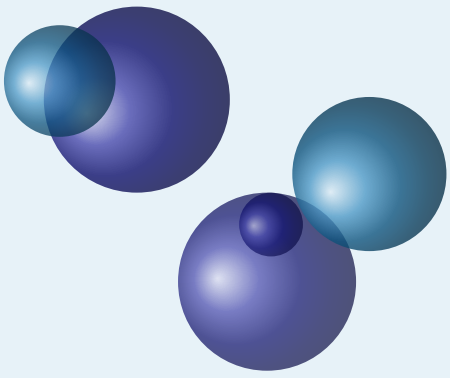
tkzexample.sty 1.45c

AlterMundus

tkzexample

Presentation tool



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tkzexample.sty

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`tkzexample.sty` is a package to present examples and their sources. It is essential if you want to compile the documentation of my packages like `tkz-euclide`. I needed for my first packages to work in UTF8 and to present my sources in French. These sources had accents so I had to adapt the code used by **T.Tantau** to present the examples of `pgfmanual`. There are still some imperfections so I invite you to improve this code if necessary

Contents

1 First example : no options

tkzexample.sty is based on the code of **codeexample** of **T.Tantau** . I wanted to be able to use the accents of the French language in the sources.
How to use this environment? Without any options, the interpretation of a code and the source of this code are placed one above the other.
To do this, simply place the source code in a **tkzexample**. The colors of the different boxes show their sizes.
The colors are obtained as follows:
```
\colorlet{graphicbackground}{blue!10!white}
\colorlet{codebackground}{blue!20!lightgray!20}
```

1.0.1 Minipage and accents without options

This is a test for "minipage" and accents èçéà&§.The brackets [] even without options are mandatory.

```
\begin{minipage}{8cm}
\subsubsection{Minipage and accents  without options}
This is a test for "minipage" and   accents èçéà\&§.
The brackets |[]| even without options are mandatory.
\end{minipage}
```

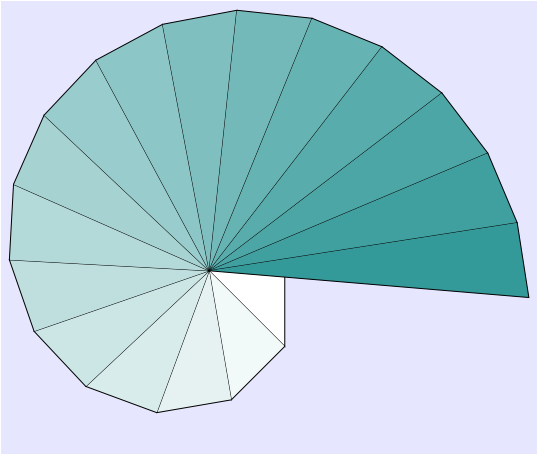
```
\begin{tkzexample}[]
\begin{minipage}{8cm}
\subsubsection{Minipage and accents  without options}
This is a test for "minipage" and   accents èçéà\&§.
 The brackets [] even without options are mandatory.
\end{minipage}
\end{tkzexample}
```

You may notice already a small default, [] square brackets are mandatory even without option.

2 Inversion of the boxes: option overhang

overhang allows to swap the source and the result.
```
\begin{tkzexample}[overhang]
\begin{tikzpicture}
  ...
\end{tkzexample}
```

```
\begin{tikzpicture}
  \tkzDefPoint(0,0){O}
  \tkzDefPoint(1,0){a0}
   \tkzDrawSegment(O,a0)
  \foreach \i [count=\j] in {0,...,16}{%
    \tkzDefPointWith[orthogonal normed](a\i,O)
    \tkzGetPoint{a\j}
       \pgfmathsetmacro{\c}{5*\i}
    \tkzDrawPolySeg[fill=teal!\c](a\i,a\j,O)}
 \end{tikzpicture}
```

