All Turtle Commands

Moving the Turtle

C++ Commands

- Step (drawn): `turtle::forward();`
- Step (not drawn): `turtle::jump();`
- Rotation left: `turtle::left(my_angle);`
- Rotation right: `turtle::right(my_angle);`
- Save position: `turtle::save();`
- Load position: `turtle::restore();`
- Change color: `turtle::colorcycle();`

Requires:

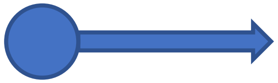
a) `#include "turtle.cpp"`

b) `turtle.cpp` and `bitmap.cpp` have to be in the same folder as your program.

turtle.cpp and bitmap.cpp can be downloaded from the lecture website.

Moving the Turtle

```
turtle::forward();
turtle::save();
turtle::left(45);
turtle::jump();
turtle::save();
turtle::right(45);
turtle::forward(2);
turtle::restore();
turtle::forward();
turtle::restore();
turtle::right(45);
turtle::forward();
turtle::forward();
```



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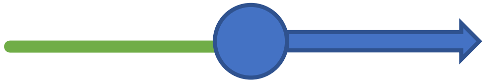

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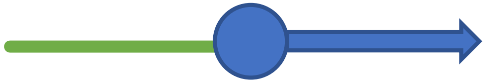

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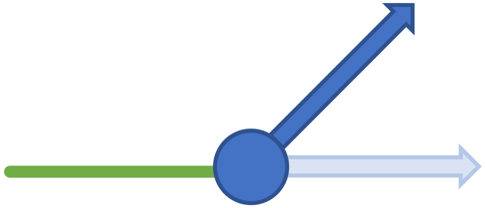

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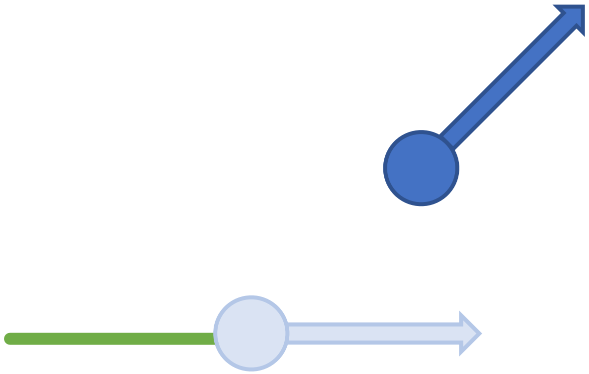

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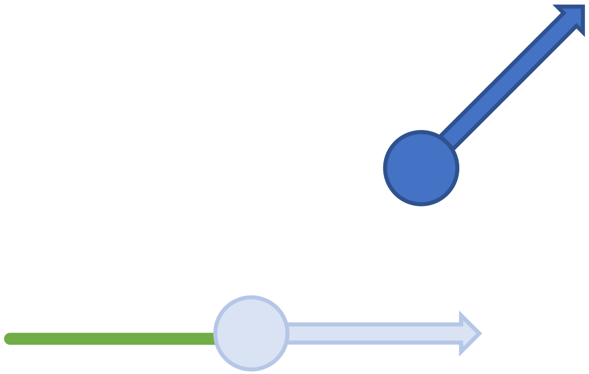

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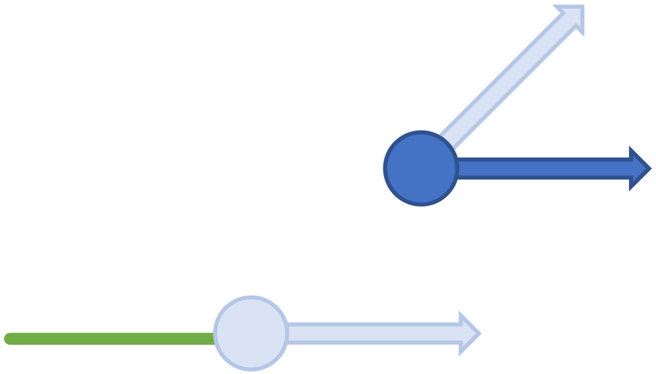

