Sultan Moulay Slimane University

Higher School of Technology. Beni Mellal

English Module(First Year/Fall Semester

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Computer Network

A **computer network** or **data network** is a [telecommunications network](https://en.wikipedia.org/wiki/Telecommunications_network) which allows [computers](https://en.wikipedia.org/wiki/Computer) to [exchange data](https://en.wikipedia.org/wiki/Data_transmission). In computer networks, networked computing devices exchange data with each other using a [data link](https://en.wikipedia.org/wiki/Data_link). The connections between nodes are established using either [cable media](https://en.wikipedia.org/wiki/Transmission_line) or [wireless media](https://en.wikipedia.org/wiki/Wireless_network). The best-known computer network is the [Internet](https://en.wikipedia.org/wiki/Internet).

Network computer devices that originate, route and terminate the data are called [network nodes](https://en.wikipedia.org/wiki/Node_%28networking%29). Nodes can include [hosts](https://en.wikipedia.org/wiki/Host_%28network%29) such as [personal computers](https://en.wikipedia.org/wiki/Personal_computer), [phones](https://en.wikipedia.org/wiki/Phone), [servers](https://en.wikipedia.org/wiki/Server_%28computing%29) as well as [networking hardware](https://en.wikipedia.org/wiki/Networking_hardware). Two such devices can be said to be networked together when one device is able to exchange information with the other device, whether or not they have a direct connection to each other.

Computer networks differ in the [transmission medium](https://en.wikipedia.org/wiki/Transmission_medium) used to carry their signals, [communications protocols](https://en.wikipedia.org/wiki/Communications_protocol) to organize network traffic, the network's size, [topology](https://en.wikipedia.org/wiki/Network_topology) and organizational intent.

Computer networks support an enormous number of [applications](https://en.wikipedia.org/wiki/Application_software) and [services](https://en.wikipedia.org/wiki/Network_service) such as access to the [World Wide Web](https://en.wikipedia.org/wiki/World_Wide_Web), [digital video](https://en.wikipedia.org/wiki/Digital_video), [digital audio](https://en.wikipedia.org/wiki/Digital_audio), shared use of [application and storage servers](https://en.wikipedia.org/wiki/File_server), [printers](https://en.wikipedia.org/wiki/Printing), and [fax machines](https://en.wikipedia.org/wiki/Fax), and use of [email](https://en.wikipedia.org/wiki/Email) and [instant messaging](https://en.wikipedia.org/wiki/Instant_messaging) applications as well as many others. In most cases, application-specific communications protocols are [layered](https://en.wikipedia.org/wiki/Communications_protocol#Layering) (i.e. carried as [payload](https://en.wikipedia.org/wiki/Payload_%28computing%29)) over other more general communications protocols.

**Computer network glossary**

\*In [communication networks](https://en.wikipedia.org/wiki/Communication_network), a **node** ([Latin](https://en.wikipedia.org/wiki/Latin) *nodus*, ‘knot’) is either a connection point, a redistribution point (e.g. [data communications equipment](https://en.wikipedia.org/wiki/Data_communications_equipment)), or a [communication endpoint](https://en.wikipedia.org/wiki/Communication_endpoint) (e.g. [data terminal equipment](https://en.wikipedia.org/wiki/Data_terminal_equipment)).

\*A **network host** is a [computer](https://en.wikipedia.org/wiki/Computer) or other device connected to a [computer network](https://en.wikipedia.org/wiki/Computer_network). A network host may offer information resources, services, and applications to users or other [nodes](https://en.wikipedia.org/wiki/Node_%28networking%29) on the network.

\*In [computing](https://en.wikipedia.org/wiki/Computing), a **server** is a [computer program](https://en.wikipedia.org/wiki/Computer_program) or a [device](https://en.wikipedia.org/wiki/Computer) that provides functionality for other programs or devices, called "[clients](https://en.wikipedia.org/wiki/Client_%28computing%29)". This [architecture](https://en.wikipedia.org/wiki/Systems_architecture) is called the [client–server model](https://en.wikipedia.org/wiki/Client%E2%80%93server_model), and a single overall computation is distributed across multiple processes or devices.[[1]](https://en.wikipedia.org/wiki/Server_%28computing%29#cite_note-1) Servers can provide various functionalities, often called "services", such as sharing data or [resources](https://en.wikipedia.org/wiki/System_resource) among multiple clients, or performing computation for a client. A single server can serve multiple clients, and a single client can use multiple servers. A client process may run on the same device or may connect over a network to a server on a different device. Typical servers are [database servers](https://en.wikipedia.org/wiki/Database_server), [file servers](https://en.wikipedia.org/wiki/File_server), [mail servers](https://en.wikipedia.org/wiki/Mail_server), [print servers](https://en.wikipedia.org/wiki/Print_server), [web servers](https://en.wikipedia.org/wiki/Web_server), [game servers](https://en.wikipedia.org/wiki/Game_server), and [application servers](https://en.wikipedia.org/wiki/Application_server).

