Curiosity is as much a parent of attention as attention is of memory

Richard Whately (logician, 1787-1863)
Curiosity is as much a parent of attention as attention is of memory

Richard Whately (logician, 1787-1863)
Project timesheets

why in 2.009?

representative of real practice
data for your business model

reflection on where/how
improve the 2.009 product
you are spending your time
development process
# Project timesheets

## how they work

### Edit 2.009 Timesheet Entry for David Wallace

<table>
<thead>
<tr>
<th>Activities</th>
<th>time alone hr</th>
<th>time alone min</th>
<th>time w/others hr</th>
<th>time w/others min</th>
<th>short description of details</th>
</tr>
</thead>
<tbody>
<tr>
<td>designing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>secondary research on web</td>
</tr>
<tr>
<td>identifying design problems</td>
<td>1</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>generating design concepts</td>
<td></td>
<td>30</td>
<td></td>
<td></td>
<td>listing ideas in notebook</td>
</tr>
<tr>
<td>selecting design concepts or details</td>
<td></td>
<td></td>
<td>1</td>
<td>30</td>
<td>pinup and organizations of ideas with team</td>
</tr>
<tr>
<td>sketching ideas</td>
<td>3</td>
<td>0</td>
<td></td>
<td></td>
<td>preparing annotated sketches</td>
</tr>
<tr>
<td>CAD modeling</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>writing about your project</td>
<td></td>
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</tr>
<tr>
<td>analyzing or calculating</td>
<td></td>
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</tr>
</tbody>
</table>

log in and start using the form

(MIT username. notebooks, scheduler, store, timesheets are all same password)

spreadsheet for offline note keeping

separate entry for each day
Project timesheets guidelines

do not over-bill or under-bill

be accurate and complete

fastest to make entries every day that you work on the class

your lab instructors will not see the timesheets and I use scripts to process the data
Mini-quiz from last Wednesday

question i)
list a mental attitude that *blocks* creativity?

*attitude: a settled way of thinking*
using the left side of the brain in not an attitude!
Mini-quiz from Wednesday
question ii)

list two factors that correlate with unsuccessful product development teams
have a mutual relationship or connection vs. opinions (laziness, disorganization, sexual tension)
truisms (bad teamwork, weak group)
Mini-quiz from Wednesday

question ii)

list two factors that correlate with *unsuccessful* product development teams
2.009 Product engineering processes today in class

ideas presentation estimation from Friday more ideation and estimation
a product opportunity

idea + customer need + market + feasibility
3-ideas presentation
next Monday

Three ideas presentation
September 25, during class
3 ideas per section

A

B

Sketch model review
October 5
3 models per section

Mockup review
October 19
2 mockups per section

ONE SUBTHEME
ONE TEAM
Class (next) Monday
3-ideas presentation
a product opportunity

idea + customer need + market + feasibility
3-ideas presentation

tips and overview

Review structure

each section presents
2 minutes to present 3 product ideas
equal amounts of time on each idea

scenario?
strictly held to two minutes
3-ideas presentation
tips and overview

use descriptive sketches
3-ideas presentation
tips and overview

visuals
- sketch
- not solid model
- hand done
- digital
- original
- not clip art
3-ideas presentation

tips and overview
3-ideas presentation

tips and overview

poster format

each idea should be prepared on a piece of foam core, 
**laid out in vertical orientation**
maximum 1” thick
foam core is in pappalardo lab (24x36)
the poster should convey

  your section name and the idea name
  a vision for the idea’s embodiment/need
  the targeted customer
  the anticipated market
  its feasibility/doability

readable from 50-80 feet = clean and flows
supporting citations, estimations on back
3-ideas presentation

tips and overview

poster format

are captions needed?
what’s a meaningful market?
what’s feasible?

readable from 50-80 feet = clean and flows
3-ideas presentation
plotting and practice

scheduling tools will be on website Tuesday

reserve a time for plotting/mounting help on Sunday
reserve a time to practice with communication instructors

use your MIT username to log in
choose reset password for first use
used throughout term (scheduling, notebooks)

we will collect pdf (and poster)
at time of plotting

no google slides please
please do not plot Monday morning!
3-ideas presentation

tips and overview

setup

make sure your presenters arrive no later than 12:55 PM

posters will be at the front of the classroom

presentations will commence at 1:05 PM
3-ideas presentation

tips and overview

presentation tips

do not read the poster! Augment the visual information and look at the audience (but acknowledge poster)
a story is more memorable than a list
do not read cue cards... practice in advance
do not emulate a 'used-car salesperson’ or TV infomercial
be honest and informative
humor is great! ... but be careful

more tips from communication instructors online
3-ideas presentation

tips and overview

feedback logistics

idea/opportunity area for your team posted 5 PM Monday

instructors (from other teams) will provide poster feedback overnight (before Tuesday lab)

feedback from your own team instructors during lab
2.009 Product engineering processes today in class

idea presentation

estimation from Friday

more estimation
Friday

usable energy in a D cell

“enough”

no answer, or did not have units of energy
avoid non-standard units: hours of flashlight

barrel of oil?
42 US gallons
159 l

about right
Battery powered, hand foam cutter
estimation exercise
Battery powered, hand foam cutter
is it feasible? Key question
Battery powered, hand foam cutter

is it feasible? Analogous model

power?

2 W/cm²

how am I supposed to know that?

do you have an experience to draw upon?

look for the next right answer!
Battery powered, hand foam cutter
is it feasible? Analogous model

- ~2 W/cm²
- ~1.5-2 W/cm²
- ~2-3 W/cm²
- ~3 W/cm²

do you have experience to draw upon?
Battery powered, hand foam cutter
is it feasible?

“would prof. Wallace demo an idea that won't work?”
“a really #$@*$ing unsafe idea”
~50% not sure if feasible
Design challenge!
idea generation and estimation practice
Design challenge!
idea generation and estimation practice
name *and section*, no computers or mobile

Design challenge!

has lost his powers
Design challenge!

name *and section*, no computers or mobile devices, and been captured.
Design challenge!

name *and section*, no computers or mobile

you must free product man!
Design challenge!

but to save him…
Design challenge!

name and section, no computers or mobile

you must navigate an obstacle filled landscape
name and section, no computers or mobile

Design challenge!

while protecting yourself from toxic, airborne projectiles
name and section, no computers or mobile

Design challenge!

and then erect his fortress of solitude
Design challenge!

name *and section*, no computers or mobile devices to restore product man’s powers
Your challenge!

name *and section*, no computers or mobile

design a fun, super-hero worthy human-powered vehicle for at least 1 driver

to navigate the treacherous obstacles protect yourself from airborne projectiles

and transport pieces of the fortress of solitude

10 minutes 6 + 4
Estimation challenge!

5 minutes

estimate the power required for your device to travel at a speed of 5 mph
and finally...
**reminders/coming up**

be prepared for your lab, please read notes in advance

will send email with plotter signup/schedule

foam core in lab but you need to obtain other materials

designing a portfolio, Monday 7:15 PM in 1-390

financial officer training this Thursday, noon

yoda 101: Thursday 7 PM

illustrator tutorial: Friday 5 PM