

**Dictionary of Terms**

**Technical Term**  
*Network Switch*

A network switch or switched hub connects network devices (including other switches) together within a LAN. The switch accepts packets of data from the devices connected to it and passes each packet onto the appropriate segment of the network.

**Related Terms**  
Duplex  
Fibre Optic  
LAN  
Network  
Port  
Router

**Further Details**

In order to work, a switch must keep a list of network addresses for each device on the network.

Each packet of data includes information about its source and destination. When the packet is received at the switch, the switch will identify the destination for that packet and forward it to the appropriate port which will either be connected directly to the destination or to another switch on the way to the destination.

The animation shows packets of data moving through a network that is made up of four computers (red, yellow, blue and green) via switches. The packets are colour coded to show their source and destination.

In order to simplify the animation, data is shown moving in one direction only at a time through a particular cable (half-duplex). In a modern network the cabling would allow data to move in both directions at the same time (duplex).

The red computer is sending data to the blue, green and yellow computers while, at the same time, the yellow computer is sending data to the red computer.

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**Dictionary of Terms**

**Technical Term**  
*Record*

A record in a database file is made up of a group of fields, each of which stores data about one occurrence of the thing that the file is holding data about.

**Related Terms**  
Data  
Database  
Field  
Relational  
Database  
Table

**Further Details**

The records in a file are made up of fields. Each field contains one item of data. In a Customers File each field in a customer record would store one item of data about the customer. One field might hold the customer's surname, another their telephone number and so on, but the data in each field of one record will all relate to the same particular customer.

Each field is given a fieldname that describes the data that it holds. We say that the customer record has a surname field and a telephoneNumber field

In a relational database, where data is stored in tables, a record is equivalent to one row of the table.

category	department
totalPayToDate	sellingPrice
dateDueBack	numberInStock
payRate	payrollNumber
description	ISBN
stockNumber	libraryNumber
totalTaxToDate	publisher
onLoan	author
DOB	minimumQuantity
manufacturer	taxCode
employeeName	datePublished
reorderQuantity	

Percentage correct  
**0%**

Drag the 7 fields for the stock file from the table on the left to this area.

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**Technical Term**  
*Actuator*

An actuator is any device that can convert data from a computer into movement.

**Related Terms**

- Binary
- Hard Disk Drive
- Random Access

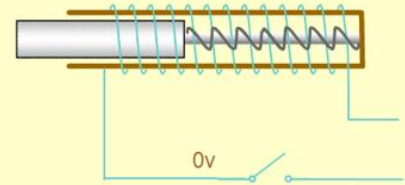
**Further Details**

Actuators are used in situations where a computer needs to operate a mechanical device physically. One example would be moving the read-write head of a disk drive (illustrated under the entry for Random Access).

There are a number of different methods of converting electrical signals into movement. Many involve electric motors.

Perhaps the simplest type of actuator to understand is based on a solenoid, as shown in the illustration.

A solenoid actuator, like the binary output from a computer, has two states or positions. Movement of the solenoid arm can be used to control simple valves. It can also be used to control electrical switches, allowing the computer system to turn devices such as heaters, fans etc. on and off.



A computer controlled switch would be used to operate the solenoid actuator.

In this animation, click the switch to change its state and see the solenoid operate.