Assignment 1

Human Perception & Cognition
Reaction Time Experiment

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What is the test about?

It is about reaction time. Our test consists of levels, and grids containing circles and squares in different colours in which the user needs to locate the white circle and click on it as fast as possible. Note that there is only one white circle. To start the test simply press the start button. When the test finishes it is possible to retry by clicking on the retry button.

In detail, the test has a level n, and a grid that is exactly $n \times n$ where $n \in \mathbb{N}$ and $1 \leq n \leq 10$. Furthermore, when the test starts and in between each trial there is a random delay, such that the user cannot predict the next trial immediately after the previous one.

Pictures of the test

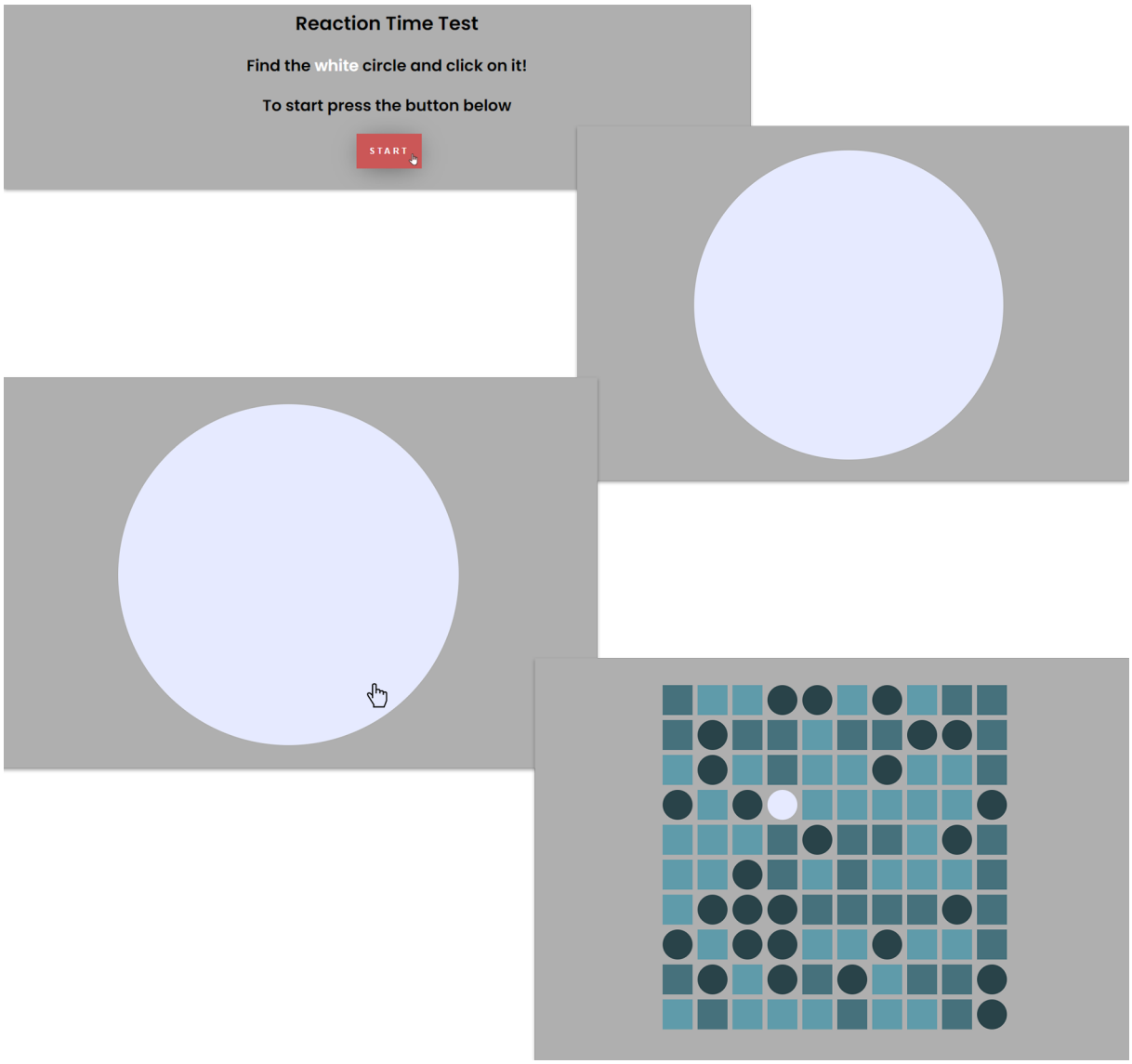

Figure 1

Results

In our experiment we had six participants who tried the test once. In the chart below (Figure 2) we visualize their individual mean/average time in milliseconds is shown and the deviation from each trial.