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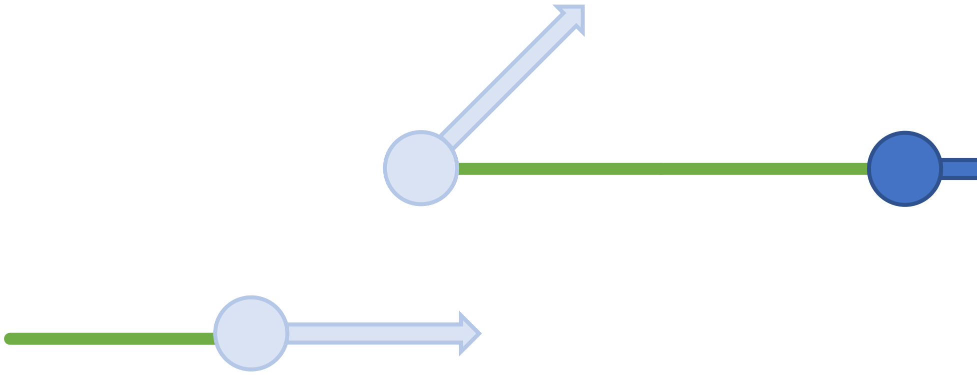

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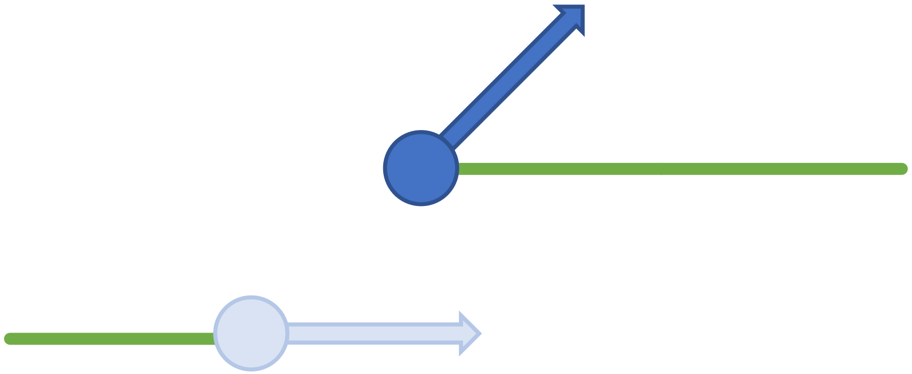

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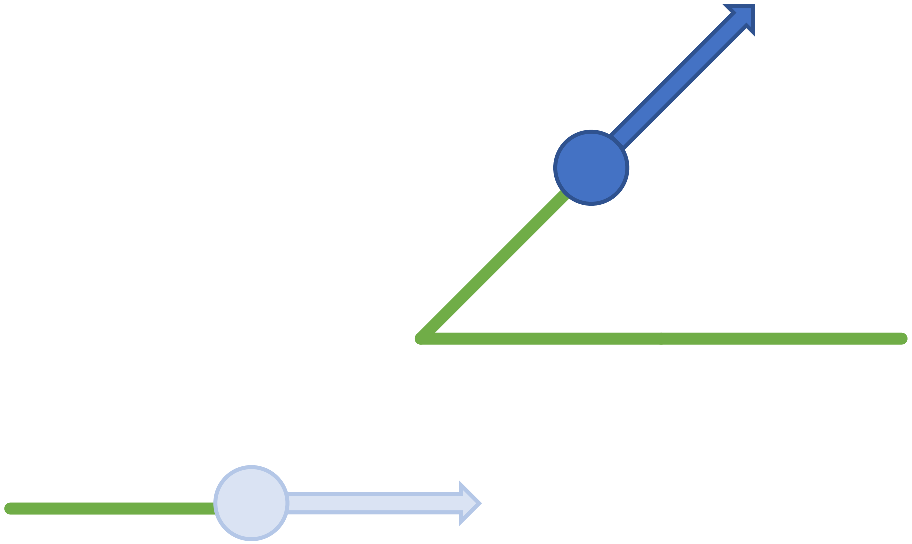

