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2.007 Design and Manufacturing I
Spring 2009

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2.007 –Design and Manufacturing I

Professional Ethics

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28 APR 2009

Today's Agenda

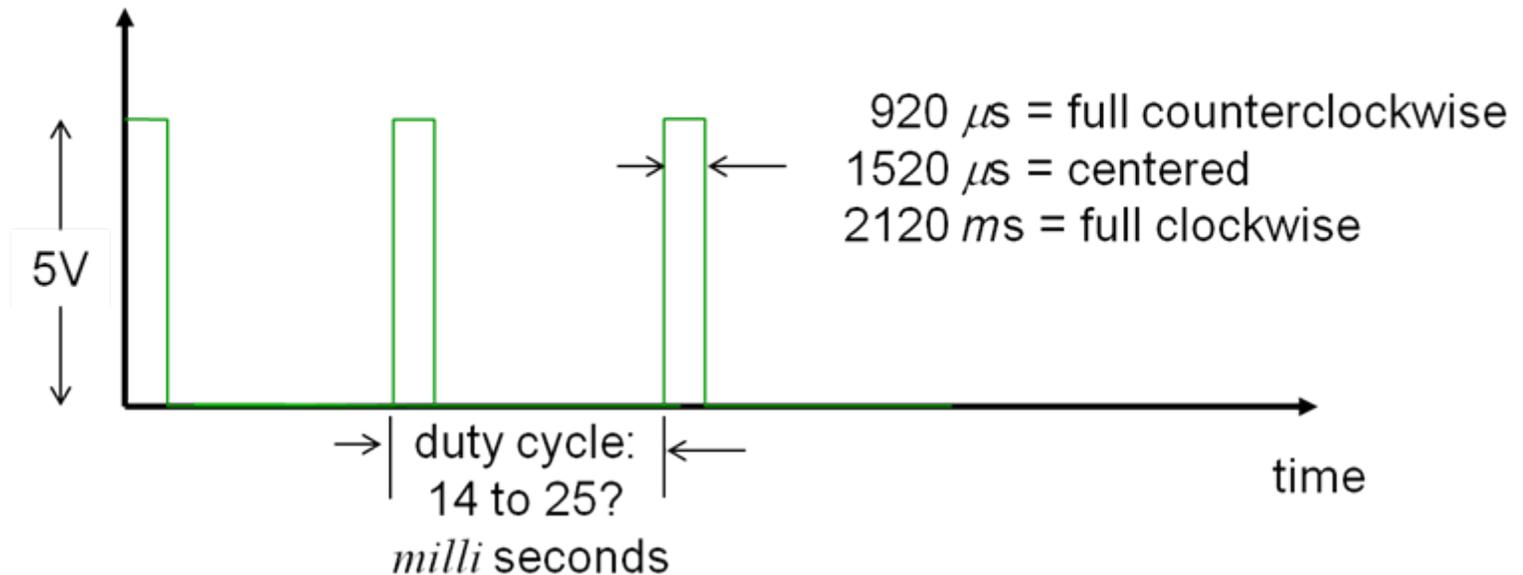
- Seeding and impounding procedures
- Methods for Solving Systems
 - Newton-Raphson
 - Secant
 - Bisection
- Examples related to mechanism design

Radios

- We have 20 working sets as of last night
- I guess there will be 60 people trying to work at times
- In effect, we have 20 queues each 2 deep
- If a person asks you to share a radio, please surrender it within 5 minutes
- If we do that, no person will wait more than 10 minutes for a chance to use a radio

Format of the Radio Receiver Communications: Pulse Width Modulation (PWM)

Voltage on yellow wire



Note the need for a pause of some
specified range of duration

Impounding

- A way to bring the work to an end
- Your machine is checked
 - Safety
 - Wiring
 - Rules issues
- Your “seeding card” is essential
 - Your impound checks are recorded
 - Your card goes in the WOODEN BOX

Homework #4

- You don't have to do it
- The default grade = your exam #2 grade
- If you do it, you effectively raise your exam #2 grade
- The assignment is
 - Go pick topics on the exam you think you don't fully understand
 - Go learn more about them
 - Write a little bit about that

