SOA paper crunch

Image Processing and Statistical Analysis

Operating Systems Practical

October 29, 2014

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Image Processing in LaTeX

Statistical Analysis

Conclusion

Questions

Outline

Including an Image

- proper size
- prefer vector graphics (PDF files)
- caption
- diagram, dotted graph, pie chart, CDF, bar charts

Including an Image (cont.)

```
\begin{figure}
\centering
\includegraphics[width=0.5\textwidth]{img/sequential-progress}
\caption{Sequential Progress}
\label{fig:multimedia-dist:sequential-progress}
\end{figure}
```

PDF Image Files

- vector graphics
- may be created from EPS image files with `epstopdf`
- may be outputted from TikZ and PGF
- may be outputted/converted from Dia, Inkscape and Xfig

Inkscape

- vector graphics – SVG
- coloured diagrams, shapes
- may output EPS
  - `inkscape -E tree.eps tree.svg`

Dia

- diagrams in all shapes and sizes
- useful for architectural diagrams, flows, use cases
- may output EPS
  - `dia -t eps-pango -e architecture.eps architecture.dia`

Outline

Why Statistical Analysis?

- large amount of data
- experimentation, repetition
- values
- need statistical and graphical processing

Sample Results

- mean values
- standard deviation
- CDF (Cumulative Distribution Function)
- quartile

R

- `http://www.r-project.org`
- `http://cran.r-project.org`
- statistical computing and graphics
- tools for data processing and graphical output
- `apt-get install r-base`
- `R`
- `Rscript script.R <option>`

ggplot2

- `install.packages("ggplot2")` in R
- data visualization package
- `ggplot() + ...+ ...`

Outline

Conclusion

- use vector graphics whenever possible
- use proper tool for proper job
- use Inkscape and Dia
- large data are to be processed using R
- bar charts, plots, error bars are to be generated using R

Keywords

- image
- vector graphics
- Dia
- Inkscape
- R
- `ggplot2`

Outline