DTP and VTP

DTP: Dynamic Trunking Protocol.   VTP: VLAN Trunking Protocol.
DTP: allows switches to negotiate the status of their switch ports to be either access or trunk not manually configured.
VTP: to configure VLANs on a central switch to act as a server that other switches can synchronize to so you don't have to configure VLANs on every single switch in the network.
DTP is enabled by default on all Cisco switches interface (proprietary Cisco protocol), for security purposes manual configuration is configured and DTP should be disabled on all switchports.
Command: switchport mode dynamic auto or desirable for DTP.
Desirable → tries to form a trunk with other Cisco switches if connected to a switch port with mode trunk or dynamic auto or dynamic desirable else it operates as static access (an access port that belongs to as ingle VLAN that doesn't change).
While dynamic access ports in which a server automatically assigns the VLAN depending on the MAC address of the connected device.
Auto → forms a trunk with the modes trunk and dynamic desirable only else it operates as static access port.
If a manually configured trunk interface is connected to a manually configured access interface should result in an error.
DTP will not form a trunk with arouter, PC ,..etc only access mode so must be manually configured if needed as a trunk.
On older switches desirable is default while on new auto is the default.
Command: switchport nonegotiate disables dynamic negotiation also access configured ports disable DTP frames.
Switches supporting dot1 and ISL encapsulations can use DTP to negotiate the encapsulation they will use and ISL is favored over dot1q. Default trunk encapsulation mode is: switchport trunk encapsulation negotiate.
DTP negotiation frames are sent in VLAN 1 when using ISL and in native VLAN in dot1q.

VTP is designed for large networks with many VLANs, rarely used and not recommended, versions are 1,2,3.
Older switches might only support 1 and 2 but modern are 3.
VTP modes are server (default) , client and transparent.
Servers: add, modify and delete VLANs and store the database in nvram and uses revision number on each database modification to determine the newest VLAN database version the switches will synchronize to and advertise them on trunk interfaces and VTP clients will sync their VLAN databases to it.
VTP servers are also clients that will synchronize to another VTP servers with higher revision number.
VTP clients: can't add, modify or delete VLANs, in VTP 3 only they store database in nvram and sync to the server with the highest revisoin number in their VTP domain, will advertise VLAN db and forward VTP advertisements to othe clients over their trunk ports.
Command: show VTP status.
VLAN 1 and 2 don't support the extended VLAN range.
Command: vtp domain <domain-name> to change vtp domain.
If a switch of no vtp domain receives a VTP advertisement it will automatically join its domain.
Switches in VTP transparent mode don't participate in the VTP domain or advertise its VLANs to other switches, it only forwards VTP advertisements that are in the same domain a it but not sync to them.
Command: vtp mode <mode> to set the vtp mode.
Changing vtp mode to transparent or vtp domain to unused domain will reset the revision number to 0.
Command: vtp version <version> to change the vtp version (increases the revision number).
VTP doesn't automatically assign interfaces to vlans.
To disable vtp on a switch use vtp transparent mode.
Command: vtp password <password> only switches either clients or server with matching password of the advertiser can accept the advertisements.