synchronous:-
1-you must finish the first job before moving on to the next
2- called "sync,"
3- strict
4-blocking architecture and is best for programming reactive systems
5- single-thread model
6-ex : think of a telephone conversation. While one person speaks, the other listens. When the first person finishes, the second tends to respond immediately.
7-slower and more methodical.
8- Synchronous programming is much easier to code. It's well supported among all programming languages, and as the default programming method, developers don't have to spend time learning something new that could open the door to bugs
9- tasks depend on each other, you have to know if they can run independently without interrupting each other.
appropriate for a customer-facing shopping app. Users want to buy all their items together rather than individually when checking out online.

asynchronous:-
1- execute jobs in any order or even simultaneously.
2- async
3- multithreaded model that's applied to networking and communications.
4-non-blocking architecture
5- low-code application development, which helps accelerate the process of building apps. Another example is texting
6- adaptable
7- increases throughput because multiple operations can run at the same time.
8-decreasing the lag time between when a function is called and when the value of that function is returned. Async programming translates to a faster, more seamless flow in the real world.

For example, users want their apps to run fast, but fetching data from an API takes time. In these cases, asynchronous programming helps the app screen load more quickly, improving the user experience.
9- asynchronous programs are ideal for development projects with many iterations. Asynchronous programming will keep development moving forward because steps don't have to follow a fixed sequence.
Responsive UI is a great use case for asynchronous planning. Take, for example, a shopping app.
10- programming is the multitasker, moving from one to-do to the other and alerting the system when each task is complete. Synchronous programming functions with a one-track mind

Remark:- JavaScript is an asynchronous and concurrent programming language that offers a lot of flexibility. It's single-threaded like synchronous but also non-blocking like asynchronous.

Although it's synchronous by nature, JavaScript benefits from an asynchronous process. Long-running JavaScript functions can make the user interface (UI) or server unresponsive until the function has returned