HCI 2/18

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Fitts' Law

- This is the time it takes to hit a target as a function of two things: the **size** of the target and the **distance** between the target and the current location
- It can help determine *where* to put elements and *how large* to make them with making sure the goal is to make user interfaces easy to use

The Original Formula

- A is the amplitude (the distance to the target)
- W is the width of the target (or the effective width for W_e)
- ID is the index of difficulty
- MT is the movement time
- TP (IP) is the throughput (or the index of performance)
- a and b are determined experimentally, usually $a = 50ms$ and $b = 150ms/bit$

$$\mathrm{ID} = \log_2\left(\frac{\mathrm{A}}{\mathrm{W}} + 1\right)$$
$$\mathrm{MT} = a + b \times \mathrm{ID}$$
$$\mathrm{TP} = \frac{\mathrm{ID}}{\mathrm{MT}}$$

Implications of Fitts' Law

- We want to design large targets and small distances
- Components should occupy the maximum possible space withouth looking ridiculous
  - Spacing and grouping can be more important
- We want to take advantage of the *inherent display geometry*
- Screen edges have infinite effective width which gives them some sort of advantage that I didn't catch
- Corners are good too, but for both edges and corners we need to be aware of multimonitor systems
- The "largest" thing should be wherever the cursor is
- Fitts' Law has its issues too that I'll write down later