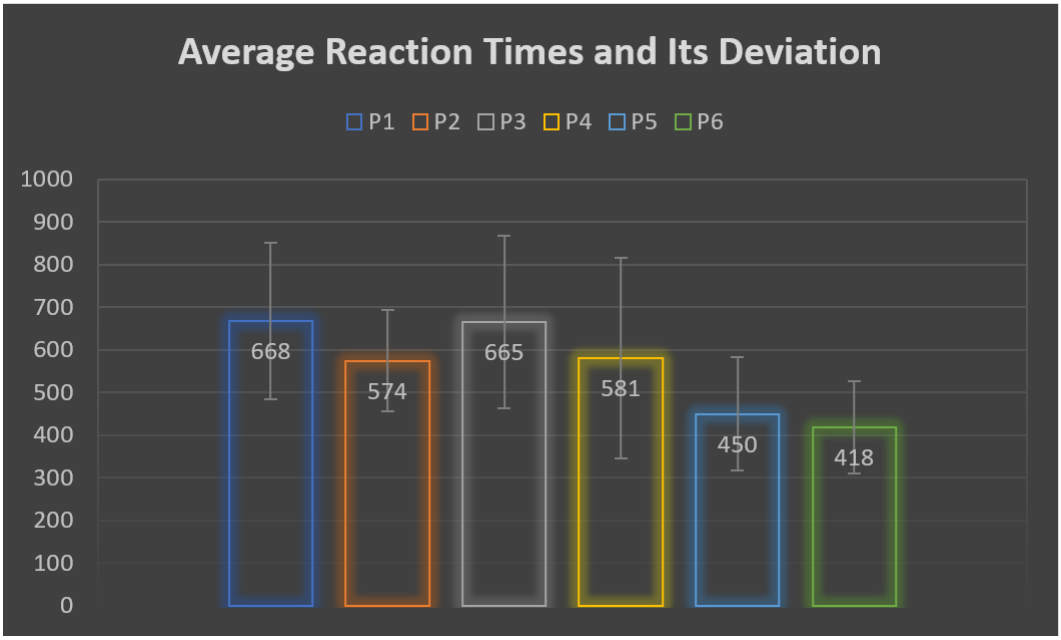

Figure 2

Additionally, the following chart shows the individual trials reaction times

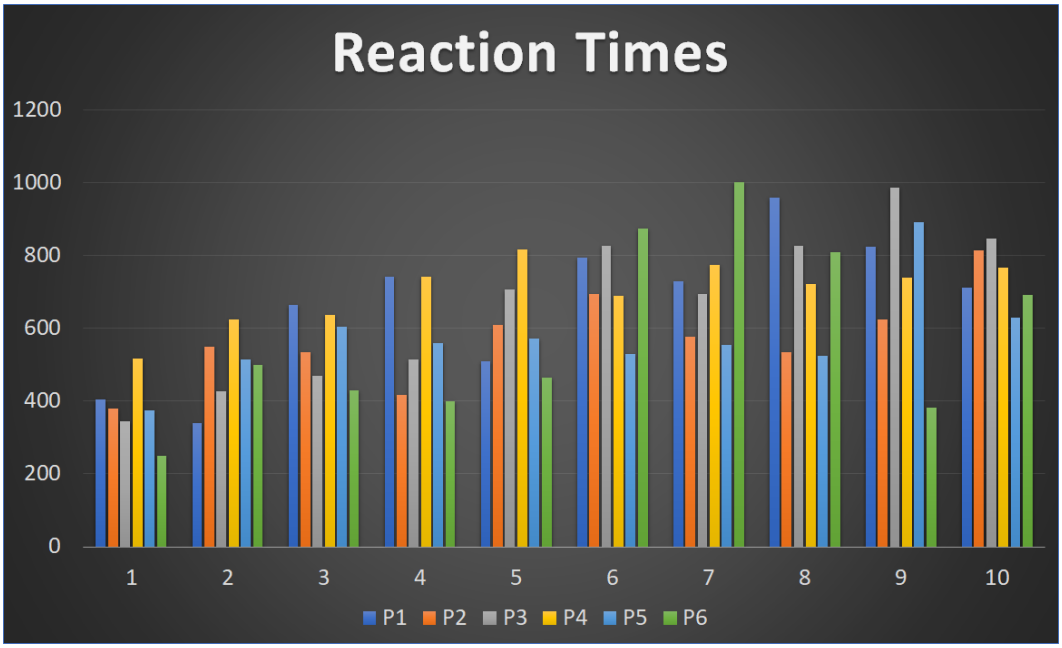

Figure 3

We see that there is a clear tendency for longer reaction times the further into the test you get. This makes perfect sense as there is more information on the screen to comprehend, as well as each shape being smaller which introduces extra time for moving the cursor as explained by Fitts's law.

Furthermore, following each person's statistics, we often see a few trials with extra low or extra high

reaction times. We found that missing a click typically adds around 200 ms to the reaction time (down to around 100 ms in the first few levels). We also had a person take the full test multiple times, where we see the first attempt is typically pretty sporadic, but before the second attempt they create a strategy which not only lowers the mean reaction time, but also lowers the standard deviation since the same strategy is used in every trial as opposed to improvising a strategy as the test goes on.

Lastly, we had a couple of people take the test on their phone, which generally didnt do much in terms of the mean reaction time, but the standard deviation seemed quite a bit lower in our test cases.

Source code

Source code of the project is available here.
In order to start the test simply locate to our page here.