Submitted by Group 51

Group Members:
CETIN, Ulfet (391819)
GRUCZKA, FILIP ()
LIPINSKI, Bartosz ()

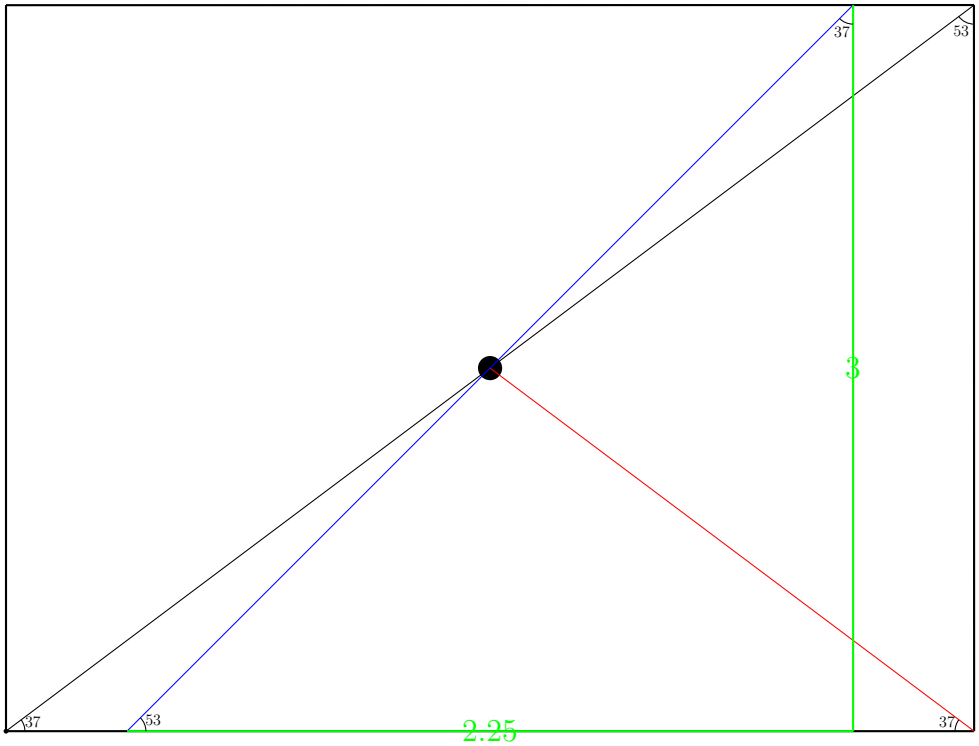
DIS1 WS 19/20 Assignment 1
Predicting Human Performance using Fitts' Law

1.

a)

- Distance from S to F , D_{SF}: 25 cm
- Target Width for S to F , W_{SF}: 5 cm ($\sqrt[2]{3^2 + 4^2} = 5$)
- Target Width for S to F , W_{SF}: 3.75 cm
- Distance from F to C , D_{FC}: 32 cm
- Target Width for F to C , W_{FC}: 8 cm

Shannon's formula for reference: $T_{pos} = a + b * log_2(\frac{D}{W} + 1)$
given values: a = 0 ms, b = 100 ms/bit



Length of the blue line (that is perpendicular to red line) is 3.75 cm.

- Movement Time for S to F , MT_{SF}:
  $\text{MT}_{SF} = 0ms + 100\frac{ms}{bit} * log_2(\frac{25}{5} + 1) = 258.49625007211563$ ms

- Movement Time for F to C , MT_{FC}:
  $\text{MT}_{FC} = 0ms + 100\frac{ms}{bit} * log_2(\frac{32}{8} + 1) = 232.19280948873623$ ms

- Movement Time for S to C , MT_{SC}:
  $\text{MT}_{SC} = 258.49625007211563 + 232.19280948873623 = 490.6890595608519$ ms

b) Using fingers (b) instead of mouse (a) causes the movement time to: **DECREASES**.
r1 = 100 + 50*log(25.0/5 + 1, 2)
r2 = 100 + 50*log(32.0/8 + 1, 2)
r1 + r2 → 445.3445297804259 ms

2. Sketch of your redesign:

How your redesign minimizes the selection time:

3.

- Argument #1:
- Argument #2: