

*Tik*Zische Erlebnisse

Dante Frühjahrstagung 2025

Uwe Ziegenhagen

12. März 2025

Inhalt

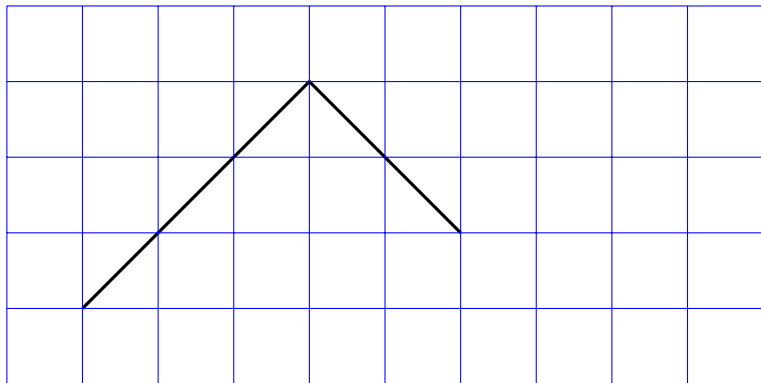
- ▶ Kurze (nicht vollständige) Vorstellung von TikZ-Grundlagen
- ▶ Beispiele, Beispiele, Beispiele. . .

Geschichte

- ▶ TikZ = „TikZ ist kein Zeichenprogramm“
- ▶ TikZ = „Frontend“ für PGF („portable graphics format“)
- ▶ Entwickler Till Tantau, Christian Feuersänger
- ▶ Erscheinungsjahr 2005

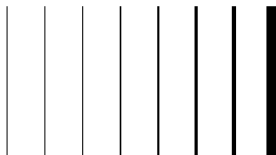
Einfache Linien

```
1 \begin{tikzpicture}  
2 \draw[very thick] (1,1) -- (4,4) -- (6,2);  
3 \draw[step=1cm,blue,thin] (0,0) grid (10,5);  
4 \end{tikzpicture}
```



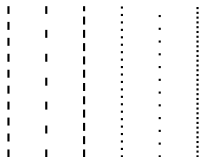
Liniendicken

```
1 \begin{tikzpicture}
2 \draw[ultra thin] (2,1) -- (2,3);
3 \draw[very thin] (2.5,1) -- (2.5,3);
4 \draw[thin] (3,1) -- (3,3);
5 \draw[semithick] (3.5,1) -- (3.5,3);
6 \draw[thick] (4,1) -- (4,3);
7 \draw[very thick] (4.5,1) -- (4.5,3);
8 \draw[ultra thick] (5,1) -- (5,3);
9 \draw[line width=4pt] (5.5,1) -- (5.5,3);
10 \end{tikzpicture}
```



Linienstile

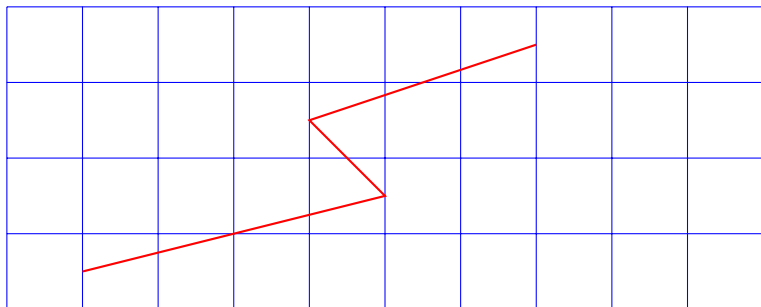
```
1 \begin{tikzpicture}
2 \draw[thick, dashed] (2,1) -- (2,3);
3 \draw[thick, loosely dashed] (2.5,1) -- (2.5,3);
4 \draw[thick, densely dashed] (3,1) -- (3,3);
5 \draw[thick, dotted] (3.5,1) -- (3.5,3);
6 \draw[thick, loosely dotted] (4,1) -- (4,3);
7 \draw[thick, densely dotted] (4.5,1) -- (4.5,3);
8 \end{tikzpicture}
```



Rel. Koordinaten I

mit Update der Koordinaten

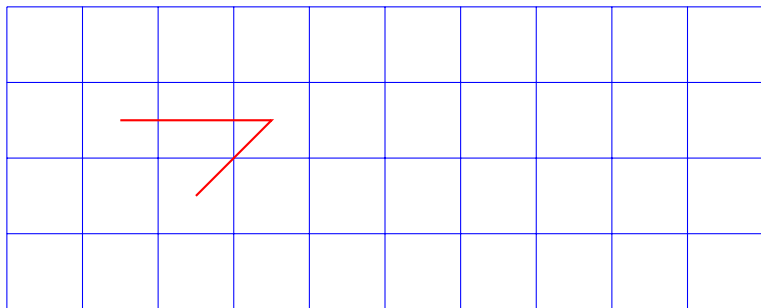
```
1 \begin{tikzpicture}  
2 \draw[step=1cm,blue,thin] (0,0) grid (10,4);  
3  
4 \draw[thick, red] (1,0.5) -- ++(4,1) -- ++(-1,1) -- ++(3,1);  
5 \end{tikzpicture}
```



