Latex Template

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1 Introduction

Hello world!

Figure 1: Yelan

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a diference between this text and some nonsense like Huardest gefburn"? Kjift not at all! A blindtext like this gives you information about the selected font, how the letters a rewritten and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

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Figure 2: Nahida

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2 Code example

Python example:

```python
import numpy as np

def incmatrix(genl1,genl2):
      m = len(genl1)
      n = len(genl2)
      M = None #to become the incidence matrix
      VT = np.zeros((n*m,1), int)  #dummy variable

      #compute the bitwise xor matrix
      M1 = bitxormatrix(genl1)
      M2 = np.triu(bitxormatrix(genl2),1)

      for i in range(m-1):
         for j in range(i+1, m):
            [r,c] = np.where(M2 == M1[i,j])
            for k in range(len(r)):
                  VT[(i)*n + r[k]] = 1;
                  VT[(i)*n + c[k]] = 1;
                  VT[(j)*n + r[k]] = 1;
                  VT[(j)*n + c[k]] = 1;

                  if M is None:
                     M = np.copy(VT)
                  else:
                     M = np.concatenate((M, VT), 1)

                  VT = np.zeros((n*m,1), int)

      return M
```

Listing 1: Python example

C++ example

```cpp
#include <iostream>

int main()
{
   std::cout << "Hello world!";
   return 0;
}
```

Listing 2: C++ example

Test: `x + y = z`

3 TiKz tutorial

3.1 Getting start

Import `tikz` pacakage by `ikz\usepackaget` , and use it in tex:

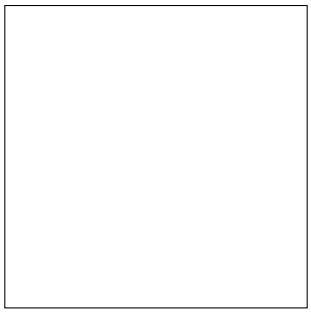
```
\begin{tikzpicture}
  <code goes here>
\end{tikzpicture}
```

3.1.1 Basic shapes

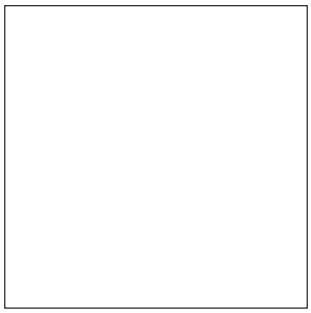
Note: finish the satement by closing it with a semicolon.

A strait line:

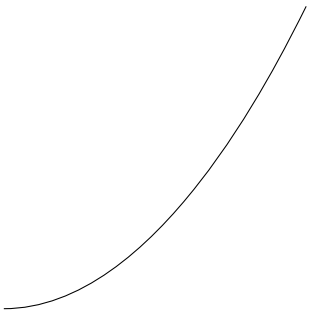
Make a square by `\draw (0,0) -- (4,0) -- (4,4) -- (0,4) -- (0,4) -- cycle` :



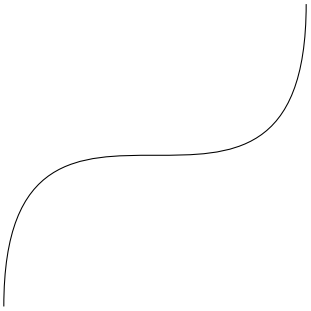
Or simplified `\draw (0,0) rectangle (4,4);` :



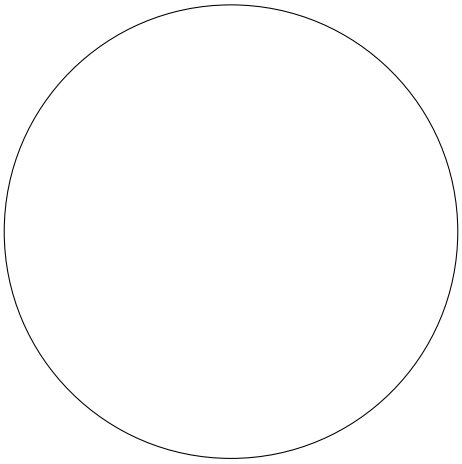
A parabola `\draw (0,0) parabola (4,4);` :



