

10 Further Human–Computer Interaction (afb21)

Imagine that you have been engaged as an HCI consultant, by the manufacturer of this dual-function remote control car / MP3 player.



To save costs, they propose to stop shipping the remote control, remove the MP3 functionality, and make software modifications so that the six control panel buttons can be used to program a sequence of car movements. To further save costs, only the internal programming will be changed — the labels on the buttons (as in the inset) will not be changed.

- (a) Describe the general approach that you propose, to repurpose the six button control panel as a simple programming interface. [2 marks]
- (b) Explain the implications of changing direct manipulation controls into programming commands, from the perspective of the Attention Investment model of abstraction use. [2 marks]
- (c) Make an initial evaluation of the usability of your programming interface, by applying the Cognitive Dimensions of Notations to the resulting system. Choose three relevant cognitive dimensions, and explain the design issues and/or opportunities arising from each of them. [6 marks]
- (d) Describe the new interpretations that you propose for each of the symbols on the control panel, and explain why these are appropriate in terms of principles of visual correspondence. Do this for each of the six symbols from left to right. [6 marks]
- (e) Describe a qualitative and a quantitative approach to summative evaluation of this redesign. Which approach would be most useful? [4 marks]