The **intervalarrows** Package*

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14 July 2015

Abstract

This package defines two new arrow tips, open for an "open" circle and closed for a "closed" circle. Unlike the original versions, '∼' and 'o', these are centered at the end of the line.
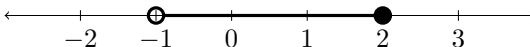
The code is taken from the post `http://tex.stackexchange.com/questions/11871` by Jake.

Contents

1 Example

```
\begin{center}
\begin{tikzpicture}
\draw[very thin,<->] (-3,0) -- (4,0);
\foreach \x in {-2,...,3}{
\draw[xshift=\x cm,very thin] (0,2pt) -- (0,-2pt)node[below]{$\x$};}
\draw[very thick,open-closed] (-1,0) -- (2,0);
\end{tikzpicture}
\end{center}
```

produces

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*This document describes the version number v0.1, last revised 2015/07/14.

2 Implementation

```
1 \pgfarrowsdeclare{closed}{closed}
2 {
3   \pgfarrowsleftextend{+-.5\pgflinewidth}
4   \pgfutil@tempdima=0.4pt%
5   \advance\pgfutil@tempdima by.2\pgflinewidth%
6   \pgfarrowsrightextend{4.5\pgfutil@tempdima}
7 }
8 {
9   \pgfutil@tempdima=0.4pt%
10   \advance\pgfutil@tempdima by.2\pgflinewidth%
11   \pgfsetdash{}{+0pt}
12   \pgfpathcircle{\pgfqpoint{4.5\pgfutil@tempdima}{0bp}}{4.5\pgfutil@tempdima}
13   \pgfusepathqfillstroke
14 }
15
16 \pgfarrowsdeclare{open}{open}
17 {
18   \pgfarrowsleftextend{+-.5\pgflinewidth}
19   \pgfutil@tempdima=0.4pt%
20   \advance\pgfutil@tempdima by.2\pgflinewidth%
21   \pgfarrowsrightextend{4.5\pgfutil@tempdima}
22 }
23 {
24   \pgfutil@tempdima=0.4pt%
25   \advance\pgfutil@tempdima by.2\pgflinewidth%
26   \pgfsetdash{}{+0pt}
27   \pgfpathcircle{\pgfqpoint{4.5\pgfutil@tempdima}{0bp}}{4.5\pgfutil@tempdima}
28   \pgfusepathqstroke
29 }
```