CS 193 Homework 5

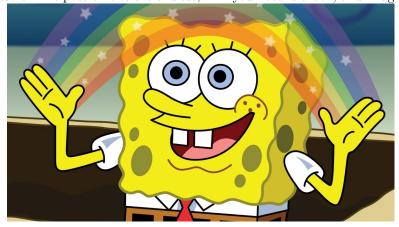Ananya Goel

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1   Why LaTex is Amazing

There exist a lot of reasons why LaTex is an amazing utility. This assignment hopes to detail a few of these reasons.

1.1   It is not Microsoft Word

LaTex is completely free to use! The same cannot be said about Microsoft Word.

1.2   There are tons of packages!

With LaTeX, you can install hundreds of packages to use with your document. This gives you a great degree of customization that isn't found with word processors. The possibilities are endless, "All you need is a box, and imagination."

1.2.1   Package Examples

These are some useful packages for LaTex that you might want to learn later. Make sure you make the package title bond when typing this list!

- **amsmath** (Making matrices)

- **biblatex** (Citations/Bibliography)

- **bookstab** (Nicer Tables)

- **xcolor** (Add Color to Documents)

1.3   Typing Code

Since LaTex is often used in mathematics and science, there is an easy way to type code. There are a few different ways to achieve this, but here we are using <u>verbatim</u> like this. . .

```
System.out.println("Hello World!");
```

1.4   Typing Code

Probably the best feature of LaTeX is the ease in creating mathematical expressions. This is likely the reason why it is so widespread in the mathematics and computer science research community.

2 Examples of Math Equations Expressions

In LaTeX, mathematical expressions can be places inline, like this $4 \div x = 2$. They can also be on a new line, like this:

$$\pi < 4$$

2.1 Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}.$$

2.2 Mean Formula

$$\bar{x} = \frac{\sum_{i=1}^{n} x_i}{n}$$

2.3 Integral of Inverse Sine

Hint: use \, (backslash and comma) to create a space between x and dx

$$\int sin^{-1}x \, dx = x sin^{-1}x + \sqrt{1 - x^2} + C$$