Hub	Switch
hub operates on the physical layer.	A switch operates on the data link layer.
Hubs perform frame flooding that can be unicast, multicast, or broadcast.	It performs broadcast, then the unicast and multicast as needed.
Just a singular domain of collision is present in a hub.	Varied ports have separate collision domains.
Transmission mode is Half-duplex	Transmission mode is Full duplex
Hubs operates as a Layer 1 devices per the OSI model.	Network switches help you to operate at Layer 2 of the OSI model.
To connect a network of personal computers should be joined through a central hub.	Allow connecting multiple devices and ports.
Uses electrical signal orbits	Uses frame & packet
Does not offer Spanning-Tree	Multiple Spanning-Tree is possible
Collisions occur mostly in setups using hubs.	No collisions occur in a full-duplex switch.
Hub is a passive device	A switch is an active device
A network hub can’t store MAC addresses.	Switches use CAM (Content Accessible Memory) that can be accessed by ASIC (Application Specific Integrated Chips).
Not an intelligent device	Intelligent device
Its speed is up to 10 Mbps	10/100 Mbps, 1 Gbps, 10 Gbps
Does not use software	Has software for administration

Switch	Bridge
It is a device which is responsible for channeling the data that is coming into the various input ports to a particular output port which will further take the data to the desired destination.	It is basically a device which is responsible for dividing a single network into various network segments.
A switch can have a lot of ports.	A bridge can have 2 or 4 ports only.

Switch	Bridge
The switch performs the packet forwarding by using hardwares such as ASICS hence, it is hardware based.	The bridge performs the packet forwarding by using softwares so it is software based.
The switching method in case of a switch can thus be store, forward, fragment free or cut through.	The switching method in case of a bridge is store and forward.
The task of error checking is performed by a switch.	A bridge cannot perform the error checking.
A switch has buffers.	A bridge may not have a buffer.

Switch	Router
Network switches operate at layer two (Data Link Layer) of the OSI model.	Routers operate at Layer 3 (Network) of the OSI model.
Switch will not offer NAT, NetFlow and QoS services.	Router will offer NAT, NetFlow and QoS Services
Store MAC address in a lookup table and maintain an address on its own. However, Switch can learn the MAC address.	Store IP address in the routing table and maintain an address on its own.
A switch is a multi-port bridge. 24/48 ports.	Networking device 2/4/8 ports.
The speed limit for the switch is 10/100Mbps.	The speed limit is 1-10 Mbps for wireless and 100 Mbps for wired connection.
Switches can’t perform NAT	The router can perform NAT
In a LAN environment, a switch is faster than Router.	In various types of network environments (MAN/ WAN), the router works faster compares to Switch.
The switch has one broadcast domain except VLAN implemented.	In Router, every port has its own broadcast domain.
Switches work with MAC addresses as it operates within the confines of a single network.	Router operations revolve around IP Addresses.

Switches are restricted to wired network connections.	Routers can work within both wired and wireless network situations.

OSI Model	TCP/IP model
It is developed by ISO (International Standard Organization)	It is developed by ARPANET (Advanced Research Project Agency Network).
OSI model provides a clear distinction between interfaces, services, and protocols.	TCP/IP doesn't have any clear distinguishing points between services, interfaces, and protocols.
OSI refers to Open Systems Interconnection.	TCP refers to Transmission Control Protocol.
OSI uses the network layer to define routing standards and protocols.	TCP/IP uses only the Internet layer.
OSI follows a vertical approach.	TCP/IP follows a horizontal approach.
OSI model use two separate layers physical and data link to define the functionality of the bottom layers.	TCP/IP uses only one layer (link).
OSI layers have seven layers.	TCP/IP has four layers.
OSI model, the transport layer is only connection-oriented.	A layer of the TCP/IP model is both connection-oriented and connectionless.
In the OSI model, the data link layer and physical are separate layers.	In TCP, physical and data link are both combined as a single host-to-network layer.
Session and presentation layers are not a part of the TCP model.	There is no session and presentation layer in TCP model.
It is defined after the advent of the Internet.	It is defined before the advent of the internet.