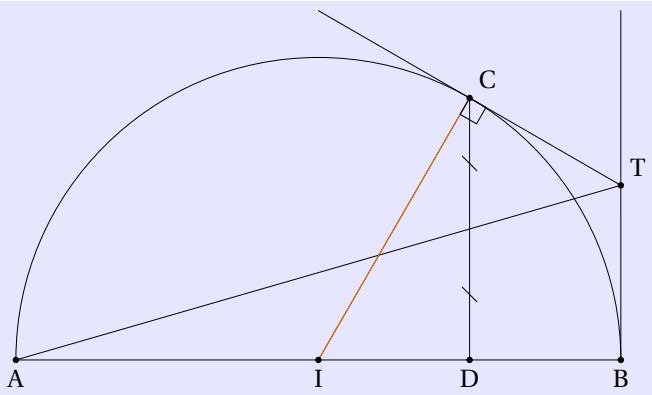


3 Boxes with the same width: option vbox

In order to present the code under the interpretation, I set the vbox option so that the interpretation and the source are in a box of the same maximum width.

```
\begin{tkzexample}[vbox]
    ...
\end{tkzexample}
```

which gives

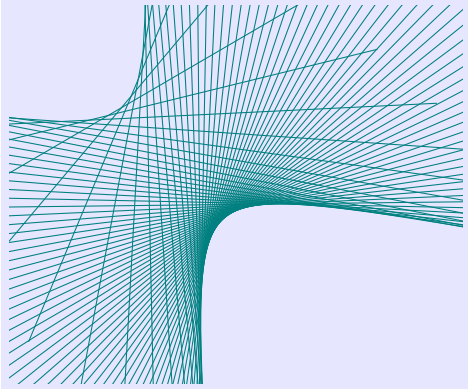



```
\begin{tikzpicture}[scale=1]
  \tikzset{new/.style={color=orange,line width=.2pt}}
  \tkzDefPoint(0,0){A}\tkzDefPoint(6,0){D}
  \tkzDefPoint(8,0){B}\tkzDefPoint(4,0){I}
  \tkzDefLine[orthogonal=through D](A,D)
  \tkzInterLC[R](D,tkzPointResult)(I,4) \tkzGetSecondPoint{C}
  \tkzDefLine[orthogonal=through C](I,C)    \tkzGetPoint{c}
  \tkzDefLine[orthogonal=through B](A,B)    \tkzGetPoint{b}
  \tkzInterLL(C,c)(B,b) \tkzGetPoint{T}
  \tkzInterLL(A,T)(C,D) \tkzGetPoint{P}
  \tkzDrawArc(I,B)(A)
  \tkzDrawSegments(A,B A,T C,D I,C) \tkzDrawSegment[new](I,C)
  \tkzDrawLine[add = 1 and 0](C,T)   \tkzDrawLine[add = 0 and 1](B,T)
  \tkzMarkRightAngle(I,C,T)
  \tkzDrawPoints(A,B,I,D,C,T)
  \tkzLabelPoints(A,B,I,D)  \tkzLabelPoints[above right](C,T)
  \tkzMarkSegment[pos=.25,mark=s|](C,D) \tkzMarkSegment[pos=.75,mark=s|](C,D)
\end{tikzpicture}
```

4 Side by side: option latex

You must indicate the width of the box assigned to the interpretation, this is done with the option **latex**:

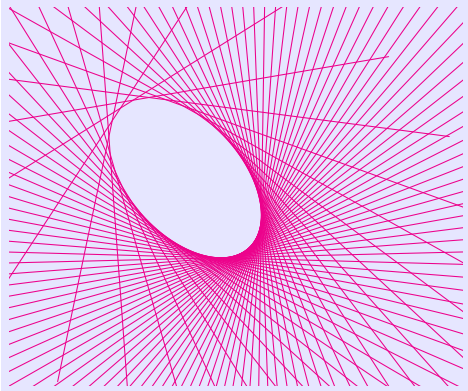
4.0.1 latex=7cm



```
\begin{tikzpicture}[scale=.5]
\tkzInit[xmin=-6,ymin=-4,xmax=6,ymax=6]
\tkzClip
\tkzSetUpLine[thin,color=teal]
\tkzDefPoint(0,0){O}
\tkzDefPoint(132:5){A}
\tkzDefPoint(4,0){B}
\foreach \ang in {5,10,...,360}{%
 \tkzDefPoint(\ang:4){M}
 \tkzDefLine[mediator](A,M)
 \tkzGetPoints{x}{y}
 \tkzDrawLine[add= 3 and 3](x,y)}
\end{tikzpicture}
```

```
\begin{tkzexample}[latex=7cm]
...
\end{tkzexample}
```

