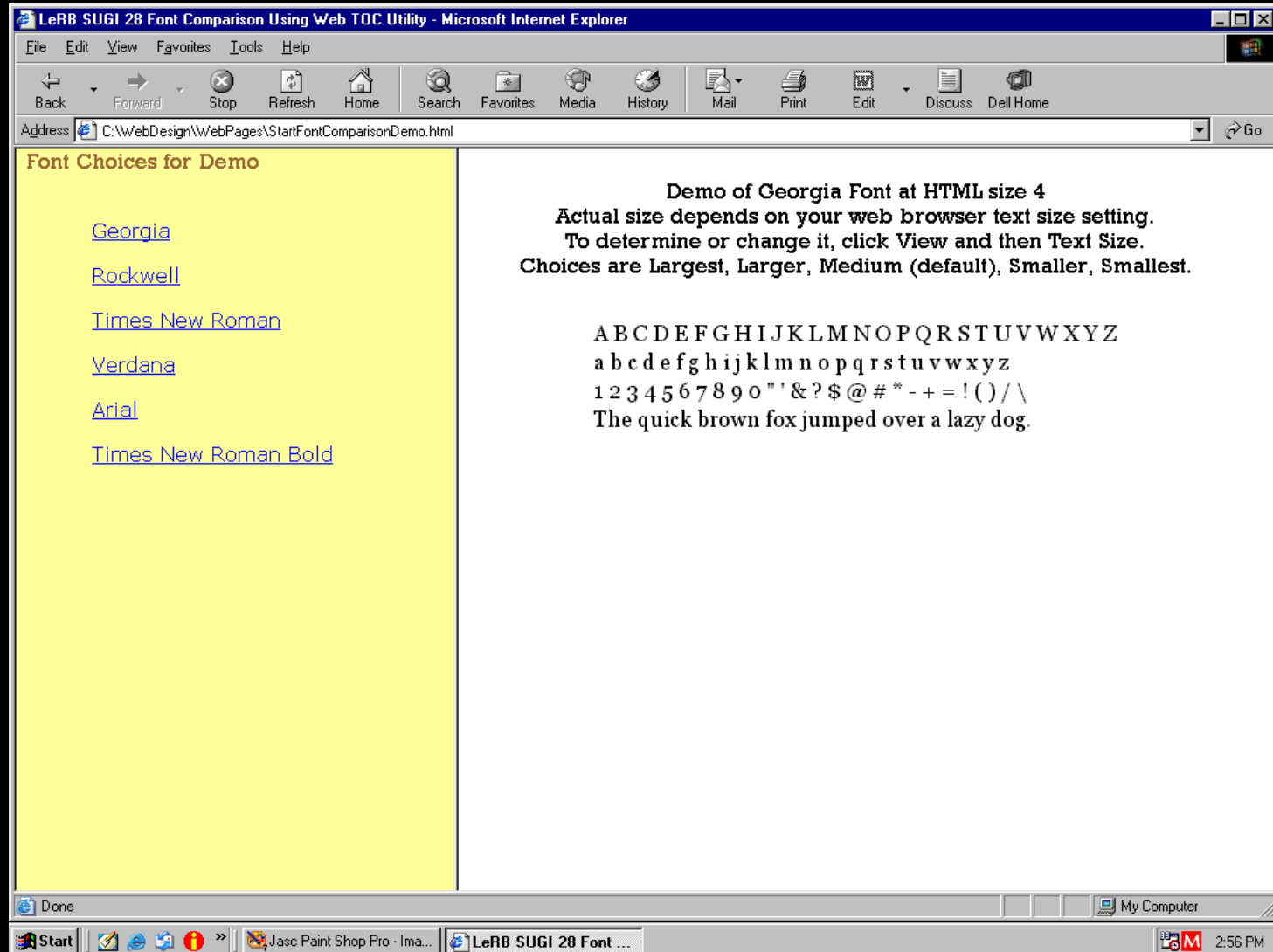
- No SAS analogue to PROC GFONT to produce TrueType font displays
- For simple font sample, use %FontTable from the paper

Make Font Samples

- Every TrueType font contains more than alphabet and numbers
- To see 256 “characters”, use BFONT (my unpublished font sample utility)