Philosophy

φιλοσοφία

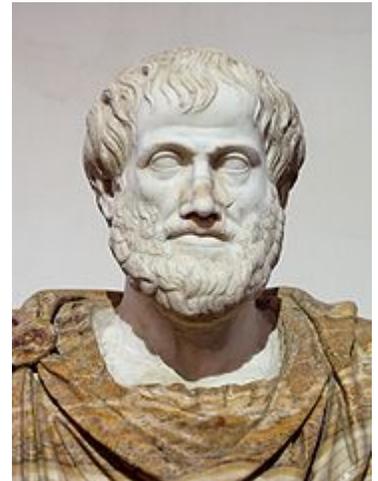
- The love (philo) of knowledge / wisdom (logos)
- Characterized by a critical approach and a reliance on reasoned argument
- Includes areas such as
 - Meta physics
 - Epistemology
 - Logic
 - Ethics



“The Death of Socrates”

Ethics

- The philosophical study or morality
 - Goodness
 - Right action
 - Fairness
 - Justice
- Also an application domain

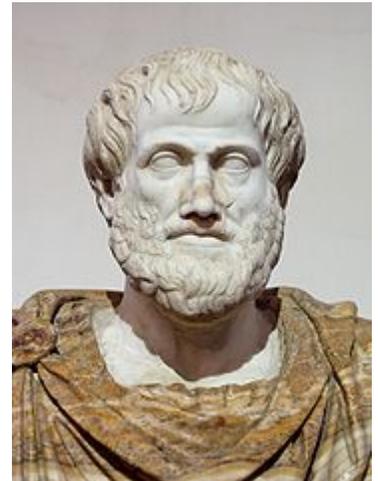


Aristotle

Audi, R. (ed.), *Cambridge Dictionary of Philosophy*,
Cambridge University Press, 1995.

Ethics

- Originally called *eudaimonia* which translated roughly to “happiness”
- Aristotle’s view of ethics
 - Known as “perfectionism”
 - Emphasizes happiness
 - “the deep satisfaction that comes from doing an important job well”
 - Contrasted with hedonism



Aristotle

Audi, R. (ed.), *Cambridge Dictionary of Philosophy*,
Cambridge University Press, 1995.

Rawls: Theory of Justice

- “Veil of ignorance”
 1. Each person has an equal claim to a fully adequate scheme of basic rights and liberties, which scheme is compatible with the same scheme for all....
 2. Social and economic inequalities are to satisfy two conditions: first they are to be attached to positions and offices open to all under conditions of fair equality of opportunity; and second they are to be to the greatest benefit of the least advantaged members of society.

Nozick: Nature of Rationality

- Justice as process based rather than outcome based
- Contends that it is often rational to take sunk costs into account
- Introduces a new category, symbolic utility

U.S. Military Academy Code of Honor

“A cadet will not lie, cheat, steal,
or tolerate those who do.”

ASME: Code of Ethics Principles

- Engineers uphold and advance the integrity, honor and dignity of the engineering profession by:
 1. Using their knowledge and skill for the enhancement of human welfare;
 2. Being honest and impartial, and serving with fidelity the public, their employers and clients; and
 3. Striving to increase the competence and prestige of the engineering profession.

