

8 Human–Computer Interaction (AFB)

Imagine you have been commissioned to design the user interface for a head-up display (e.g. based on Google Project Glass) that can be used while riding a bicycle, as a reminder of appointments around Cambridge.

(a) In order to be safe while riding, the visual design of appointment reminders and instructions should be as simple as possible. Describe three specific ways this can be achieved, using formal elements of visual design. [6 marks]

(b) Consider the possibility that users might wish to modify their appointment schedules while riding. Choose three different Cognitive Dimensions of Notations, and discuss their implications. [6 marks]

(c) Describe ways that features of the bicycle itself might form the basis for

(i) a tangible user interface; and

(ii) an augmented reality interface

to this system. For each of these, explain what sensor processing would be involved.

[4 marks]

(d) How might these two alternative interfaces be compared experimentally? Describe the structure of the experimental design and procedure for analysis of the results. [4 marks]