MATLAB section:

I wrote the variables in Matlab then load it into Simulink.

q2_vars.m

```
1 -    mr = 0.095;
2 -    r = 0.085;
3 -    br = 0.001;
4 -    mp = 0.024;
5 -    Lp = .129;
6 -    bp = .00005;
7 -    g = 9.81;
8 -    Jr = mr*r*r/3;
9 -    Jp = mp*Lp*Lp/3;
10 -   l = Lp/2;
11 -   Jt = Jr*Jp - (mp*r*l)^2;
```

Fig 1: Matlab code

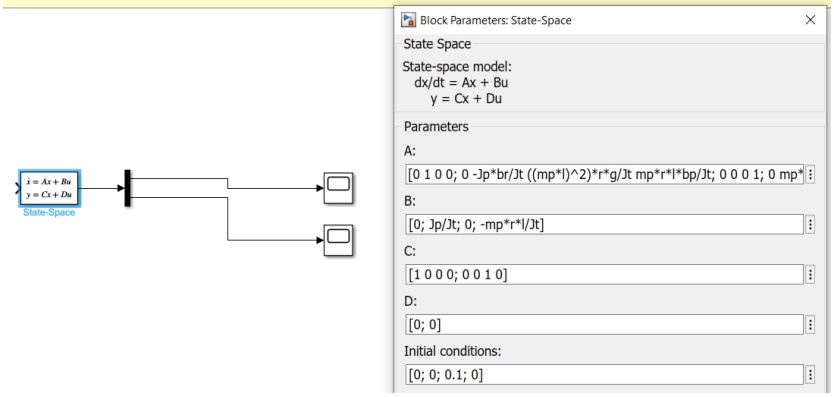

Fig 2: Simulink model

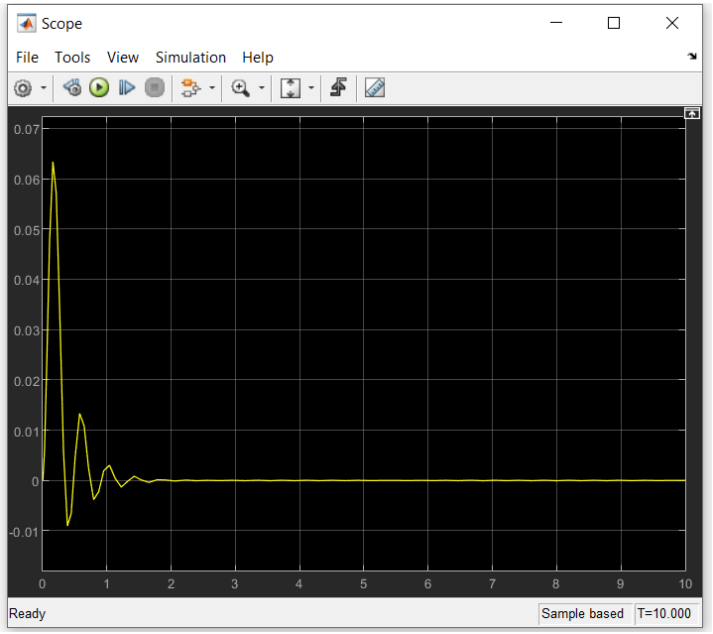

Fig 3: Angle over time

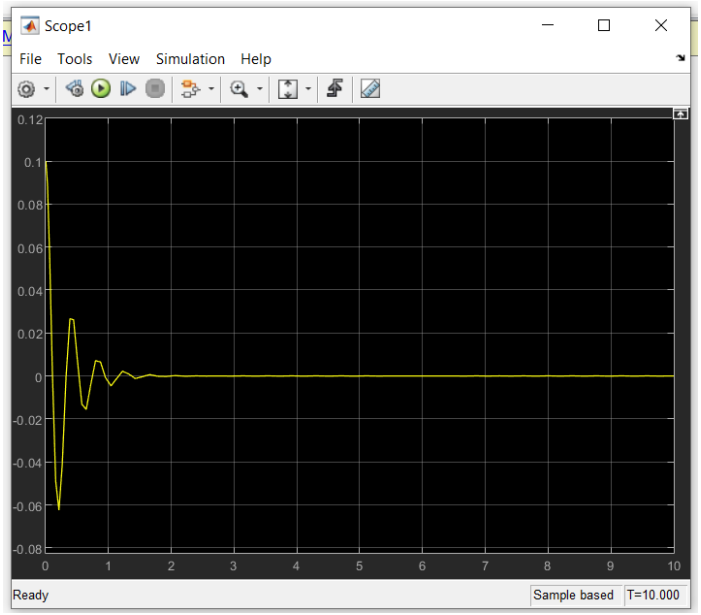

Fig 4: Speed over time