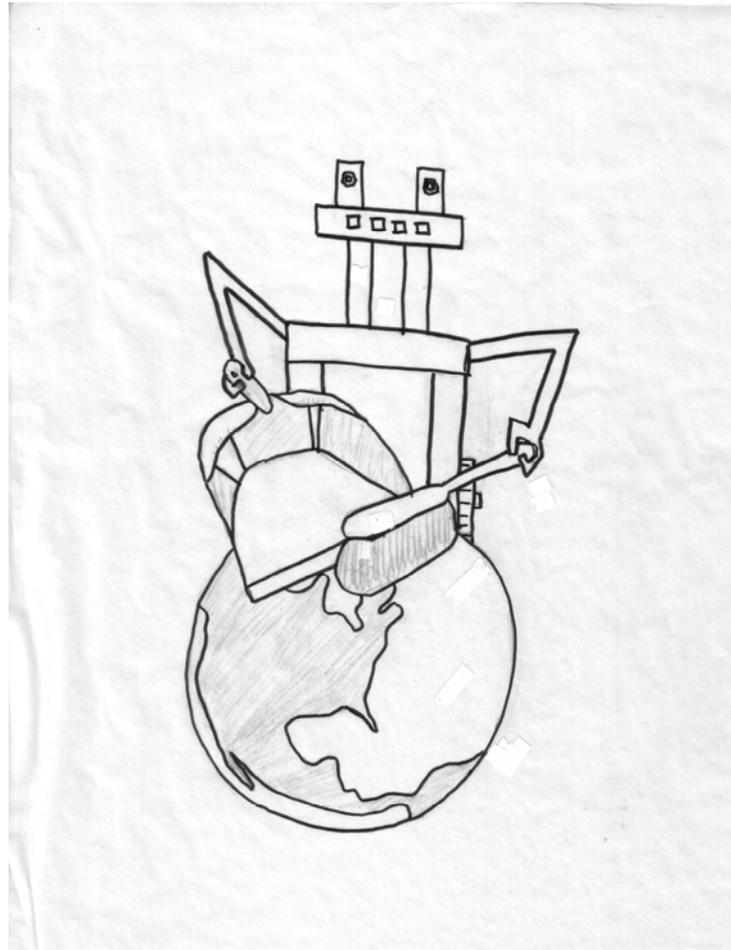
ASME: Code of Ethics Canon

1. Engineers shall hold paramount the safety, health and welfare of the public in the performance of their professional duties.
2. Engineers shall perform services only in the areas of their competence.
3. Engineers shall continue their professional development throughout their careers and shall provide opportunities for the professional and ethical development of those engineers under their supervision.
4. Engineers shall act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest or the appearance of conflicts of interest.

