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TurtleGraphics

Interface Pen

All Known Implementing Classes:
AbstractPen, BackwardPen, RainbowPen, StandardPen, WigglePen, WiggleRainbowPen

```
public interface Pen
```

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The behavior of all pens.

Method Summary

`void`	`down()` Action: The pen lowers itself to the drawing surface.
`void`	`drawString(java.lang.String text)` Action: Draws the string at the pen's position.
`void`	`home()` The pen jumps to the center of the graphics window without drawing and points north.
`void`	`move(double distance)` Action: The pen moves the specified distance in the current direction.
`void`	`move(double x, double y)` Action: Moves the pen to the position (x, y).
`void`	`setColor(java.awt.Color color)` Action: Sets the pen's color to the specified color.
`void`	`setDirection(double direction)` Action: The pen points in the indicated direction.
`void`	`setWidth(int width)` Action: Sets the pen's width to the specified width (the default width is 2 pixels).
`java.lang.String`	`toString()` Action: Returns information about the pen's state.
`void`	`turn(double degrees)` Action: The pen adds the indicated degrees to its current direction.
`void`	`up()` Action: The pen raises itself from the drawing surface.

Method Detail

down

```
void down()
```

Action: The pen lowers itself to the drawing surface.

---

drawString

```
void drawString(java.lang.String text)
```

Action: Draws the string at the pen's position.

---

home

```
void home()
```

The pen jumps to the center of the graphics window without drawing and points north.

---

move

```
void move(double distance)
```

Action: The pen moves the specified distance in the current direction. The distance can be an integer or floating-point number and is measured in pixels (picture elements). The size of a pixel depends on the monitorÕs resolution. For instance, when we say that a monitor's resolution is 800 by 600, we mean that the monitor is 800 pixels wide and 600 pixels high.

---

move

```
void move(double x,
          double y)
```

Action: Moves the pen to the position (x, y).

---

setColor

```
void setColor(java.awt.Color color)
```

Action: Sets the pen's color to the specified color.

---

setDirection

```
void setDirection(double direction)
```

Action: The pen points in the indicated direction. Due east corresponds to 0 degrees, north to 90 degrees, west to 180 degrees, and south to 270 degrees. Because there are 360 degrees in a circle, setting the direction to 400 would be equivalent to 400 - 360 or 40 and setting it to -30 would be equivalent to 360 - 30 or 330. Example: pen.setDirection(90); Make the pen point due north.

---

setWidth

```
void setWidth(int width)
```

Action: Sets the pen's width to the specified width (the default width is 2 pixels).

---

toString

```
java.lang.String toString()
```

Action: Returns information about the pen's state.

Overrides:
`toString` in class `java.lang.Object`

---

turn

```
void turn(double degrees)
```

Action: The pen adds the indicated degrees to its current direction. Positive degrees correspond to turning counterclockwise. The degrees can be an integer or floating-point number. Example: pen.turn(-45); Rotate the pen 45 degrees clockwise.

---

up

```
void up()
```

Action: The pen raises itself from the drawing surface.

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