Rel. Koordinaten II

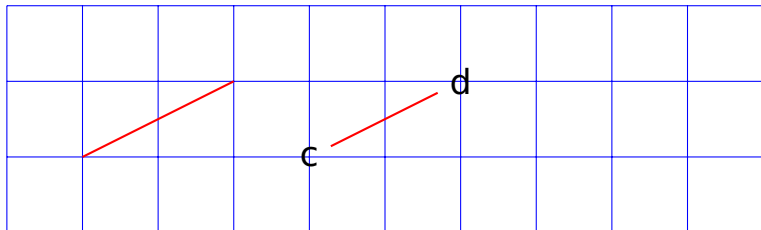
ohne Update der Koordinaten

```
1 \begin{tikzpicture}  
2 \draw[step=1cm,blue,thin] (0,0) grid (10,4);  
3  
4 \draw[thick, red] (1,0.5) -- ++(4,1) -- ++(-1,1) -- ++(3,1);  
5 \end{tikzpicture}
```



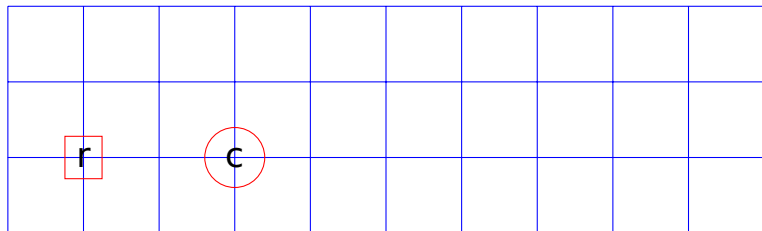
Nodes und Coordinates

```
1 \begin{tikzpicture}
2 \draw[step=1cm,blue,thin] (0,0) grid (10,3);
3
4 \coordinate (a) at (1,1);
5 \coordinate (b) at (5,3);
6 \draw[red, thick] (a) -- (b);
7
8 \node (c) at (3,1){c};
9 \node (d) at (7,3){d};
10 \draw[red, thick] (c) -- (d);
11 \end{tikzpicture}
```



Node Shapes

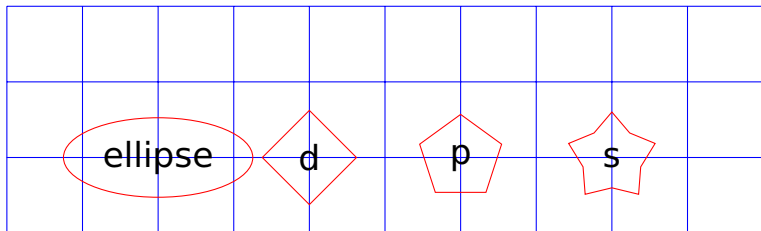
```
1 \begin{tikzpicture}
2 \draw[step=1cm,blue,thin] (0,0) grid (10,3);
3
4 \node[rectangle,draw = red] (r) at (1,1){r};
5 \node[circle,draw = red] (c) at (3,1){c};
6 \end{tikzpicture}
```



► more with `\usetikzlibrary{shapes}`

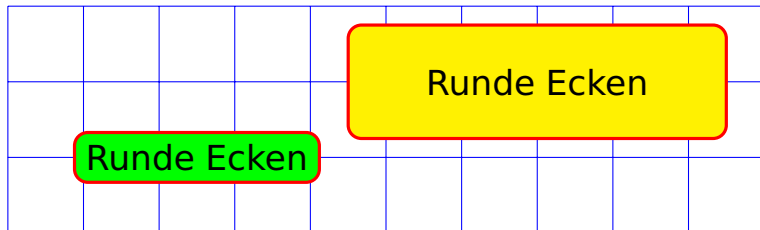
Mehr Node Shapes

```
1 \begin{tikzpicture}
2 \draw[step=1cm,blue,thin] (0,0) grid (10,3);
3
4 \node[ellipse,draw = red] (e) at (2,1){ellipse};
5 \node[diamond,draw = red] (d) at (4,1){d};
6 \node[regular polygon,regular polygon sides=5,draw=red](p) at (6,1){p
7   };
8 \node[star,star points=5,draw = red] (s) at (8,1){s};
9 \end{tikzpicture}
```



Shapes formatieren

```
1 \begin{tikzpicture}
2 \draw[step=1cm,blue,thin] (0,0) grid (10,3);
3
4 \node[rectangle,draw = red,very thick,rounded corners=5pt,fill=green]
   (r) at (2.5,1){Runde Ecken};
5
6 \node[rectangle,draw = red,very thick,rounded corners=5pt,minimum
   width=5cm, minimum height=15mm, fill=yellow] (r) at (7,2){Runde
   Ecken};
7 \end{tikzpicture}
```



Grundlagen II

Anchors

Anwendungen