Solutions

Each answer shows the steps, then the **result**.

2.1 Any two, each with what they want:

- members: easy, private collection at any hour
- staff: clear tasks and fewer wasted trips; managers: more loans at a fair cost; the council: a fair service in every area

2.2

- (i) **A1 computer fundamentals** (an input device)
- (ii) **A2 networks**
- (iii) **A3 databases**

2.3

- a code is made invalid once used
- so a photographed or copied code cannot open the door again

3.1 D

- discuss needs a balanced review and a conclusion

3.2 B

- the locker can check codes without the 4G link

3.3 B

- it names what is encrypted in the case and from whom

3.4

(a)

- the model learns patterns from the data it is given
- with few examples from quieter branches, its predictions for them are less accurate
- so fewer of the right books are moved there and those members wait longer

(b)

- advantage: the cloud provider handles backups, uptime and scaling; so the library needs no server room or staff to run one
- disadvantage: the system depends on internet access, and personal data is held by a third party; so a link failure or a weak contract puts loans or privacy at risk

(c)

- for: a card is familiar and works for members without a smartphone
- against: a lost or stolen card would open any locker reserved by that member
- a fix: require a PIN with the card
- conclusion, e.g. accept the card **with a PIN**
- reason: members without phones are included, and a card alone is not enough to open a locker