Homework 4: Input devices

1. Barcode readers or scanners are widely used throughout the world.

(a) Give **two** uses of barcodes other than on supermarket products. [2]

# To open a link to a website.

A ticket for a ticketless concert.

# (b) For each of the situations below, state the most suitable input device. You may only use each device once.

|  |  |  |
| --- | --- | --- |
| **Digital camera** | **Barcode scanner** | **RFID enabled device** |

# (i) Anti-theft detection and identification of small, high-value items [1]

RFID enabled device

# (ii) Identification and recognition of vehicle number plates at a toll crossing [1]

Digital camera

# (iii) Validating tickets for admission to an event [1]

Barcode scanner

2. A taxi company is considering issuing all its drivers with business cards which would include a QR code displayed on the back of it.

(a) What might the taxi company do with the QR code? [1]

Link it with the taxi company’s website so customers can request taxis or make inquiries.

(b) How would the recipient of a business card use the QR code? [2]

By using a phone for example, which most mobile phones nowadays have barcode scanners to scan the QR code allowing the recipient to access the QR code’s content.

(c) Give **one** advantage of the use of QR codes to the company owner. [1]

It is easy to use, most people know how to aim a camera at a code, fewer people know how to type a link into a browser. This helps with advertisement and profits since more people can access and request taxis easier.

3. Give three DIFFERENT applications that use keyboards or keypads.

In each case, explain why the keyboard or keypad is used. [6]

One example is for people who have handwriting issues. In examinations, some people who are naturally disadvantages like someone who is dyslexic might find it a lot harder to write than type. Using a keyboard allows them to type out words so that the letters are accurate and not a made up letter that looks like a real letter to the person who wrote it, but is actually fake since their dyslexia is making them read it wrong.

Another application is for locked doors. You will have to use a keypad. This is because if you want to have a room restricted to staff only for example, in order to keep trespassers and outside people out, you can have a keypad that only staff know the password to since this filters out who is eligible to enter or not.

Another application is credit card payment. At shop registers if you want to pay by card for example, the cashier might get you to swipe a card, but they might need extra confirmation that the card actually belongs to you. So using a keypad allows you to type in the card’s password to prove that it is actually your card and not a stolen one.

4. Name a suitable sensor which could be used in each of the following applications:

(a) Opening and closing of automatic doors at a hotel as a guest approaches

(b) Monitoring the air pollution at the perimeter of an airport

(c) Checking whether clothes are dry in an automatic drier

(d) Detect a person entering a room and automatically turn on the lights

(e) Weigh fruit at the check-point in a supermarket

|  |  |
| --- | --- |
| **Application** | **Suitable sensor** |
| **a** | Infrared |
| **b** | Gas |
| **c** | Humidity/moisture |
| **d** | Temperature / infrared both might work |
| **e** | Pressure |

[5]

[Total 20 Marks]