Final wrap-up of project:

* Summarize work in a short report
* Present work in class

Short report structure:

* Present problem (what were our goals)
* Give results of physics derivations (reference to Maple for complete version)
* Talk about the construction process (challenges, non-ideal stuff)
* PID control
  + Reference PID script
  + Reference uploaded video (need to upload still) of working project
  + Challenges (nonlinear, estimating derivative, tuning, steady state error)
    - Plotting PID components helped
  + Possible improvements (less steady state oscillation, change beam)
* State space formulation
  + Challenge: servo motor modelling
  + Reference servo motor derivations
* LQR
  + Reference MATLAB script that derives control law
  + Note that we need to be able to observe the angle of the beam
    - Observer or add sensor
* Conclusion

Presentation structure:

* Present problem
* Talk about physics derivation (assumptions, etc.)
* Talk about construction
* Demo PID
  + Talk about challenges:
    - Derivative
    - Tuning
    - Steady state error
* Talk about challenges with state space formulation / LQR work
  + Need to observe angle
  + Is nonlinear