

To Test The Capabilities of the Human and The Tool

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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 in this section through some aphorisms picked up or adapted from famous people.

“To be a Giant amongst Pygmies or a Pygmy amongst Giants, that is the question”, a re-phrasing of the Shakespearean quote.

“Be who you are and say what you feel, because those who mind don't matter and those who matter don't mind” **Dr.Seuss**

“AGAINST STUPIDITY THE VERY GODS THEMSELVES CONTEND IN VAIN.” **Friedrich von Schiller**

“Any sufficiently advanced technology is indistinguishable from magic” **Arthur C. Clarke**

“If... the machine of government... is of such a nature that it requires you to be the agent of injustice to another, then, I say, break the law!”

Henry David Thoreau, On the Duty of Civil Disobedience, 1849

“Your honor, years ago, I recognized my kinship with all living beings, and I made up my mind that I was not one bit better than the meanest on earth. I said then, and I say now, that while there is a lower class, I am in it; while there is a criminal element, I am of it; while there is a soul in prison, I am not free.” **Eugene Debs**¹

¹during World War I

2 Tables

Table 1 is a simple table with many columns that are separated by a double line. Table 2, on the other hand, is more complicated with some columns having sub-columns in there.

Table 1: Results of using Heuristic, HGA, ACO-LS and ACO-PP-LS for Unit Disk Graph Instances

N	Edges (M)	Heuristic	HGA	ACO-LS	ACO-PP-LS
50	150	429.6	394.3	393.9	393.9
50	200	264.5	247.8	247.8	247.8
100	150	484.4	450.4	449.7	449.7
100	200	237.5	217.3	216	216
250	150	323.8	294.2	294.6	294.5
250	200	135.1	119.1	118.9	118.9

Table 2: Cardinality (γ) of MDS and Time taken in seconds using Heuristic, Hedar, HGA and ACO-LS for Router Waxman Instances with random and heavy-tailed (ht) placement of nodes

N	Range	Placement	Heuristic	Hedar		HGA		ACO-LS	
				γ	Time (s)	γ	Time (s)	γ	Time (s)
50	100	ht	13.5	15.1	0.1	12.1	0.6	12.1	1.0
50	100	random	12.4	14.4	0.0	11.6	0.7	11.6	1.0
50	200	ht	7.7	10.9	0.1	7	0.5	7	0.6
50	200	random	7.3	10.3	0.0	6.8	0.5	6.8	0.8
50	400	ht	4.7	6.7	0.2	4.2	0.4	4.2	0.5
50	400	random	4.1	6.6	0.1	3.8	0.3	3.8	0.4

3 An Ode to Unix and its Founding Fathers

Unix has been the most influential operating system in the world. The digital world would not be what it is today without Unix. Ken Thompson and Dennis Ritchie developed Unix on a DEC PDP-7 machine in 1969! The beauty of it is seen in the fact that no good Operating System developed so far has gone beyond it and even more importantly all the OSes developed after that, including Linux, are but clones of Unix. We see Ken Thompson sitting and Dennis Ritchie standing at a PDP-11 Computer in Fig. 1.

Figure 1: Ken Thompson and Dennis Ritchie with the PDP-11 Computer



Dennis Ritchie was also the inventor of the programming language *C*, which is the most widely used language in building IT infrastructure. Almost all operating systems of the world are built in *C*. Thus, every router that allows machines to be networked, every server that hosts the web sites and every machine is running only due to this beautiful language. Dennis Ritchie passed away in October of 2011 - in a way, unsung - as compared to the hype surrounding the death of Steve Jobs, the founder of Apple Computers that manufactures iPhone/iPad/iPod series of gadgets.

4 Mathematical Formulas

Let us see how well Microsoft's word processor is able to do mathematical formulae!

A fraction:

$$x = \frac{y + z/2}{yz^2 + 1}$$

Testing Ellipsis in Word: x_1, \dots, x_n and Centered Ellipsis: $a + \dots + z$.

If $x \not\leq y$ then $x \not\leq y - 1$.

We can have a formula on the next line as in:

$$\sum_{i=1}^n x_i = \int_0^1 f$$

or have it as part of the text itself as in: $\sum_{i=1}^n x_i = \int_0^1 f$ and its appearance will change nicely.

Let us now create an array:

$a + b + c$	uv	$x - y$	27
$a + b$	$u + v$	z	134
a	$3u + vv$	xyz	$2,978$

An array with delimiters and a determinant in it:

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

A nice formula:

$$x = \begin{cases} y & \text{if } y > 0 \\ z + y & \text{otherwise} \end{cases}$$

A formula is never complete without greek symbols. So, let us use a few:

$\delta^\bullet : \mathbb{G}^\times \rightarrow \mathbb{G}^\bullet$ is such that $\delta^\bullet(X^\times) = \{x \in \mathbb{G}^\bullet \mid \exists e_{x,y} \in X^\times\}$

$\epsilon^\bullet : \mathbb{G}^\times \rightarrow \mathbb{G}^\bullet$ is such that $\epsilon^\bullet(X^\times) = \{x \in \mathbb{G}^\bullet \mid \forall e_{x,y} \in \mathbb{G}^\times, e_{x,y} \in X^\times\}$

$\delta^\times : \mathbb{G}^\bullet \rightarrow \mathbb{G}^\times$ is such that $\delta^\times(Y^\bullet) = \{e_{x,y} \in \mathbb{G}^\times \mid \text{either } x \in Y^\bullet \text{ or } y \in Y^\bullet\}$

$\epsilon^\times : \mathbb{G}^\bullet \rightarrow \mathbb{G}^\times$ is such that $\epsilon^\times(Y^\bullet) = \{e_{x,y} \in \mathbb{G}^\times \mid x \in Y^\bullet \text{ and } y \in Y^\bullet\}$