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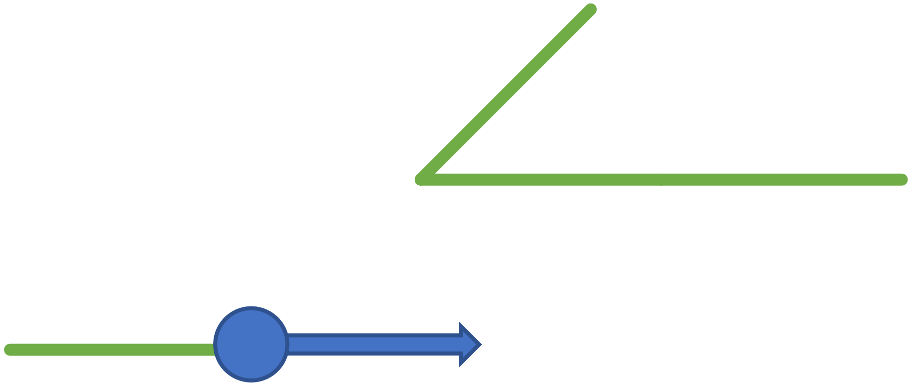

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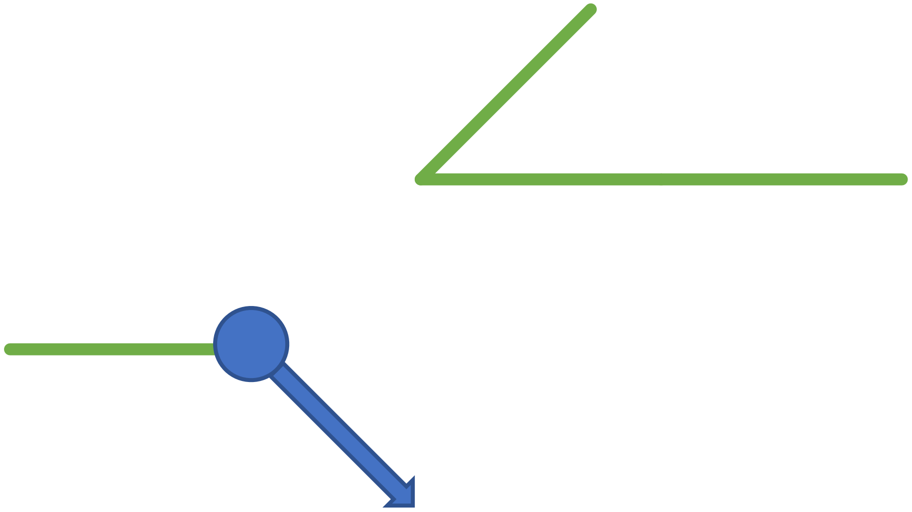

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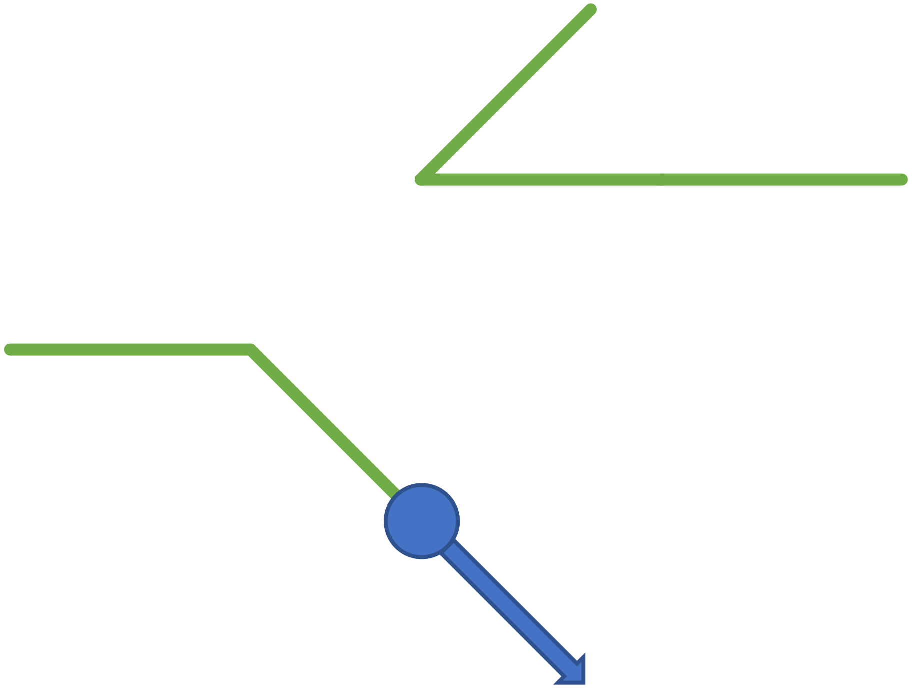