4.0.2 latex=8cm



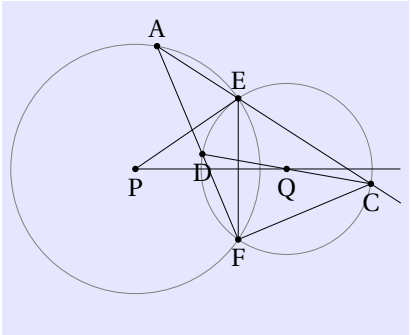
```
\begin{tikzpicture}[scale=.5]
\tkzInit[xmin=-6,ymin=-4,xmax=6,ymax=6]
\tkzClip
\tkzSetUpLine[thin,color=magenta]
\tkzDefPoint(0,0){O}
\tkzDefPoint(132:4){A}
\tkzDefPoint(5,0){B}
\foreach \ang in {5,10,...,360}{%
 \tkzDefPoint(\ang:5){M}
 \tkzDefLine[mediator](A,M)
 \tkzGetPoints{x}{y}
 \tkzDrawLine[add= 3 and 3](x,y)}
\end{tikzpicture}
```

```
\begin{tkzexample}[latex=8cm]
...
\end{tkzexample}
```

5 Side by side: option width

If the option **latex= x cm** allows to reserve a box of width x cm for the code, the option **width= x cm** allows to reserve a box of width x cm for the result.
We leave a box of 8cm for the result or drawing and the rest of the line will contain a minipage of 8cm. As you can see a new section has been created and the code is contained in a 8cm box

```
\begin{tikzpicture}[scale=.4]
\tkzDefPoints{0/0/P,5/0/Q,3/2/I}
\tkzDefCircle[orthogonal from=P](Q,I)
\tkzGetFirstPoint{E}
\tkzDrawCircles(P,E Q,E)
\tkzInterCC[common=E](P,E)(Q,E) \tkzGetFirstPoint{F}
\tkzDefPointOnCircle[through =  center P angle 80 point E]
 \tkzGetPoint{A}
\tkzInterLC[common=E](A,E)(Q,E)  \tkzGetFirstPoint{C}
\tkzInterLL(A,F)(C,Q)  \tkzGetPoint{D}
\tkzDrawLines[add=0 and .75](P,Q)
\tkzDrawLines[add=0 and 2](A,E)
\tkzDrawSegments(P,E E,F F,C A,F C,D)
\tkzDrawPoints(P,Q,E,F,A,C,D)
\tkzLabelPoints(P,Q,F,C,D)
\tkzLabelPoints[above](E,A)
\end{tikzpicture}
```



The options used to get this result are :

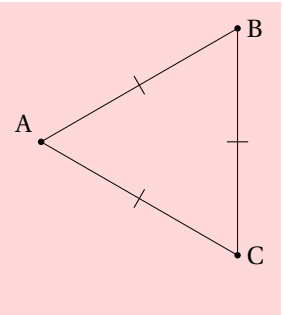
```
\begin{tkzexample}[overhang,width=6cm,code=red!30]
...
\end{tkzexample}
```

6 Option code and option graphic

This option is used to color the background of the code.

```
\begin{tkzexample}[overhang,width=9cm,code=gray!20,graphic=red!15]
...
\end{tkzexample}
```

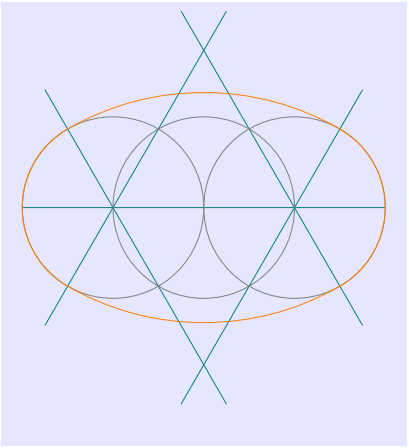
```
\begin{tikzpicture}[scale=1]
 \tkzDefPoint(2,3){A}
 \tkzDefShiftPoint[A](30:3){B}
 \tkzDefShiftPoint[A](-30:3){C}
 \tkzDrawPolygon(A,B,C)
 \tkzDrawPoints(A,B,C)
 \tkzLabelPoints[right](B,C)
 \tkzLabelPoints[above left](A)
 \tkzMarkSegments[mark=|](A,B A,C B,C)
\end{tikzpicture}
```



7 Option num

You can number the lines of code. **numcolor** and **numbkgcolor** are used to define the style of the numbering.

