# Barcode Scanner(Reader)

1) Barcode Scanners (Readers)

➔ Barcodes are a series of dark and light parallel lines that represent numbers from 0 to 9

➔ Barcode numbers are looked up in the stock database, and item details are sent back to

checkout

➔ Scanning allows automatic stock control and finding new values of stock items

## Benefits:

➔ Benefits of using barcodes for the store management include easy and fast updates, automatic

stock control, and time-saving.

➔ Benefits of using barcodes for customers include faster checkout queues, less errors in

charging, itemized bills, cost savings visibility, and better track keeping of "sell by” dates.

## How is a barcode scanned?

1. A barcode scanner emits a red laser on LED in the barcode.

2. The black and white parts of the barcode reflect light differently (The black parts reflect little to

no light, whereas the light parts reflect almost all of it).

3. White is 0 and Black is 1.

4. This reflected light is captured by the sensors in the barcode scanner.

5. A pattern is generated and it is converted into digital data.

# QR Code:

➔ QR codes are a type of barcode made up of a matrix of filled-in dark squares on a light

background

➔ They hold considerably more information than traditional barcodes

➔ QR codes are more complex due to the increased data capacity and the use of small squares,

known as pixels

➔ The three large squares in three corners of the QR code are for alignment, and the remaining

corner is for the camera angle and size

➔ QR codes are used for advertising products, accessing websites, phone numbers, and storing

boarding passes electronically at airports and train stations

➔ QR codes are being updated to frame QR codes that include advertising logos, but the software

needed for this isn't free

Advantages of QR codes include:

↳ ability to hold more information

↳ fewer errors

↳ easy and convenient to scan

↳ easy transmission as images

↳ can be encrypted

Disadvantages of QR codes include:

↳ There is more than one QR code format available

↳ Malicious codes can be sent through QR codes

## How are QR codes scanned?

1. Point a phone camera towards the QR code

2. The app will process the image taken by the camera by converting it into a readable format.

3. White squares reflect more light while black squares reflect less light

4. Each pixel/small square will be converted to a binary value

5. Data will be read and necessary action will be taken by the phone (e.g. Redirects to a

website, phone app will be opened if a telephone number was within the QR code