# Introduction

Goal of this experiment is to detect whether there is a difference in the speed with which the users can press keys on a keyboard when given either attentive or pre-attentive tasks. This experiment also should reveal if input speed varies if there are other distracting things or not.

Our first Hypothesis states that Subjects have faster reactions to pre-attentive stimuli than to attentive. Our second Hypothesis is that distraction makes reaction to both attentive and pre-attentive stimuli slower than without.

# Experimental setup

## Factors

The experiment is structured in 4 sections. There is a section with attentive stimuli with distraction (AD), one without distraction (AN) and a section with pre-attentive stimuli with distraction (PD) and one without (PN). The sections of the experiment are pseudo-randomized with a balanced latin square.

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| --- | --- | --- | --- | --- |
|  | **Conditions** | | | |
| **Subject 1** | AD | AN | PD | PN |
| **Subject 2** | PN | PD | AN | AD |
| **Subject 3** | AN | PN | AD | PD |
| **Subject 4** | PD | AD | PN | AN |

Attentive Stimuli: words of objects that normally fly or not -> up if can fly, down if not

Pre-attentive Stimuli: Arrow pointing up or down -> up if up, down if down

Distraction: many arrows in background

## Variables

### Dependent Variables

* Count of correct reactions per ten repetitions
* Reaction time of Subjects in milliseconds

### Controlled Variables

* All use the same keyboard (USB Keyboard)
* All tests in same room (quiet room)

### Independent Variables

* Motivation of Subjects cannot be controlled
* Concentration of Subjects cannot be controlled

# Subjects

All four Subjects of the experiment are students between x and x of age. Two of them are female, two male. All four subjects are media informatics students. As Hornbæk stated in his text „Some Whys and Hows of Experiments in HCI” students can be used as subjects in experiments because “they have stronger cognitive skills, have developed less strong attitudes and are more likely to follow authority” (Hornbæk, S.27, 2011). Media informatics students are familiar with the keyboard setup and can (mostly) type good. This may influence the results because other people may be not so familiar and therefore type slower but as we want to detect whether there is a difference in the speed with stimuli and not typing speed in general and the keys are given beforehand this is acceptable.

# Preliminary Results

## Walkthrough

First we explained the procedure to the subject. If there are no questions we started the application which starts with a concrete explanation. When space is pressed, the actual experiment starts. The subject must press either the “Arrow Key Up” or the “Arrow Key Down”. After each key press the next stimuli is shown. If the Experiment is finished there is a corresponding message on screen.