7.1 Example 1

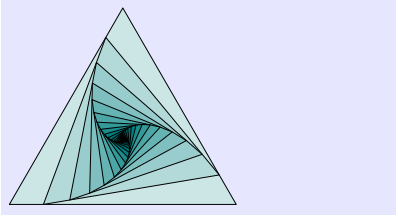


```
\begin{tikzpicture}[scale=0.3]
  \tkzDefPoint(-4,0){I}
  \tkzDefPoint(4,0){J}
  \tkzDefPoint(0,0){O}
  \tkzInterCC(J,O)(O,J) \tkzGetPoints{L}{H}
  \tkzInterCC(I,O)(O,I) \tkzGetPoints{K}{G}
  \tkzInterLL(I,K)(J,H) \tkzGetPoint{M}
  \tkzInterLL(I,G)(J,L) \tkzGetPoint{N}
  \tkzDefPointsBy[symmetry=center J](L,H){D,E}
  \tkzDefPointsBy[symmetry=center I](G,K){C,F}
  \begin{scope}[line style/.style = {very thin,teal}]
    \tkzDrawLines[add=1.5 and 1.5](I,K I,G J,H J,L)
    \tkzDrawLines[add=.5 and .5](I,J)
    \tkzDrawCircles(O,I I,O J,O)
    \tkzDrawArc[delta=0,orange](N,D)(C)
    \tkzDrawArc[delta=0,orange](M,F)(E)
    \tkzDrawArc[delta=0,orange](J,E)(D)
    \tkzDrawArc[delta=0,orange](I,C)(F)
  \end{scope}
\end{tikzpicture}
```

this is obtained with:

```
\begin{tkzexample}[width=6cm,num,numcolor=red,numbkgcolor=white,code style=\ttfamily]
...
\end{tkzexample}
```

7.2 Example 2



```
  \begin{tikzpicture}[scale=.25]
  \tkzDefPoints{0/0/A,12/0/B,6/12*sind(60)/C}
  \foreach \density in {20,30,...,240}{%
    \tkzDrawPolygon[fill=teal!\density](A,B,C)
    \pgfnodealias{X}{A}
    \tkzDefPointWith[linear,K=.15](A,B) \tkzGetPoint{A}
    \tkzDefPointWith[linear,K=.15](B,C) \tkzGetPoint{B}
    \tkzDefPointWith[linear,K=.15](C,X) \tkzGetPoint{C}}
  \end{tikzpicture}
```

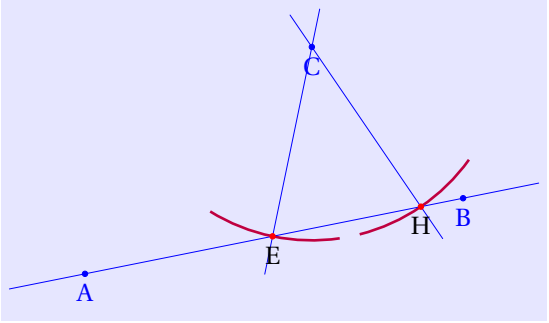
```
\begin{tkzexample}[latex=5cm,code=red!20,num,small]
...
\end{tkzexample}
```

The global num option allows to have a global numbering of the lines with the next code:

```
\begin{tkzexample}[latex=7cm,global num,small,hsep=1cm]

...

\end{tkzexample}
```

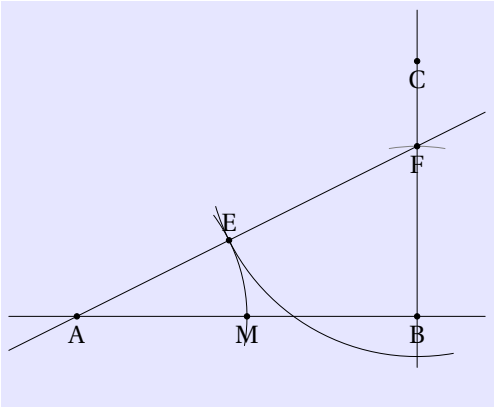



```
\begin{tikzpicture}
  \tkzSetUpCompass[color=purple,line width=1pt]
  \tkzDefPoints{0/1/A,5/2/B,3/4/C}
  \tkzDefEquiPoints[from=C,dist=1,show,
      /tkzcompass/delta=20](A,B)
   \tkzGetPoints{E}{H}
   \tkzDrawLines[color=blue](C,E C,H A,B)
   \tkzDrawPoints[color=blue](A,B,C)
   \tkzDrawPoints[color=red](E,H)
   \tkzLabelPoints(E,H)
   \tkzLabelPoints[color=blue](A,B,C)
\end{tikzpicture}
```

