Latex 学习

简单Latex例子及效果截图

(1). 第一个文档

```
\documentclass{article}
\begin{document}
hello, world
\end{document}
```

hello, world

(2). 标题、作者和注释

```
\documentclass{article}
\author{My Name}
\title{The Title}
\begin{document}
\maketitle
hello, world % This is comment
\end{document}
```

The Title

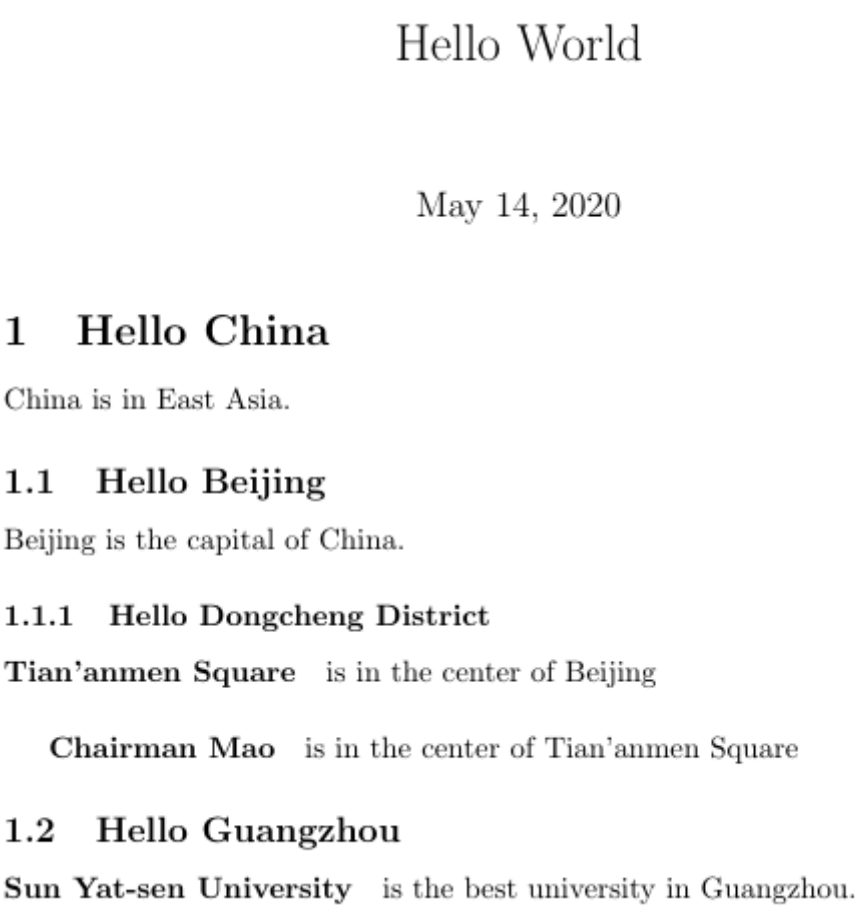
My Name

May 14, 2020

hello, world

(3).章节和段落

```
\documentclass{article}
\title{Hello World}
\begin{document}
\maketitle
\section{Hello China} China is in East Asia.
\subsection{Hello Beijing} Beijing is the capital of China.
\subsubsection{Hello Dongcheng District}
\paragraph{Tian'anmen Square}is in the center of Beijing
\subparagraph{Chairman Mao} is in the center of Tian'anmen Square
\subsection{Hello Guangzhou}
\paragraph{Sun Yat-sen University} is the best university in Guangzhou.
\end{document}
```



Hello World

May 14, 2020

1 Hello China

China is in East Asia.

1.1 Hello Beijing

Beijing is the capital of China.

1.1.1 Hello Dongcheng District

Tian'anmen Square is in the center of Beijing

Chairman Mao is in the center of Tian'anmen Square

1.2 Hello Guangzhou

Sun Yat-sen University is the best university in Guangzhou.

(4).加入目录

```
\documentclass{article}
\begin{document}
\tableofcontents    %目录
\section{Hello China} China is in East Asia.
\subsection{Hello Beijing} Beijing is the capital of China.
\subsubsection{Hello Dongcheng District}
\paragraph{Hello Tian'anmen Square}is in the center of Beijing
\subparagraph{Hello Chairman Mao} is in the center of Tian'anmen Square
\end{document}
```

Contents

1 Hello China

China is in East Asia.