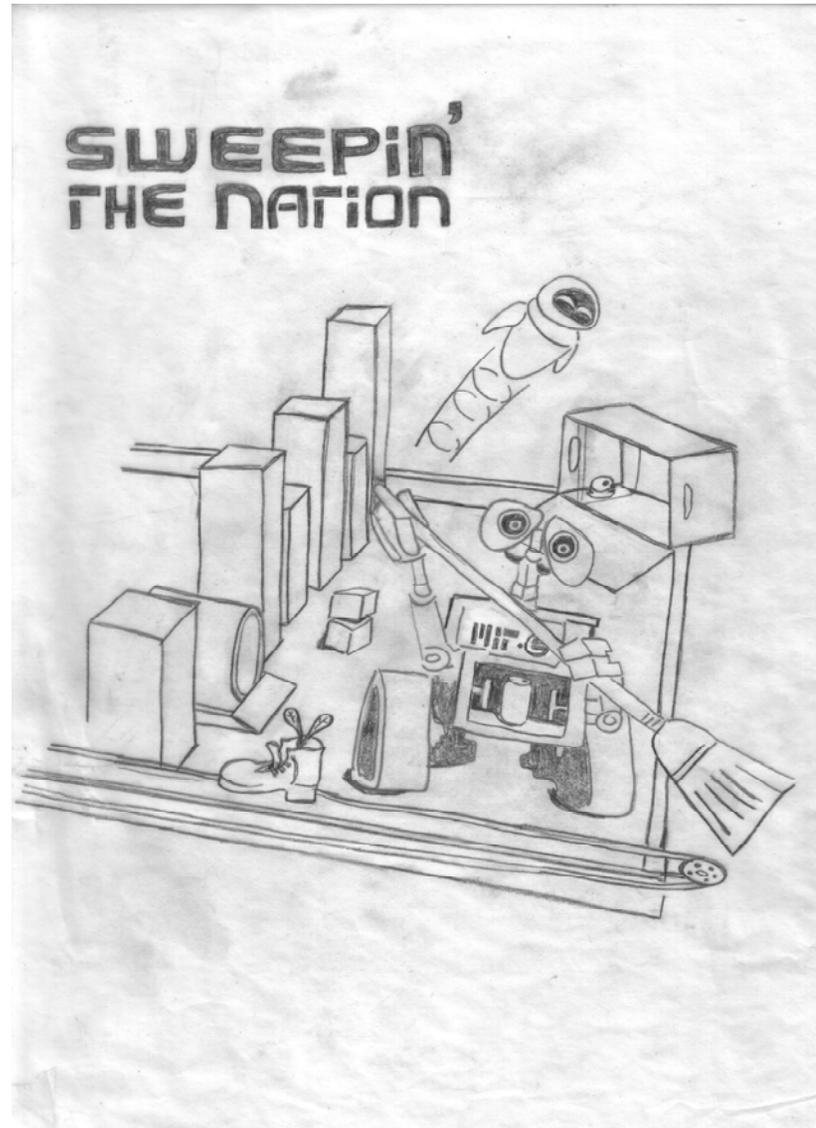
ASME: Code of Ethics Canon

5. Engineers shall build their professional reputation on the merit of their services and shall not compete unfairly with others.
6. Engineers shall associate only with reputable persons or organizations.
7. Engineers shall issue public statements only in an objective and truthful manner.
8. Engineers shall consider environmental impact in the performance of their professional duties.