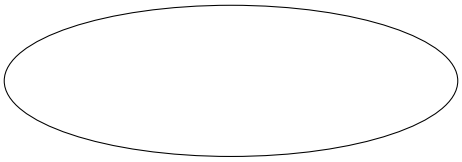
Add a curved line by using *control points*, `\draw (0,0) .. controls (0,4) and (4,0) .. (4,4);` :



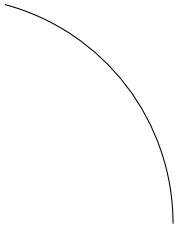
A circle by `\draw (2,2) circle (3cm);` :



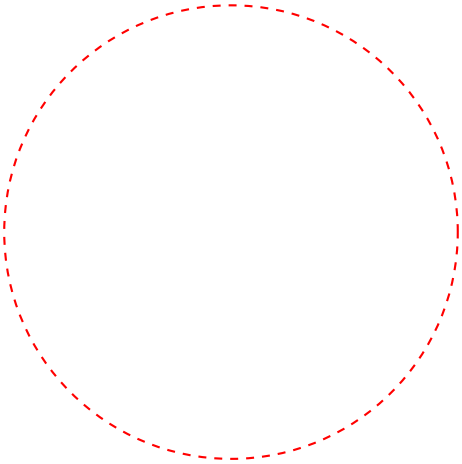
An ellipse by `\draw (2,2) ellipse (3cm and 1cm);` :



An arc by `\draw (3,0) arc (0:75:3cm);` :

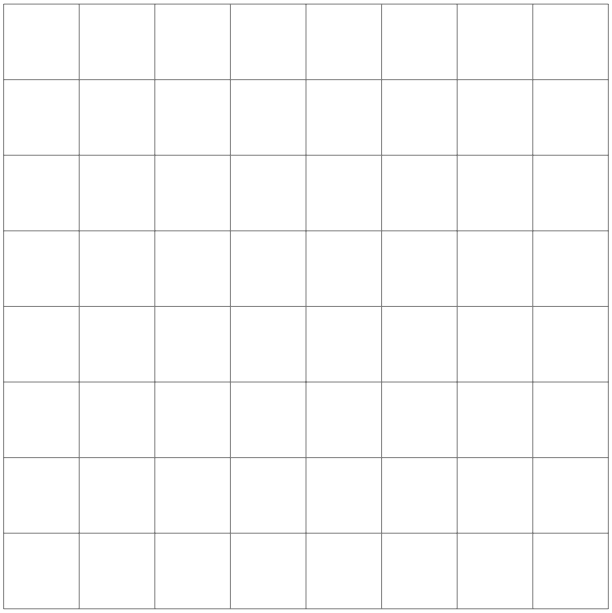


A costomised circle by `\draw[red,thick,dashed] (2,2) circle (3cm);` :

