# Mappings, Seven Stages of Action, and Levels of Design

**Due:** Monday, Nov. 4, 2019, **9:00 am**

## Description

In this assignment, you will learn how

1. natural mappings and forcing functions can help the user interact with a given interface, by identifying instances of them on your computing device,

2. to apply the Seven Stages of Action model to identify potential gulfs in an interaction, and

3. the Three Levels of Design can influence our perception of interfaces.

## Tasks

For the following tasks, please provide your solution in the submission format attached with this document.

**1. Identify instances of *natural mappings* and *forcing functions***

In the lab, you identified instances of constraints from everyday life. Now you will identify **one instance** for each of the following design principles on a *computing device* (laptop, smartphone, smartwatch, etc.):

a. Natural mappings with **spatial** analogies

b. Natural mappings with **perceptual** analogies

c. Natural mappings with **cultural** analogies

d. Forcing function

For each instance, briefly describe how each mapping or forcing function helps the user with her task. For the forcing function, you do not have to determine its type.

**Note:** You can identify instances from either the native interface offered by the operating system, the interface of any application on the computing device, or the computing device itself, i.e., the hardware. You can take these instances from different sources (applications, operating systems or devices). All perceptual analogies are also spatial analogies, but not all spatial analogies are perceptual analogies.

**2. Apply the Seven Stages of Action model to the task from A02**

In the previous assignment, you evaluated a home appliance by asking two users to perform a difficult task with it. Now, based on the observations you made through video(s) and hand-written notes, identify the different stages from the *Seven Stages of Action* model for the task users had the most difficulty with. In addition, also identify **one potential gulf** and indicate the stages between which this gulf occurs.

**Note:** You can redo the user observation with additional users or with a different home appliance if necessary.

### 3. Identify the level of processing of the home appliance's design

For the *class* of home appliance you used for task 2, identify three examples whose design is more closely associated with each of the **three levels of processing.** For this, watch the videos 4.1. and 4.1.1. E.g., if your home appliance is an alarm clock, find one example of an alarm clock that invokes primarily a visceral response, one that invokes a behavioral response, and one that invokes a reflective response.

**Note:** Since an appliance typically belongs to several levels, indicate the aspect(s) of the design that invokes the specified level of processing. You can use online shopping websites, e.g., Amazon and eBay, to find appliances. If the class of your home appliance is too specific, e.g., an asthma inhaler, then you can broaden the scope to, e.g., medical appliances.

## Deliverables

Successful submission for this assignment includes a presentation **as well as** a report.

### Presentation

Please prepare a presentation as a Keynote or PowerPoint file (*.key, *.pptx) with 16:9 widescreen aspect ratio with the following details:

| Step | What? | Time |
|:---:|---|:---:|
| 1 | (Task 2) Show a video of the task you used, describe the formulation of the Seven Stages, and then describe the gulf that occurred. | 2–3 min. |
| 2 | (Task 3) Using image(s) and/or video(s), justify how the three home appliances' design conform to the three levels of processing. | 1–2 min. |

Total: < 5 min.

A few groups will be asked to present their solution during the next lab (Nov. 4, 2019). Note that the presentation will not be graded—it helps you practice your presentation skills and facilitate in-class discussion. Name your file **A03-presentation-GXX**, where XX indicates your group number. Please make sure all videos are included in your presentation. If one or more videos are too long and you do not want to present them, then add them to the end of the presentation.

### Report

Prepare the solution as a 5–6 page PDF document in the submission format (see **Submission Format**). Name your file **A03-report-GXX.pdf**, where XX indicates your group number.

Submit the two files (presentation, report) to RWTHmoodle.

- Submissions handed in after the deadline will be graded with 5.0.
- Submissions that exceed the provided page limit will lose points (see Submission Format).

Chair for Computer Science 10 (Media Computing and Human-Computer Interaction)

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