LaTeX 学习

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1 LaTeX 简介

LaTeX 是一个功能强大的排版准备系统。通过代码实现内容域样式分离。

2 LaTeX 绘图

2.1 绘图方式

- 命令模式

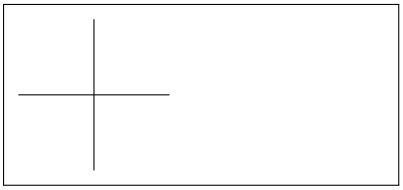
```
\tikz \draw (0,0) -- (1,1);
```

- 命令分组模式

```
\tikz{
\draw(0,0) -- (1,1);
\draw(0,1) -- (1, 0)}
```

- 环境模式

```
\begin{tikzpicture}
\draw (-1,0) -- (1,0);
\draw (0,-1) -- (0,1);
\end{tikzpicture}
```



- 起止命令模式

```
\tikzpicture
\draw (0,0) --(1,1);
\draw (0,1) -- (1,0);
\endtikzpicture
```

2.2 坐标表示

- 绝对坐标

```
\begin{tikzpicture}
\draw (0,1) -- (1,0);
\end{tikzpicture}
```

- 坐标单位（默认 cm）

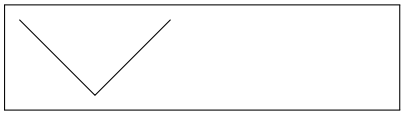
```
\begin{tikzpicture}
\draw (0pt,30pt) -- (30pt,0pt);
\end{tikzpicture}
```

- 相对坐标（+ 号）

```
\begin{tikzpicture}
\draw (0,1) -- +(1,-1);
\end{tikzpicture}
```

- 记录相对坐标（++ 号）

```
\begin{tikzpicture}
\draw (0,1) -- ++(1,-1) -- +(1,1);
\end{tikzpicture}
```

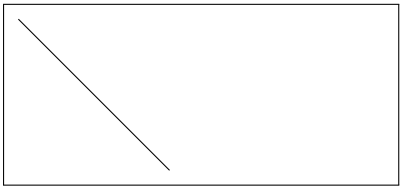


- 极坐标

```
\begin{tikzpicture}
\draw (90:1) -- (0:1) -- (2:1);
\end{tikzpicture}
```

- 坐标计算

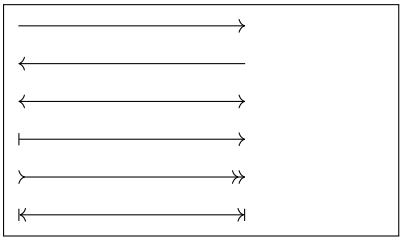
```
\begin{tikzpicture}
\draw (0,1) --($(0,1)-2*(-1,1)$);
\end{tikzpicture}
```



2.3 线段和折线

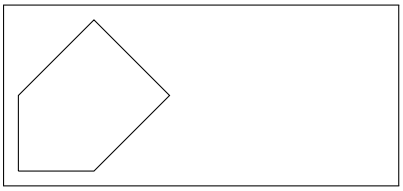
- 箭头

```
\begin{tikzpicture}
\draw[->] (0,2.5) -- (3,2.5);
\draw[<-] (0,2) -- (3,2);
\draw[<->] (0,1.5) -- (3,1.5);
\draw[|->] (0,1) -- (3,1);
\draw[>->>] (0,0.5) -- (3,0.5);
\draw[|<->|] (0,0) -- (3,0);
\end{tikzpicture}
```



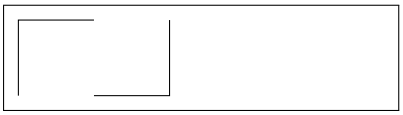
- 连续绘制

```
\begin{tikzpicture}
\draw (0,0) -- (0,1) -- (1,2)
 -- (2,1) -- (1,0) -- (0,0);
\end{tikzpicture}
```



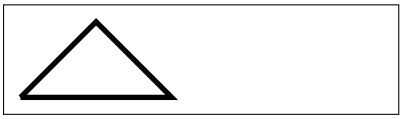
- 直角折线

```
\begin{tikzpicture}
\draw (0,0) |- (1,1);
\draw (1,0) -| (2,1);
\end{tikzpicture}
```



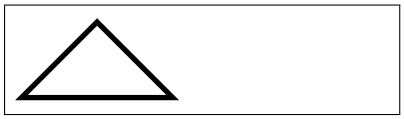
- 改变线宽

```
\begin{tikzpicture}[line width=
2pt]
\draw (0,0) -- (1,1)
 -- (2,0) -- (0,0);
\end{tikzpicture}
```



- 封闭缺口

```
\begin{tikzpicture}[line width=
2pt]
\draw (0,0) -- (1,1)
-- (2,0) -- cycle;
\end{tikzpicture}
```



- 绘制矩形

```
\begin{tikzpicture}[line width=
2pt]
\draw (0,0) rectangle (1,1);
\end{tikzpicture}
```

- 绘制网格

```
\begin{tikzpicture}
% step指明网格间隔
\draw[step=0.5](0,0) grid (3,3);
\end{tikzpicture}
```