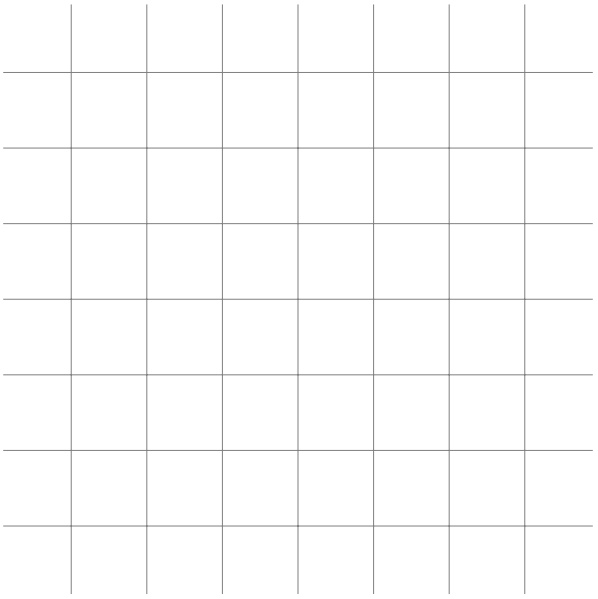


3.1.2 Grids

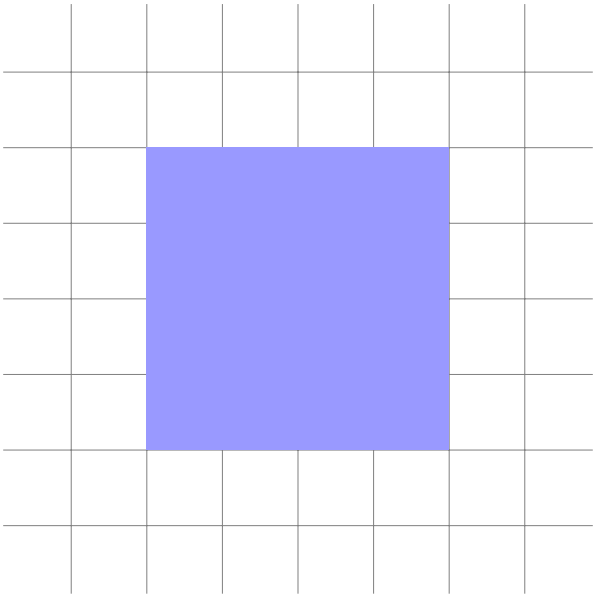
A grid by `\draw[step=1cm,gray,very thin] (-2,-2) grid (6,6);` :



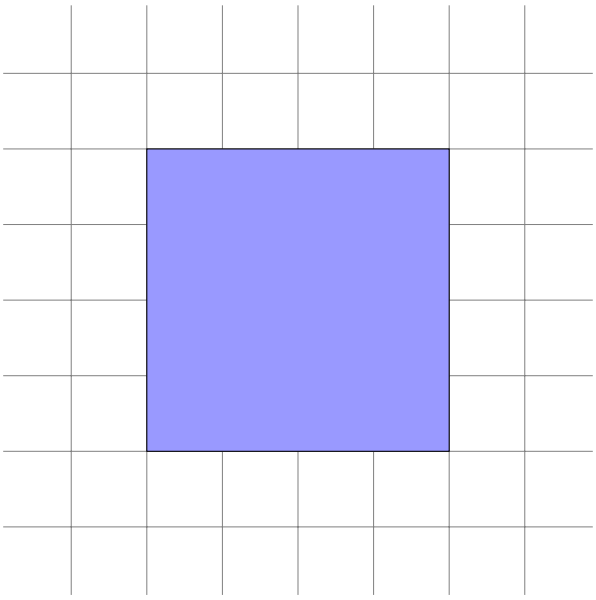
A removed outer lines grid `\draw[step=1cm,gray,very thin] (-1.9,-1.9) grid (5.9,5.9);` :



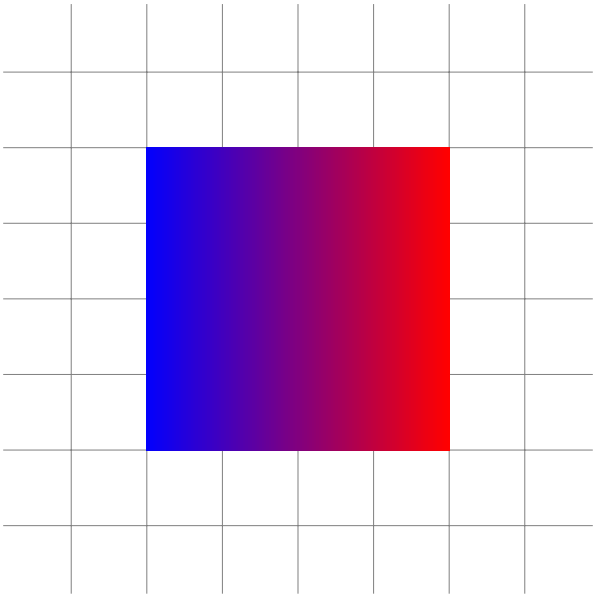
A color filled rectangle by `\fill[blue!40!white] (0,0) rectangle (4,4);`



