# CS 251 - Lab 4
# LaTeX Basics & Advanced

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August 2022

# Introduction of myself

Something about myself, I am Atishay Jain, a 19-year old, humble sophomore studying Computer Science & engineering at IIT Bombay. Currently, I am living in Hostel 16, IIT Bombay, but my hometown is Tikamgarh, Madhya Pradesh. My interests include playing Keyboard, Cricket, Badminton, Carrom, Coding & Programming. I'm always keen to explore more about Programming and learn new things. I also like to go to gym now a days. Right now, I am learning many different important Softwares that programmers use quite often, as part of SSL lab. By the way, I have my own website, which was made a few days ago, *also as a part of SSL lab*. To know more about me, you can check out my website.

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# Introduction

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# Equations

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$$e^{i\alpha} = cos(\alpha) + i\ sin(\alpha) \tag{1}$$

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or the unlabelled equations like the force between two charges given by

$$F = \frac{1}{4\pi\epsilon_0}\frac{q_1 q_2}{r^2}$$

# Itemize and Linking

Also, LaTeXcan be used to present the items in a list format, for example, some common ways of sorting an array are:

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- Bubble sort
- Insertion sort , then there are the more rigorous algorithms like
- QuickSort
- Heap sort , *and then the best known algorithm*
- Monkey sort (or) Bogo-sort

Some pointers to the last algorithm can be found at here

# Matrices

We can also write matrices in LaTeX, for example the identity matrix of size (3x3) is

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Bonus: try to indent like the below equation

$$\begin{aligned} (\mathbf{a} \cdot \mathbf{b})^2 &= (\sum a_i b_i)^2 \\ &\leq (\sum a_i^2)(\sum b_i^2) \end{aligned}$$