The T-Shirt Case Study

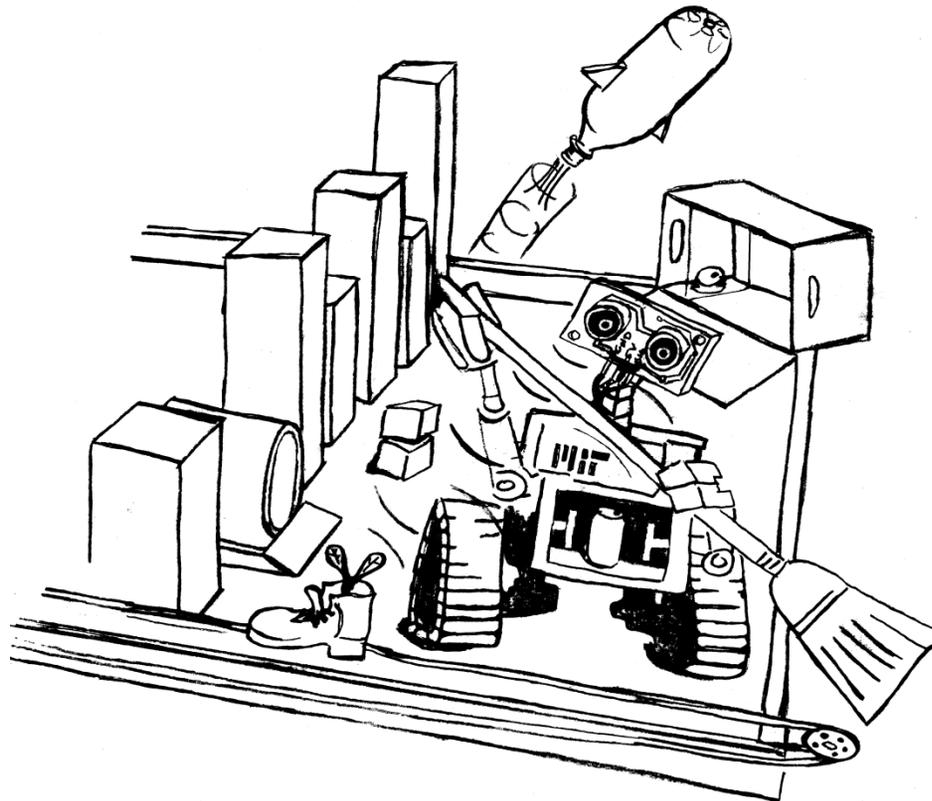


The T-Shirt Case Study



The T-Shirt Case Study

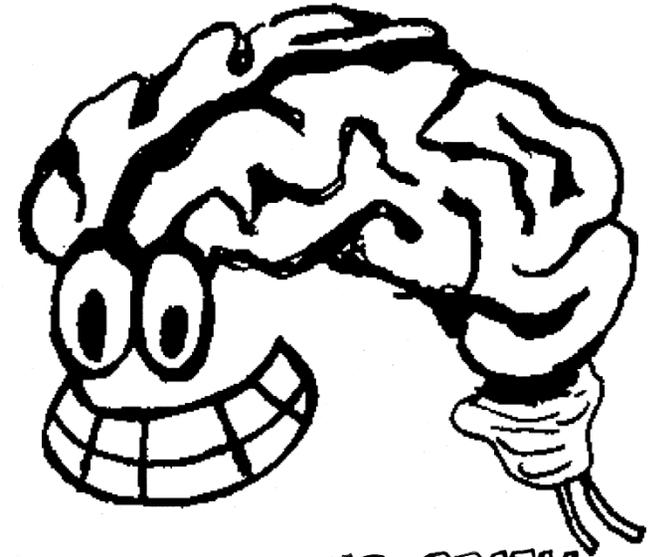
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The T-Shirt Case Study



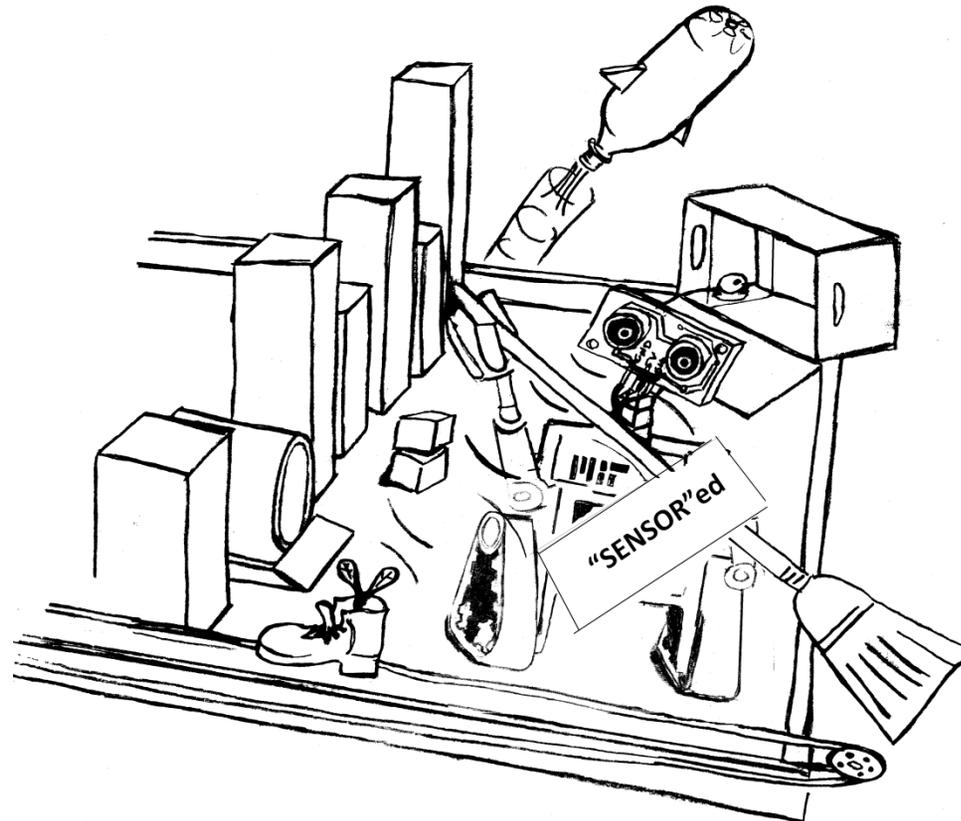
THIS IS
YOUR BRAIN



THIS IS YOUR BRAIN
ON DESIGN

The T-Shirt Case Study

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Next Steps

- Tuesday 5 May
 - Contest procedures
- Weds 6 May (First night)
- Thursday 7 May
 - No lecture
 - Second night of contest