Create Samples of TrueType Fonts

Use Custom Table of Contents + %FontTable



Test Text-on-Background for Colour Combination Readability

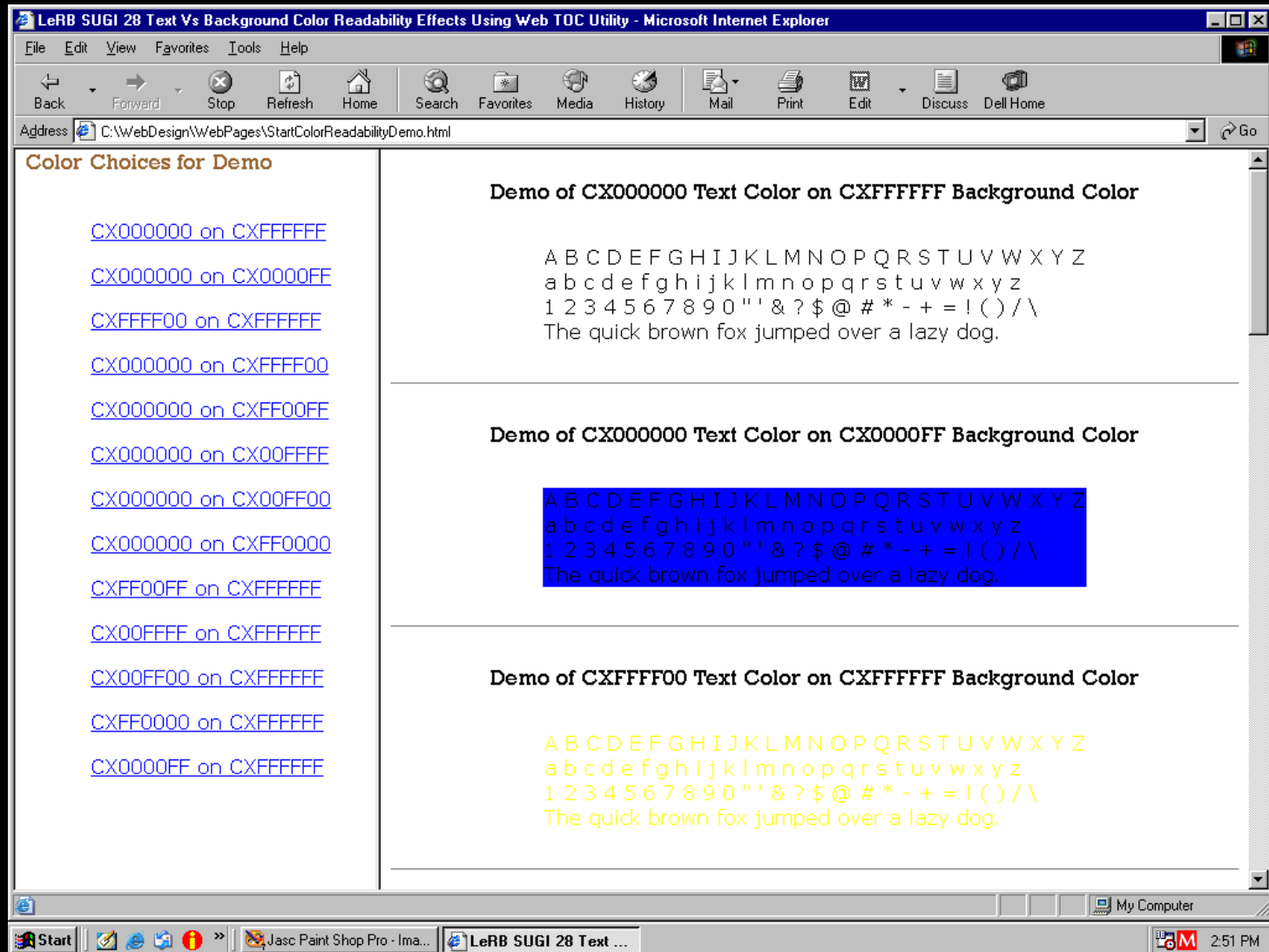
➤ %ColorTable from the paper

or

➤ home.il.net/~dwolfe/hexmixer/

Test Text-Background Colour Combinations

Use Custom Table of Contents + %ColorTable



Fonts & Sizes

- Georgia best for large print
- Verdana best for fine print
- Sizing fonts on a graph or table:

title large

main body medium, or small if space constraints

footnote large if important message

Can You Preserve Text Appearance?

➤ Fonts in graphs:

“what YOU see is what THEY see”

➤ Fonts outside graphs on web page:

➤ ODS converts point sizes to html sizes 1-7

➤ web browser maps 1-7 back to point sizes

based on viewer's Browser Preferences

Inconsistency within Page

you can assign same point size

- for font used in graph

- for non-graphic part of page

but not necessarily same result

at web browser

For Graphs, Next Best Thing to Font Embedding

- Use ODS html options

GTITLE & GFOOTNOTE:

SAS/GRAPH can draw graph titles & footnotes with TrueType fonts

- **NOGTITLE & NOGFOOTNOTE**

give undesirable page layout results

For Non-graph Parts, Control Font Substitution

Viewer's PC may not have font you specified

- Define ODS STYLE with font alternatives

- serif:

“Georgia, Times New Roman, Times”

- sans serif:

“Verdana, Arial, Helvetica”

best Windows, old Windows, Mac/UNIX

Notice

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Related VIEWS 2001 Paper

“Show Your Graphs and Tables
at Their Best on the Web with ODS”
co-author Francesca Pierri

Related VIEWS 2003 Papers

- “Tell Them What’s Important . . .”
with co-author Francesca Pierri
- “The Power of Pictures . . .”
- “Easy Elegant Effective SAS Graphs . . .”

For your suggestions, comments,
questions, requests for slides, etc.:

LeRoy Bessler PhD

bessler@execpc.com

+1 414 351 6748

(USA PM / weekend

6 hours earlier than GMT)