

%PARAMETERS

```
m = 1;
M = 1;
g = 9.8;
l1 = 1;
l2 = .8;
A = [0 0 0 1 0 0;
     0 0 0 0 1 0;
     0 0 0 0 0 1;
     0 -m*g/M -m*g/M 0 0 0;
     0 (m+M)*g/M/l1 m*g/M/l1 0 0 0;
     0 m*g/M/l2 (m+M)*g/M/l2 0 0 0];
B = [0; 0; 0; 1/M; -1/M/l1; -1/M/l2];
C = eye(6);
D = zeros(6,1);
```

%INITIAL CONDITIONS

```
x0 = [5; 0.1; -0.1; 0; 0; 0];
%x0 = 100*rand(6,1);
```

