atan2()

Calculates the angle formed by a point, the origin, and the positive x-axis.

`atan2()` is most often used for orienting geometry to the mouse's position, as in `atan2(mouseY, mouseX)`. The first parameter is the point's y-coordinate and the second parameter is its x-coordinate.

By default, `atan2()` returns values in the range -π (about -3.14) to π (3.14). If the angleMode() is `DEGREES`, then values are returned in the range -180 to 180.

Examples

```
function setup() {
  createCanvas(100, 100);

  describe('A rectangle at the top-left of the canvas rotates
with mouse movements.');
}

function draw() {
  background(200);

  // Calculate the angle between the mouse
  // and the origin.
  let a = atan2(mouseY, mouseX);

  // Rotate.
  rotate(a);

  // Draw the shape.
  rect(0, 0, 60, 10);
}
```

```
function setup() {
  createCanvas(100, 100);

  describe('A rectangle at the center of the canvas rotates
with mouse movements.');
}

function draw() {
  background(200);

  // Translate the origin to the center.
  translate(50, 50);

  // Get the mouse's coordinates relative to the origin.
  let x = mouseX - 50;
  let y = mouseY - 50;

  // Calculate the angle between the mouse and the origin.
  let a = atan2(y, x);

  // Rotate.
  rotate(a);

  // Draw the shape.
  rect(-30, -5, 60, 10);
}
```

Syntax

```
atan2(y, x)
```

Parameters

y	Number: y-coordinate of the point.
x	Number: x-coordinate of the point.

Returns

Number: arc tangent of the given point.

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Related References

acos
Calculates the arc cosine of a number.

angleMode
Changes the unit system used to measure angles.

asin
Calculates the arc sine of a number.

atan
Calculates the arc tangent of a number.