

```
// From the pendulum program
```

```
fn runge_kutta(  
    vars: &MyVec,  
    pars: &Vec<f64>,  
    rhs: &dyn Fn(&MyVec, &Vec<f64>) -> MyVec,  
    dt: f64,  
) -> MyVec {  
    let rk_1 = rhs(vars, pars);  
    let rk_2 = rhs(&vars.add(&rk_1.scale(dt / 2.0)), pars);  
    let rk_3 = rhs(&vars.add(&rk_2.scale(dt / 2.0)), pars);  
    let rk_4 = rhs(&vars.add(&rk_3.scale(dt)), pars);  
  
    let vars_new = vars  
        .add(&rk_1.scale(dt / 6.0))  
        .add(&rk_2.scale(dt / 3.0))  
        .add(&rk_3.scale(dt / 3.0))  
        .add(&rk_4.scale(dt / 6.0));  
    vars_new  
}
```