

Multiplexing essay examples

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Multiplexing is a method of transmitting multiple analog or digital data signals by combining them into one signal using a single physical medium. The single medium relays the data in high-speed.

A multiplexer is the device that is used to combine the multiple low-speed signals and puts them in the high-speed channel. Another device called a DEMultiplexer then separates the high-speed signal and extracts the original channels on the receiver side.

The reason for multiplexing is mainly to share the high-speed channel which is usually expensive but faster and very efficient. Multiplexing originated with telegraphs and is commonly used in telecommunications for example several telephone calls being carried by one wire. There are several types of multiplexing;

- Frequency-division multiplexing- this is whereby the frequency band on the high-speed channel is divided into several narrow-band channels to allow relay of the different low-speed channels.

- Time-division multiplexing- each low-speed channel is allocated the whole bandwidth in turn and relayed successively. The data does not necessarily have to have data to transmit.

- Statistical multiplexing- this is similar to time-division but transmit channels that only have data in the high-speed. Statistical multiplexing is a better performer than time-division because it doesn't transmit empty channels.

Multiplexing helps to reduce the cost of transmitting data because it increases the rate of data flow in the high-speed channel as many low-speed channels are combined and transmitted through a shared medium. This means that for a particular application that is over a particular distance, the charge per every kbps goes down with a rise in the rate of data of the facility

that transmits. This not only reduces cost but also increases its efficiency. It declines the cost of transmission of data per kilobytes per second.

References

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