

Supervision 2 - FHCI 2017/2018

1. Cognitive Dimensions of Notations

Use Cognitive Dimensions to compare between two programming languages: Scratch (<https://scratch.mit.edu/>) and TypeScript (<https://www.typescriptlang.org/>).

This analysis should include a discussion of the notations, interfaces, activities, the following dimensions: Viscosity, Secondary Notation, Diffuseness, Premature Commitment and Abstraction, as well as any trade-offs. You should also discuss why it is that you think the designers made these choices.

You can find a short description for each of the Cognitive Dimensions in the previous Part II [HCI lecture notes, page 29-30](#).

2. (More) Cognitive Dimensions of Notations

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

3. Evaluation

Describe how you would carry out an investigation to evaluate the effects predicted in Exercise 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, or other techniques.

As a guidance, your experimental design should contain discussion of 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 your investigation using the following distinctions: qualitative / quantitative, empirical / analytical, and summative / formative?

4. Exam question

2016 Paper 7 Question 9: <http://www.cl.cam.ac.uk/teaching/exams/pastpapers/y2016p7q9.pdf>