

```
Ball
- position : double
- velocity : double
+ Ball()
+ get_position() : double
+ set_position(double) : void
+ get_velocity() : double
+ set_velocity(double)
+ push(direction:Push, velocity:double) : void
```

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Ball
- position : double
- velocity : double
+ Ball()
+ get_position() : double
+ set_position(double) : void
+ get_velocity() : double
+ set_velocity(double)
+ push(direction:Push, velocity:double) : void
```

Beam

- length : double
- angle : double
- ang_velocity : double

- + Beam()
- + Beam(length:double, angle:double, ang_velocity:double)
- + get_angle() : double
- + set_angle(desired_angle:double, time_passed:uint_fast64_t)

Beam

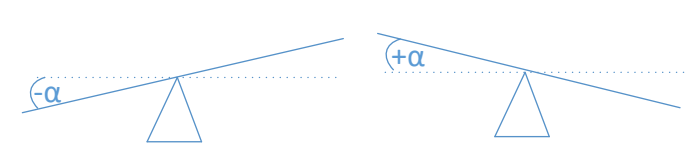
- length : double
- angle : double
- ang_velocity : double

- + Beam()
- + Beam(length:double, angle:double, ang_velocity:double)
- + get_angle() : double
- + set_angle(desired_angle:double, time_passed:uint_fast64_t)

```
<<Enumeration>>
Push
  -left
  -right
```

```
<<Enumeration>>
Push
  -left
  -right
```

```
<<Enumeration>>
Push
  -left
  -right
```



Controller

- + ball : Ball
- + beam : Beam
- kp : double
- ki : double
- kd : double
- desired_pos : double

- + Controller(Ball, Beam, double, double, double, double)
- + control(position:double) : double desired_angle
- + update(double: desired_angle)
- + get_kp() const: double
- + set_kp(kp: double)
- + get_ki() const: double
- + set_ki(ki: double)
- + get_kd() const: double
- + set_kd(kd: double)

Controller

- + ball : Ball
- + beam : Beam
- kp : double
- ki : double
- kd : double
- desired_pos : double

- + Controller(Ball, Beam, double, double, double, double)
- + control(position:double) : double desired_angle
- + update(double: desired_angle)
- + get_kp() const: double
- + set_kp(kp: double)
- + get_ki() const: double
- + set_ki(ki: double)
- + get_kd() const: double
- + set_kd(kd: double)

