To Test The Capabilities of the Human and The Tool

Anupama Potluri

February 11, 2015

Contents

Abstract

This is to assess the capabilities of the tool, Microsoft's Word Processor, $MS - WORD$ and the student's comfort level with using it.

1 A Few Aphorisms

We will look at some of the font styles :

This is in *italics*. This is a *slanting* text. This is a **bold face** text. This is a SMALL CAPS text.

This is flushed to the right.

This is a text with flush to the left.

This is centered text.

1.1 Large Font Section

This is large text. This is even larger text. This is huge text.

This is even huger than the earlier one.

If you want the text to come in a separate line, separate them by a line too.

2 Enumeration with Latex

In this section, we will see how to enumerate items. For example, I might want to enumerate the advantages and disadvantages of using Latex. Then, I can do it as follows:

1. **Advantages:**
   - It produces output of a publishable quality.
   - It is very easy to do mathematical formulae.
   - It is very easy to do cross-referencing which is almost a nightmare in Microsoft Word and its clones.
2. **Disadvantages:**
   - Tables are not easy to do comparatively.
   - Compilation and debugging are not always straightforward, especially for beginners.

3 Including Images

We have a graph which represents a network topology in Fig. 1.
If we take the topology in Fig. 1 from section 3 and color them with different colors, we get the picture in Fig. 2.

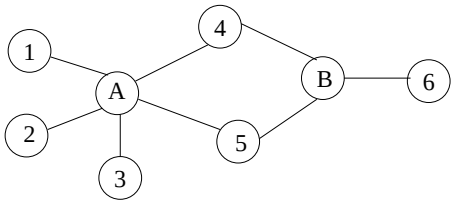
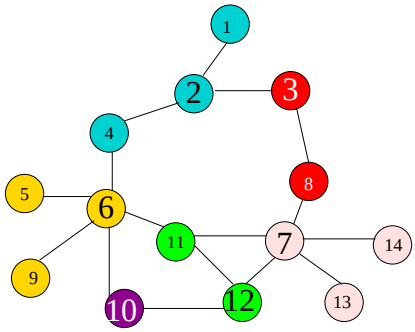


Figure 1: A topology



CapMDS = {2, 3, 6, 7, 10, 12}

Figure 2: A Color topology

4 Mathematical Formulae

All greek symbols[1] are very easy to write - such as α, β, ψ etc. Similarly, all mathematical relational symbols are also quite easy to do: $\neq$, $\leq$, $\geq$, $\simeq$, $\ll$, $\gg$ and so on. Set relationships are also easy: $\in$ to represent membership in a set, $\subset$ to represent subset, Set Minus is $\setminus$ and so on.
A superscript x^2 and subscript y_{z1} can be easily done.
A fraction is given as follows: $\frac{x+y}{2^{xy}}$
To get an equation on the next line, you can do the following:

$$\sum_{x}(x^2+1) = \sum_{x-1} x + f(y)$$

To get an integral, you just say $\int_0^\infty x$.
You can get other special symbols using the package amssymb and amsmath - AMS standing for American Mathematical Society - which has defined these packages.
Thus you say $\mathbb{A}, \mathbb{B}, \mathbb{G}$ or $\mathcal{A}, \mathcal{B}, \mathcal{C}$ for different types of symbols.
Here is how you write a formula.
$\delta^\bullet : \mathbb{G}^\times \to \mathbb{G}^\bullet$ is such that $\delta^\bullet(X^\times) = \{x \in \mathbb{G}^\bullet \mid \exists e_{x,y} \in X^\times\}$

Let us now create an array: $\begin{matrix} a & b & c & d \\ d & e+f & g^2 & h \end{matrix}$

We can put the whole of the above in square brackets as follows: $\left[\begin{matrix} a & b & c & d \\ d & e+f & g^2 & h \end{matrix} \right]$

[1] All mathematicians are fond of these

Another example array with determinants etc.:

$$\left(\begin{array}{|cc|} \hline x_{11} & x_{12} \\ x_{21} & x_{22} \\ \hline \end{array} \begin{array}{c} y \\ z \end{array} \right)$$

You can have ellipsis in the text with lower alignment ... or centered alignment as in $\cdots$.
A nice formula:

$$x = \begin{cases} y^2 & \text{if } y > 0 \\ y^{-2} & \text{otherwise} \end{cases}$$

The same with an equation number:

$$x = \begin{cases} y^2 & \text{if } y > 0 \\ y^{-2} & \text{otherwise} \end{cases} \tag{1}$$

The **stackrel** command stacks one symbol over another: $A \stackrel{a'}{\to} B \stackrel{b'}{\to} C$

5 Creating Tables

Table 1: An Example multi-column Table with columns separated by different separators

Column 1	**Column 2**	**Column 3**		**Column 4**	
		γ	**Time (s)**	γ	**Time (s)**
1	2	3	4	9	10
5	6	7	8	11	12
a	b	c	d	m	n
e	f	g	h	i	w

We show an example table in Table 1.

6 Advanced Features

We can create boxes around text.
We can create theorem environment as follows:

Theorem 1 *The sum of the squares of the sides of a right-angled triangle is equal to the square of the hypotenuse.*

Axiom 1 *Axiom scheme for Universal Instantiation.*