1.1 Hello Beijing

Beijing is the capital of China.

1.1.1 Hello Dongcheng District

Hello Tian'anmen Square is in the center of Beijing

Hello Chairman Mao is in the center of Tian'anmen Square

(5).换行

```
\documentclass{article}
\begin{document}
Beijing is
the capital
of China.

New York is  %换行需要空一行

the capital

of America.

Amsterdam is \\ the capital \\
of Netherlands.
\end{document}
```

Beijing is the capital of China.
New York is
the capital
of America.
Amsterdam is
the capital
of Netherlands.

(6).数学公式

```
\documentclass{article}
\usepackage{amsmath}
\usepackage{amssymb}
\begin{document}
```

```
    The Newton's second law is F=ma.

    The Newton's second law is $F=ma$.

    The Newton's second law is
    $$F=ma$$

    The Newton's second law is
    \[F=ma\]

    Greek Letters $\eta$ and $\mu$

    Fraction $\frac{a}{b}$

    Power $a^b$

    Subscript $a_b$

    Derivate $\frac{\partial y}{\partial t} $

    Vector $\vec{n}$

    Bold $\mathbf{n}$

    To time differential $\dot{F}$

    Matrix (lcr here means left, center or right for each column)
    \[
    \left[
    \begin{array}{lcr}
    a1 & b22 & c333 \\
    d444 & e555555 & f6
    \end{array}
    \right]
    \]

    Equations(here \& is the symbol for aligning different rows)
    \begin{align}
        a+b&=c\\
        d&=e+f+g  % &符号加在等号前使得等号对齐
    \end{align}

    \[
    \left\{
    \begin{aligned}
    &a+b=c\\
    &d=e+f+g
    \end{aligned}
    \right.
    \]

\end{document}
```

The Newton's second law is F=ma.
The Newton's second law is $F = ma$.
The Newton's second law is

$$F = ma$$

The Newton's second law is

$$F = ma$$

Greek Letters η and μ
Fraction $\frac{a}{b}$
Power a^b
Subscript a_b
Derivate $\frac{\partial y}{\partial t}$
Vector $\vec{n}$
Bold $\mathbf{n}$
To time differential $\dot{F}$
Matrix (lcr here means left, center or right for each column)

$$\begin{bmatrix} a1 & b22 & c333 \\ d444 & e555555 & f6 \end{bmatrix}$$

Equations(here & is the symbol for aligning different rows)

$$\begin{aligned} a + b &= c && (1) \\ d &= e + f + g && (2) \end{aligned}$$

$$\begin{cases} a + b = c \\ d = e + f + g \end{cases}$$

(7).插入图片

先搜索到一个将图片转成eps文件的软件，很容易找的，然后将图片保存为一个名字如figure1.eps。 建立一个新文档，将以下内容复制进入文档中，保存，保存类型选择为UTF-8，放在和图片文件同一个文件夹里，编译并观察现象。

```
\documentclass{article}
\usepackage{graphicx}
\begin{document}
\includegraphics[width=4.00in,height=3.00in]{figure1.eps}
\end{document}
```

(8).简单表格

```
\documentclass{article}
\begin{document}
\begin{tabular}{|c|c|}
a & b \\
c & d\\
\end{tabular}

\begin{tabular}{|c|c|}
\hline
```

```
a & b \\
\hline
c & d\\
\hline
\end{tabular}

\begin{center}
\begin{tabular}{|c|c|}
\hline
a & b \\ \hline
c & d\\
\hline
\end{tabular}
\end{center}
\end{document}
```

a	b
c	d

a	b
c	d

a	b
c	d

例子

- 粗体向量

$$\boldsymbol{y} = \phi(\boldsymbol{x})$$

- 远小于、远大于

$$m \ll n, x \gg y$$

- 绝对值

$$|x|$$

- 求和

$$||\boldsymbol{x}||_p = (\sum_{i=1}^{n} |x_i|^p)^{\frac{1}{p}}$$