**\*Networking hardware**, also known as **network equipment** or **computer networking devices**, are physical devices which are required for communication and interaction between devices on a [computer network](https://en.wikipedia.org/wiki/Computer_network). Specifically, they mediate [data](https://en.wikipedia.org/wiki/Data) in a computer network.[[1]](https://en.wikipedia.org/wiki/Networking_hardware#cite_note-IEEE_802.3-2012_Clause_9.1-1) Units which are the last receiver or generate data are called [hosts](https://en.wikipedia.org/wiki/Host_%28network%29) or [data terminal equipment](https://en.wikipedia.org/wiki/Data_terminal_equipment).

\*In [telecommunications](https://en.wikipedia.org/wiki/Telecommunications), a **communication protocol** is a system of rules that allow two or more entities of a [communications system](https://en.wikipedia.org/wiki/Communications_system) to transmit [information](https://en.wikipedia.org/wiki/Information) via any kind of variation of a [physical quantity](https://en.wikipedia.org/wiki/Physical_quantity)

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**The Difference Between Finance and Accounting**

Finance and Accounting are two separate disciples that often are lumped together (as we obviously have done). At a high level, Finance is the science of planning the distribution of a business’ assets. Accounting is the art of the recording and reporting financial transactions. People tend to group Finance and Accounting because both functions deal with the administration of a business’ assets.

Those who work in the financial department of a business are concerned with planning the distribution of the business’ assets. This includes the coordination of capital investments and debt backed investments for the purpose of improving the value of the business. Those in Finance also plan the exit strategy for the investors of the business, which is the way in which those that invest in the business receive their financial reward. The financial goals and objectives of the business are designed by the business’ Chief Financial Officer, who is supported by people focused on Financial Analysis, Financial Management, Budgeting, Purchasing, and Accounting.

Those who work in the Accounting function of a business are concerned with tracking and reporting the financial transactions of a business. Those in the Accounting field are responsible for managing the general ledger, cash flow management, collections, recognizing revenue, analyzing profitability, reporting earnings, managing debt, and—of course—paying taxes. Accountants research and report the financial transactions and health of the business using a standard set of rules and principles, known as the Generally Accepted Accounting Principles (GAAP), as well as Section 446 of the Internal Revenue Code. Jobs in the Accounting function include Financial Reporting Accountants, Auditors, Bookkeepers, Accounts Receivable Clerks, Accounts Payable Clerks, Controllers, Treasurers, and Tax Accountants. Typically, the entire Accounting organization will report into the Chief Financial Officer.

Broadly speaking, Finance revolves around planning future financial transactions while Accounting revolves around reporting past financial transactions. While these are two separate functions that require different skill sets, they do both revolve around the management of assets; therefore, they are grouped together more often than not.

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# Types of bank accounts

When you go to a bank to open a new account, you will have a variety of account types and features to choose from. Should you choose the basic checking option or an account that earns interest? Do you want the convenience of a bundled checking and savings account or the higher returns of a money market account?

To make these decisions, it’s helpful to first understand the differences between the most common bank account types. Here are some definitions to help you navigate your banking needs:

* **Checking account:** A checking account offers easy access to your money for your daily transactional needs and helps keep your cash secure. Customers can use a debit card or checks to make purchases or pay bills. Accounts may have different options or packages to help waive certain monthly service fees. To determine the most economical choice, compare the benefits of different checking packages with the services you actually need.
* **Savings account:** A savings account allows you to accumulate interest on funds you’ve saved for future needs. Interest rates can be compounded on a daily, weekly, monthly, or annual basis. Savings accounts vary by monthly service fees, interest rates, method used to calculate interest, and minimum opening deposit. Understanding the account’s terms and benefits will allow for a more informed decision on the account best suited for your needs.
* **Certificate of Deposit (CD):** Certificates of deposit, or CDs, allow you to invest your money at a set interest rate for a pre-set period of time. CDs often have higher interest rates than traditional savings accounts because the money you deposit is tied up for the life of the certificate – which can range from a few months to several years. Be sure you do not need to draw on those funds before you open a CD, as early withdrawals may have financial penalties.
* **Money market account:** Money market accounts are similar to savings accounts, but they require you to maintain a higher balance to avoid a monthly fee. Where savings accounts usually have a fixed interest rate, these accounts have rates that vary regularly based on money markets. Money market accounts can have tiered interest rates, providing more favorable rates based on higher balances. Some money market accounts also allow you to write checks against your funds, but on a more limited basis.
* **Individual Retirement Accounts (IRAs):** IRAs, or individual retirement accounts, allow you to save independently for your retirement. These plans are useful if your employer doesn’t offer retirement benefits or you want to save more than your employer-sponsored plan allows. These accounts come in two types: the traditional IRA and Roth IRA. The Roth IRA is popular because the funds can be withdrawn tax-free in many situations. Others prefer traditional IRAs because these contributions are tax-deductible. Both accounts have contribution limits and other requirements you may need to discuss with your tax advisor before choosing your account.