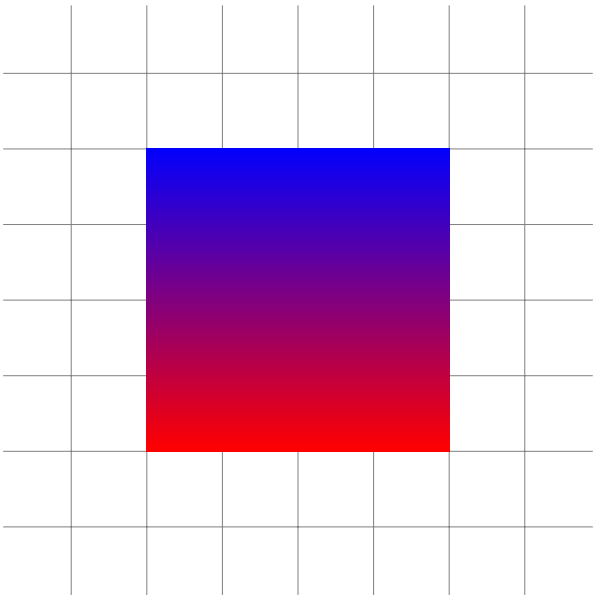
and a border added `\filldraw[fill=blue!40!white, draw=black] (0,0) rectangle (4,4);` :



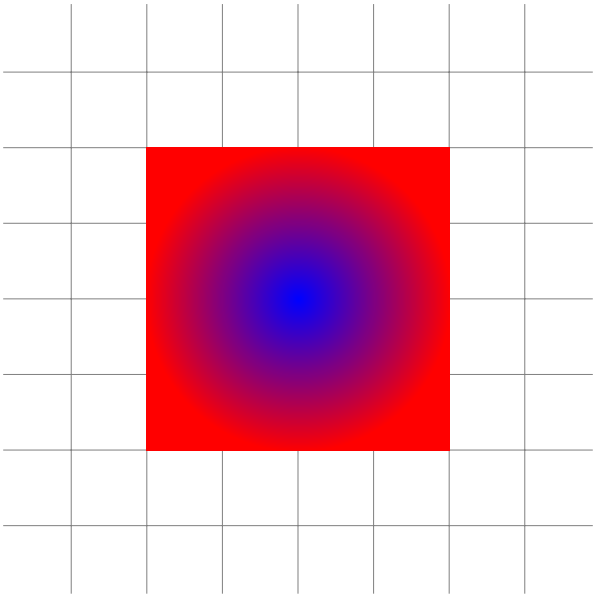
and shading `\shade[left color=blue,right color=red] (0,0) rectangle (4,4);`



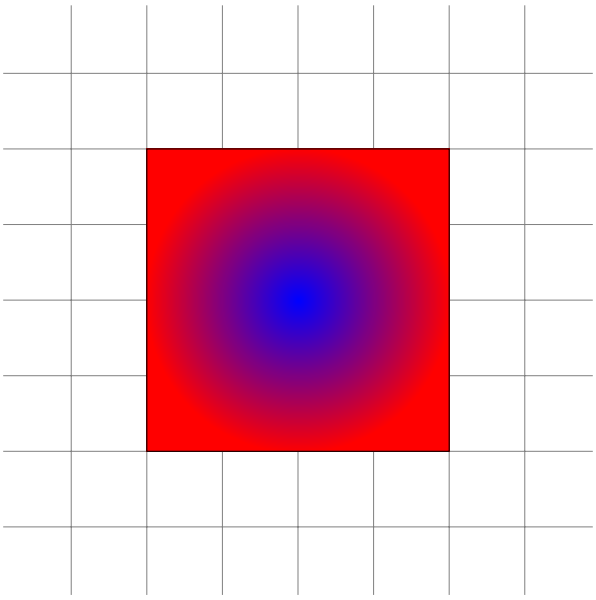
and shading in the vertical direction `\shade[top color=blue,bottom color =red] (0,0) rectangle (4,4);`



