```cpp
//
//  PENDULUMWITHFRIC.cpp
//  ODEsolver
//
//  Created by Ben Stager on 5/3/21.
//

#include "PENDULUMWITHFRIC.hpp"
#include <cmath>
const double piOver4 = 3.14/4;
const double gravity = 9.8;
// default constractor
PendulumWithFriction::PendulumWithFriction():PendulumWithFriction(piOver4,0,1,1,0.2
){
}

// constractor
PendulumWithFriction::PendulumWithFriction(double angle0,double angleV0,double
weight,double stringLength, double dragCo):EulerODE(2),weight(weight),
stringLength(stringLength), dragCo(dragCo){
    setComponent(0, angle0); // set initial angle
    setComponent(1, angleV0); // set initial angular velocity
}
// copy constractor
PendulumWithFriction::PendulumWithFriction(const PendulumWithFriction
&p):EulerODE(p),weight(p.getWeight()){
}

// Get Weight
double PendulumWithFriction::getWeight() const{
    return weight;
}

// compute Y'(t)
void PendulumWithFriction::computeY_dot(){
    // y' = v = Y[1]
    setDotComponent(0, getComponent(1));

    // v' = a = Gravitational Acceleration
    setDotComponent(1,(-gravity/stringLength)*sin(getComponent(0))-(dragCo/
weight)*getComponent(1));
}
```