

Turtle Graphics Quick Reference

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1 Turtle Graphics

The `SDL_bgi` sources archive includes a `test/` directory that contains test programs and also a turtle graphics implementation (files `turtle.h` and `turtle.c`).

Turtle graphics is based on polar coordinates: lines are drawn specifying the distance in pixels and an angle in degrees, called *heading* (0-359). Heading is the same as the bearing of a compass: it starts from 0 (“North”) and increases clockwise. For more information: https://en.wikipedia.org/wiki/Turtle_graphics

Some functions have aliases with the same name as their Python counterparts; <https://docs.python.org/3/library/turtle.html>

```
void back (int px)
```

Moves the turtle backwards by *px* pixels.

Aliases: `backward()`, `bk()`

```
void forwd (int px)
```

Moves the turtle backwards by *px* pixels.

Aliases: `forward()`, `fd()`

```
void turnleft (int deg)
```

Turns the turtle left by *deg* degrees.

Aliases: `left()`, `lt()`

```
void turnright (int deg)
```

Turns the turtle right by *deg* degrees.

Aliases: `right()`, `rt()`

```
void setposition (int x int y)
```

Moves the turtle to new coordinates *x*, *y*.

Aliases: `go_to()`, `setpos()`

```
void setx (int x)
```

Sets the turtle's *x* coordinate.

```
void sety (int y)
```

Sets the turtle's *y* coordinate.

```
void setheading (int deg)
```

Sets the turtle heading to *deg* degrees.

Alias: `seth()`

```
void home (void)
```

Moves the turtle to the screen centre and sets the heading to 0.

```
int * position (void)
```

Returns a pointer to a 2-element integer array containing the turtle coordinates.

```
int xcor (void)
```

Returns the turtle's *x* coordinate.

```
int ycor (void)
```

Returns the turtle's *y* coordinate.

```
int heading (void)
```

Returns the turtle's heading in degrees.

```
void savestate (void)
```

Saves the turtle state, i.e. its coordinates and heading.

TODO: make this a stack?

```
void restorestate (void)
```

Restore previously saved state. If no state has been saved, this function is equivalent to `home()`.

```
void pendown (void)
```

Activates drawing (puts the pen down).

Aliases: `pd()`, `down()`

```
void penup (void)
```

Suspends drawing (lifts the pen down).

Aliases: `pu()`, `up()`

```
int isdown (void)
```

Returns 1 if the pen is down.

```
void hideturtle (void)
```

Hides the turtle.

```
void showturtle (void)
```

Draws the turtle.

```
int isvisible (void)
```

Returns 1 if the turtle is visible.

```
int turtleshape (int shape)
```

Sets the turtle shape; available shapes are `T_CIRCLE` or `T_TRIANGLE`.

```
int turtlesize (int px)
```

Sets the turtle size (radius or side) to *px* pixels.

```
void wrap (void)
```

Wraps around the screen.

```
void nowrap (void)
```

Does not wrap around the screen.

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