radiation `\shade[inner color=blue,outer color=red] (0,0) rectangle (4,4);`

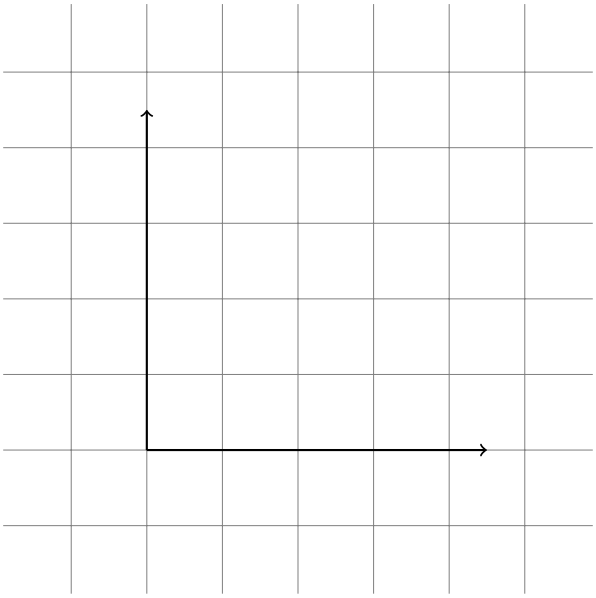


add border `\shadedraw[inner color=blue,outer color=red, draw=black ] (0,0) rectangle (4,4);`



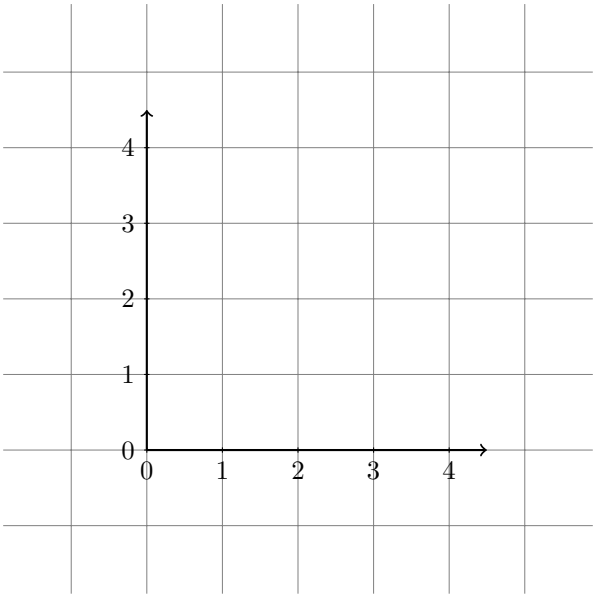
3.1.3 Axes

Two vectors `\draw[thick,->] (0,0) -- (4.5,0);` :



add ticks and numbers:

```
\begin{tikzpicture}
  \draw[step=1cm,gray,very thin] (-1.9,-1.9) grid (5.9,5.9);
  \draw[thick,->] (0,0) -- (4.5,0);
  \draw[thick,->] (0,0) -- (0,4.5);
  \foreach \x in {0,1,2,3,4}
  \draw (\x cm,1pt) -- (\x cm,-1pt) node[anchor=north] {$\x$};
  \foreach \y in {0,1,2,3,4}
  \draw (1pt,\y cm) -- (-1pt,\y cm) node[anchor=east] {$\y$};
\end{tikzpicture}
```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4