

Part 2 Step Responses (Fitt's Law)

In the second part of PA1, you are now going to perform a step response task.

Overview of step response tasks:

Task	Display	System (controlled object)
K	Step Response	Pure gain
L	Step Response	Second order integrator

Task instruction for experiment subjects:

Your task is to position the green vertical line on the white square as quickly as possible.

Questions

14. Please load task K in MMSlab2. This task requires you to perform 30 step responses. Use the *Continue Step* button after you completed a step response. Provide the plot of *Difficulty Score* versus *Step Time* after you performed 30 step responses.

How is *Difficulty Score* defined?

15. Please load task L in MMSlab2. This task requires you to perform 30 step responses. Use the *Continue Step* button after you completed a step response. Provide the plot of *Difficulty Score* versus *Step Time* after you performed 30 step responses.

How is *Difficulty Score* defined?

16. Describe the relationship between *Difficulty Score* and *Step Time*. Explain using Fitts' Law (see lecture slides of Joost De Winter, uploaded on Blackboard).

17. Explain your control strategy; how could you reach the target as quickly as possible?

18. The correlation you observed between *Difficulty Score* and *Step Time* is probably weaker than the strong correlations found by Fitts (see lecture slides). Explain this difference between your results and their results.