

Arrow Shapes

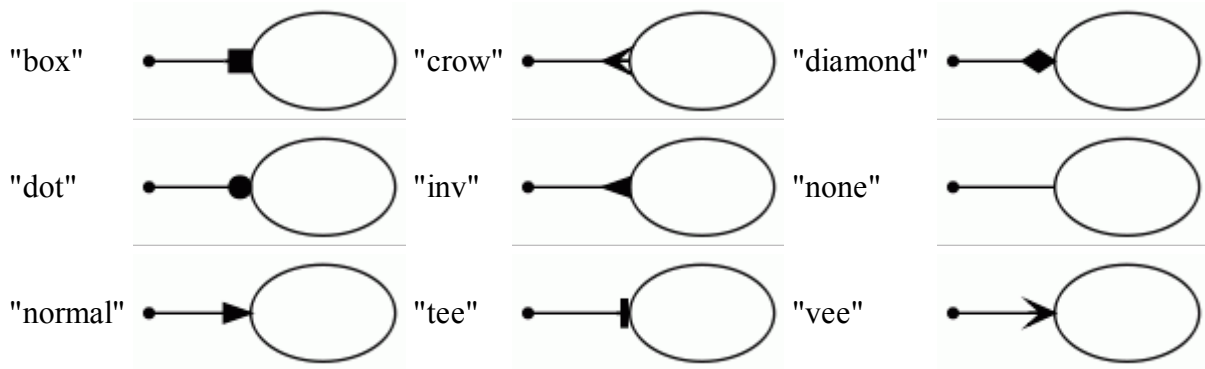
Arrow shapes can be specified and named using the following simple grammar. Terminals are shown in bold font and nonterminals in italics. Literal characters are given in single quotes. Square brackets [and] enclose optional items. Vertical bars | separate alternatives.

```

arrowname : aname [ aname [ aname [ aname ] ] ]
  aname : [ modifiers ] shape
  modifiers : [ 'o' ] [ side ]
  side : 'l'
        | 'r'
  shape : box
        | crow
        | diamond
        | dot
        | inv
        | none
        | normal
        | tee
        | vee

```

The primitive shapes are:



As for the modifiers:

'l'

Clip the shape, leaving only the part to the left of the edge.

'r'

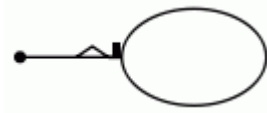
Clip the shape, leaving only the part to the right of the edge.

'o'

Use an open (non-filled) version of the shape.

Left and right are defined as those directions determined by looking from the edge towards the point where the arrow "touches" the node.

As an example, the arrow shape `lteeolddiamond` is parsed as 'l' 'tee' 'o' 'l' 'diamond' and corresponds to the shape



Note that the first arrow shape specified occurs closest to the node. Subsequent arrow shapes, if specified, occur further from the node.

Not all syntactically legal combinations of modifiers are meaningful or semantically valid. For example, none of the modifiers make any sense with `none`. The following table indicates which modifiers are allowed with which shapes.

Modifier	box	crow	diamond	dot	inv	none	normal	tee	vee
'l'/'r'	X	X	X		X		X	X	X
'o'	X		X	X	X		X		

This yields 36 different arrow shapes. The optional second, third, fourth shapes can independently be any of the 36, but since `nonenone` is redundant, there are $35 \times 4 + 35 \times 3 + 35 \times 2 + 35 + 1 = 1,544,761$ different combinations.

The following display contains the 36 combinations possible with a single arrow shape. The node attached to the arrow is not drawn but would appear on the right side of the edge.

box

lbox

rbox

obox

olbox

orbox

crow

lcrow

rcrow

diamond

ldiamond

rdiamond

odiamond

oldiamond

ordiamond

dot

odot

inv

linv

rinv

oinv

olinv

orinv

none

normal

lnormal

rnormal

onormal

olnormal

ornormal

tee

ltee

rtee

vee

lvee

rvee