

# Further Human-Computer Interaction 2021/2022

## Supervision 2

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### 1. Cognitive Dimensions of Notations analysis

Use Cognitive Dimensions to compare between two programming languages: Scratch and TypeScript. This analysis should include:

- A sketch of the interface highlighting the relevant UI elements.
  - Please note that **CDNs analysis is meaningless independent of an environment** for editing the notation, meaning you will need to choose a code editor. It is this combination of interface (code editor) + notation (TypeScript) that you can analyse.
- A brief discussion of the notational activities that users engage in (which activities are important? which activities happen often?)
- Then pick one activity (the same for both Scratch and TypeScript) and compare between the two programming languages by briefly discussing:
  - The relevance of each dimension for this activity
  - How well each of the relevant dimensions supports the activity
  - Any trade-offs

You should also discuss why it is that you think the designers made these design choices.

### 2. Cognitive Dimensions of Notations design intervention

Propose a way in which the design of one of the programming languages above might be modified that would have an effect on one of the Cognitive Dimensions you discussed above for the selected activity. Consider any trade-offs that might result and discuss whether the proposed modification changes other Cognitive Dimensions for that activity or for other activities.

### 3. Evaluation

Describe how you would carry out an investigation to evaluate the effects predicted in Question 2. Design an experiment and plan the analysis of the results. Your study could apply hypothesis-testing statistical methods, qualitative analysis of think-aloud protocols, questionnaire methods, or other techniques.

As a guidance, your experimental design should contain at least the following: the experimental procedure/protocol, participant recruitment, experimental tasks, how you will address the threats to internal and external validity of your experiment, what data will be gathered and how it will be analysed.

How would you classify this method using the distinctions between formative/summative, analytical/empirical, and quantitative/qualitative methods?

#### 4. **Designing different systems**

Give a 10-minute presentation on differences and similarities between designing a professional sound editor and designing a fitness app. You can start by differentiating between which kind of system (as listed in the lecture titles) best describes each application, or you can use one of the theories discussed in the course to compare between them. Your presentation should also include a brief discussion of the context of use and purpose of the two applications and what the framework that you chose has to say about these, and what formative/summative research methods would work best for each case.