Overview: Klax World Model

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Important Notes...

- Hard copies **must** be double-spaced
- Hard copies **can** be double-sided (duplex)
- A word to the wise: I will be traveling late next week and will have sporadic email access. **If** I reply, it’ll be delayed.
- Office hours MW 3:30-5pm in ICS2 246
- These slides should be posted soon (Friday?)
Cruise Control System

Brake Controller
Determine state of braking system
Operations:
1. Brake pedal depressed?
2. ABS active?

Throttle Controller
Controls vehicle throttle
Operations:
1. Apply throttle x%
2. Get current throttle setting?
3. Throttle pedal depressed?

Cruise Control Interface
Determines state of CC buttons and levers under driver’s control
Operations:
1. Get button state 1
2. Get button state 2
3. ...

Vehicle Speed
Determine vehicle speed
Operations:
1. Get speed

Front axle sensor
Determine rate of rotation of front axle
Operations:
1. Get rotation rate

Rear axle Sensor
Determine rate of rotation of rear axle
Operations:
1. Get rotation rate
2. Get rotation direction

Notes:
1. No transmission status?
2. CC doesn’t access axle sensors directly
Cause and effect: Automobile

- What happens when I turn wheel to right?
- ...when I try to lower windows? Driver-side?
- ...when I turn the wheel left before starting?
- ...when I switch to reverse while driving?
- ...when I apply emergency brake?
- ...when I open the door with keys in?
Goals of a good specification

- Says what system does and doesn’t do
- **Clearly explains the system comprehensively**
  - Explain to a first-grader (aka computer)
- Take any system and **all** behavior would be defined by its specification
- Reverse applies too: Using just the specification, you can design the system
Questions you should answer

- Object-oriented analysis: Try to abstract!
- Try to answer the 4 W’s + H.
  - Who uses X? What is X? Where is X? When is X used?
  - How many of X? How does X change?
- Can X change? When can X change?
What is X?

- Describe the visual features of X
  - Color, shape, size?
  - Is there meaning or relevance?
- Describe the functionality of X
  - What is the intended purpose?
  - How does the user influence X?
Cause and effect: Palette

- What if a palette misses a tile?
- What if a palette is underneath a tile?
- What if a palette is full? (What is full?)
- What if a tile drops on an empty well?
- What if a tile drops on a partially full well?
- What if a tile drops on a full well?
Cause and effect: User Input

- What happens when I hit left at 1st column?
- ...when I hit right at 1st column?
- ...when I hit down with no items?
- ...when I hit down with four items on palette?
- ...when I hit left before I hit ‘start’?
- ...when I hit ‘Start’ after I die?
Role of the prototype

○ Guide on what these answers should be

○ However, the prototype is not perfect

○ You will be forced to use common sense

○ Where is the prototype incorrect?

○ These are great for future changes!

○ Include justification as to why incorrect