8 Size option for code fonts

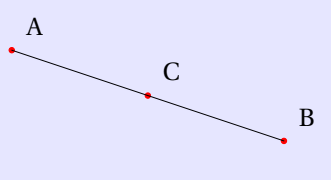
The different size options for fonts are :

1. very small



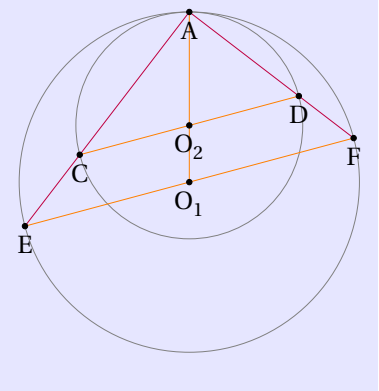

```
\begin{tikzpicture}[scale=.75]
  \tkzDefPoints{0/0/A,6/0/B}
  \tkzDefMidPoint(A,B)
    \tkzGetPoint{I}
  \tkzDefPointWith[orthogonal,K=-.75](B,A)
  \tkzGetPoint{C}
  \tkzInterLC(B,C)(B,I)
     \tkzGetPoints{F}{D}
  \tkzDuplicateSegment(B,F)(A,F)
  \tkzGetPoint{E}
  \tkzDrawArc[delta=10](F,E)(B)
  \tkzInterLC(A,B)(A,E)
    \tkzGetPoints{N}{M}
  \tkzDrawArc[delta=10](A,M)(E)
  \tkzDrawLines(A,B B,C A,F)
  \tkzCompass(B,F)
  \tkzDrawPoints(A,B,C,F,M,E)
  \tkzLabelPoints(A,B,C,F,M)
  \tkzLabelPoints[above](E)
\end{tikzpicture}
```

2. small




```
\begin{tikzpicture}[scale=1.2]
  \tkzDefPoints{1/3/A,4/2/B}
  \tkzDefPointWith[linear,K=0.5](A,B)
  \tkzGetPoint{C}
  \tkzDrawPoints[color=red](A,B,C)
  \tkzDrawSegment(A,B)
  \tkzLabelPoints[above right=3pt](A,B,C)
\end{tikzpicture}
```

3. normal




```
\begin{tikzpicture}[scale=.75]
  \tikzset{new/.style={color=orange,
  line width=.2pt}}
  \tkzDefPoints{0/0/O_1,0/1/O_2,0/3/A}
  \tkzDefPoint(15:3){F}
  \tkzInterLC(F,O_1)(O_1,A)
  \tkzGetSecondPoint{E}
  \tkzDefLine[parallel=through O_2](E,F)
  \tkzGetPoint{x}
  \tkzInterLC(x,O_2)(O_2,A) \tkzGetPoints{D}{C}
  \tkzDrawCircles(O_1,A O_2,A)
  \tkzDrawSegments[new](O_1,A E,F C,D)
  \tkzDrawSegments[purple](A,E A,F)
  \tkzDrawPoints(A,O_1,O_2,E,F,C,D)
  \tkzLabelPoints(A,O_1,O_2,E,F,C,D)
\end{tikzpicture}
```

9 Option code only

```
\begin{tkzexample}[small,code only]
  \begin{minipage}{9cm}
  \thispagestyle{empty}
  \noindent
  \begin{tikzpicture}
     \draw (0,0)  node[circle,
                       shade,
                       ball color=Peach,minimum size=2cm]{};
     \draw[snake      = expanding waves,
           color      = Peach,
           line width = 3pt](1.2,0)--(4,0);
    \end{tikzpicture}
  \end{minipage}
\end{tkzexample}
```

The result

```
  \begin{minipage}{9cm}
  \begin{tikzpicture}
     \draw (0,0)  node[circle,
                       shade,
                       ball color=Peach,minimum size=2cm]{};
     \draw[snake      = expanding waves,
           color      = Peach,
           line width = 3pt](1.2,0)--(4,0);
    \end{tikzpicture}
\end{minipage}
```