

# LaTeX Editor - Algorithm Assignment 2

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## 1 System Details

The experiments were conducted on a single machine with the following specifications:

- **Processor:** 11th Gen Intel(R) Core(TM) i5-11500 @ 2.70GHz
- **Architecture:** x86\_64
- **Operating System:** Ubuntu 22.04 LTS
- **Software:** Visual Studio Code

## 2 Mathematical Equations and Tables

Here is a list of mathematical equations and tables:

1. The area of a circle:

$$A = \pi r^2$$

2. Newton's second law:

$$F = ma$$

3. The exponential growth equation:

$$N(t) = N_0 e^{rt}$$

4. Fourier series representation:

$$f(x) = a_0 + \sum_{n=1}^{\infty} (a_n \cos(nx) + b_n \sin(nx))$$

5. Derivative of sine:

$$\frac{d}{dx} \sin x = \cos x$$

6. The chain rule:

$$\frac{dy}{dx} = \frac{dy}{du} \cdot \frac{du}{dx}$$

7. Taylor series expansion:

$$f(x) = f(a) + f'(a)(x-a) + \frac{f''(a)}{2!}(x-a)^2 + \dots$$

8. Volume of a sphere:

$$V = \frac{4}{3}\pi r^3$$

9. A 2x2 Matrix:

$$B = \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}$$

10. Table of Straw Hats Characters:

Table 1: Straw Hats Characters

<b>Name</b>	<b>Occupation</b>	<b>Age</b>
Luffy	Captain	29
Zoro	Right Hand	30
Nami	Ship Navigator	25
Usopp	Sniper	25
Sanji	Chef	24
Chopper	Doctor	40