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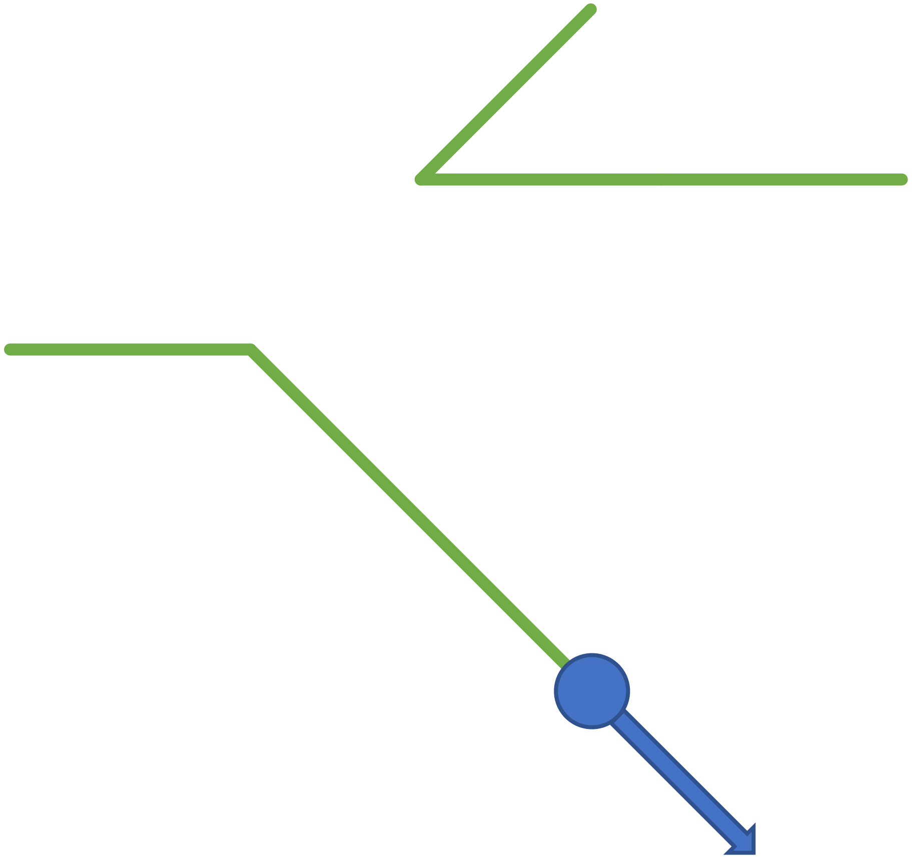

colorcycle

`colorcycle`

- `turtle::colorcycle();`

  → changes drawing color of turtle

- Cycles through colors
  - call it ≈10000 times to return to initial color

colorcycle-Example

```
#include "turtle.cpp"

// POST: a colored straight line was
//       drawn
void draw_colored_line (const int n) {
  for (int i = 0; i < n; ++i) {
    turtle::forward();
    turtle::colorcycle();
    turtle::colorcycle();
    turtle::colorcycle();
    turtle::colorcycle();
  }
}

int main () {
  // draw spiral
  for (int i = 0; i < 70; ++i) {
    draw_colored_line(i);
    turtle::left(90);
  }
  return 0;
}
```