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**International Trade?**

**What Is International Trade?**  
International trade is the exchange of goods and services between countries. This type of trade gives rise to a world economy, in which prices, or [supply](http://www.investopedia.com/terms/s/supply.asp) and [demand](http://www.investopedia.com/terms/d/demand.asp), affect and are affected by global events. Political change in Asia, for example, could result in an increase in the [cost of labor](http://www.investopedia.com/terms/c/cost-of-labor.asp), thereby increasing the manufacturing costs for an American sneaker company based in Malaysia, which would then result in an increase in the price that you have to pay to buy the tennis shoes at your local mall. A decrease in the cost of labor, on the other hand, would result in you having to pay less for your new shoes..

**Increased Efficiency of Trading Globally**  
Global trade allows wealthy countries to use their resources - whether labor, technology or [capital](http://www.investopedia.com/terms/c/capital.asp#axzz1n1rLWewe) - more efficiently. Because countries are endowed with different [assets](http://www.investopedia.com/terms/a/asset.asp#axzz1n1rLWewe) and natural resources (land, labor, capital and technology), some countries may produce the same good more efficiently and therefore sell it more cheaply than other countries. If a country cannot efficiently produce an item, it can obtain the item by trading with another country that can. This is known as [specialization](http://www.investopedia.com/terms/s/specialization.asp#axzz1n1rLWewe) in international trade.

Let's take a simple example. Country A and Country B both produce cotton sweaters and wine. Country A produces 10 sweaters and six bottles of wine a year while Country B produces six sweaters and 10 bottles of wine a year. Both can produce a total of 16 units. Country A, however, takes three hours to produce the 10 sweaters and two hours to produce the six bottles of wine (total of five hours). Country B, on the other hand, takes one hour to produce 10 sweaters and three hours to produce six bottles of wine (total of four hours).

But these two countries realize that they could produce more by focusing on those products with which they have a [comparative advantage](http://www.investopedia.com/terms/c/comparativeadvantage.asp). Country A then begins to produce only wine and Country B produces only cotton sweaters. Each country can now create a specialized output of 20 units per year and trade equal proportions of both products. As such, each country now has access to 20 units of both products.

We can see then that for both countries, the [opportunity cost](http://www.investopedia.com/terms/o/opportunitycost.asp) of producing both products is greater than the cost of specializing. More specifically, for each country, the opportunity cost of producing 16 units of both sweaters and wine is 20 units of both products (after trading). Specialization reduces their opportunity cost and therefore maximizes their efficiency in acquiring the goods they need. With the greater supply, the price of each product would decrease, thus giving an advantage to the end consumer as well.

Note that, in the example above, Country B could produce both wine and cotton more efficiently than Country A (less time). This is called an [absolute advantage](http://www.investopedia.com/terms/a/absoluteadvantage.asp), and Country B may have it because of a higher level of technology. However, according to the international trade theory, even if a country has an absolute advantage over another, it can still benefit from specialization.

**Other Possible Benefits of Trading Globally**   
International trade not only results in increased efficiency but also allows countries to participate in a global economy, encouraging the opportunity of [foreign direct investment](http://www.investopedia.com/terms/f/fdi.asp) (FDI), which is the amount of money that individuals invest into foreign companies and other assets. In theory, economies can therefore grow more efficiently and can more easily become competitive economic participants.

For the receiving government, FDI is a means by which foreign currency and expertise can enter the country. These raise employment levels, and, theoretically, lead to a growth in the [gross domestic product](http://www.investopedia.com/terms/g/gdp.asp). For the investor, FDI offers company expansion and growth, which means higher [revenues](http://www.investopedia.com/terms/r/revenue.asp).

**Free Trade Vs. Protectionism**  
As with other theories, there are opposing views. International trade has two contrasting views regarding the level of control placed on trade: [free trade](http://www.investopedia.com/terms/f/free_trade_area.asp) and [protectionism](http://www.investopedia.com/terms/p/protectionism.asp#axzz1n1rLWewe). [Free trade](http://www.investopedia.com/terms/f/free-trade.asp) is the simpler of the two theories: a [laissez-faire](http://www.investopedia.com/terms/l/laissezfaire.asp#axzz1n1rLWewe) approach, with no restrictions on trade. The main idea is that [supply and demand](http://www.investopedia.com/articles/economics/11/intro-supply-demand.asp) factors, operating on a global scale, will ensure that production happens efficiently. Therefore, nothing needs to be done to protect or promote trade and growth, because market forces will do so automatically.In contrast, protectionism holds that [regulation of international trade is important to ensure that markets function properly](http://www.investopedia.com/university/macroeconomics/macroeconomics11.asp). Advocates of this theory believe that market inefficiencies may hamper the benefits of international trade and they aim to guide the market accordingly. Protectionism exists in many different forms, but the most common are [tariffs](http://www.investopedia.com/terms/t/tariff.asp), [subsidies](http://www.investopedia.com/terms/s/subsidy.asp) and [quotas](http://www.investopedia.com/terms/q/quota.asp). These strategies attempt to correct any inefficiency in the international market.