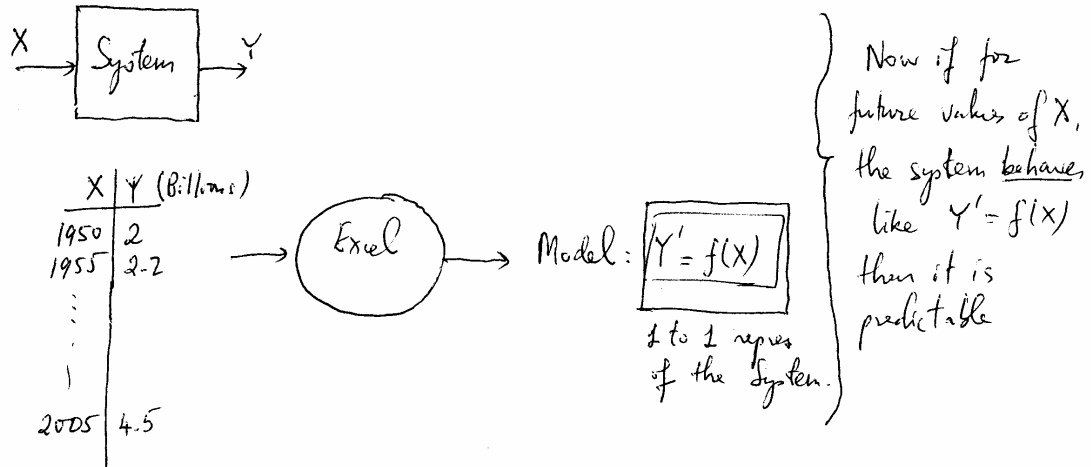Engin 103
Fall '06
Meeting #15: October 19, 2006

Today we introduced project 2: Data Modeling and Predictability of a System. Check the link to the project in e-syllabus for specifications.

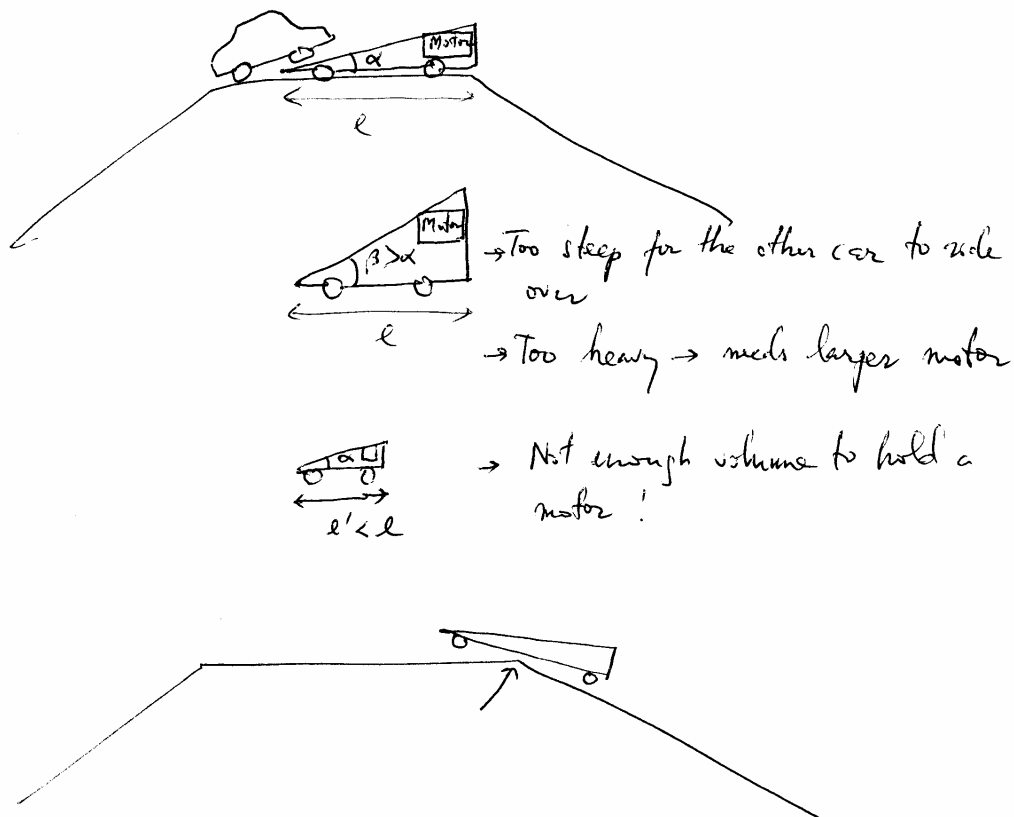An explanation for predictability as applied to the world population is here:

$X \rightarrow \boxed{System} \rightarrow Y$

X	Y (Billions)
1950	2
1955	2-2
⋮	
2005	4.5

$\rightarrow \bigcirc Excel \rightarrow Model: \boxed{Y' = f(x)}$

1 to 1 repres of the System.

Now if for future values of X, the system behaves like $Y' = f(x)$ then it is predictable

If according to $Y' = f(x)$: world pop in 2020 is 5 billion ($Y' = 5$ billion) and the actual Y is 5.1 billion (2% discrepancy) the world pop is predictable. If the actual is instead 3 Billion → the system is "unpredictable" (40% discrepancy)

This project requires the use of engineering design to achieve predictability. Other example of engineering design was introduced in CW#2 whose solution is here:

CW 2 sol.

the wedge shape defense strategy for the car, as discussed in
section 2.5 of the Design Concepts for Engineers Book, requires a
minimum length so the car can accomodate a sufficiently large
engine, a shorter length would required steeper angle for the wedge
shape that makes it become ineffective as a defense strategy
(having the opponent car ride over and flights off the top flat
portion of the ramp).

→ Too steep for the other car to ride over

→ Too heavy → needs larger motor

→ Not enough volume to hold a motor !

We also did Circuit Analysis with LabVIEW I

Suggested items to write in the Engin 103 logbook:
1) **How will I prove the predictability for a device? Explain in your own words**
2) **How do I copy a drawing in Paint onto the Front Panel? What is the purpose of inserting a circuit into the Front Panel in Circuit Analysis with LabVIEW I? How do you bring a control or indicator to the front if they are hidden by the drawing?**