

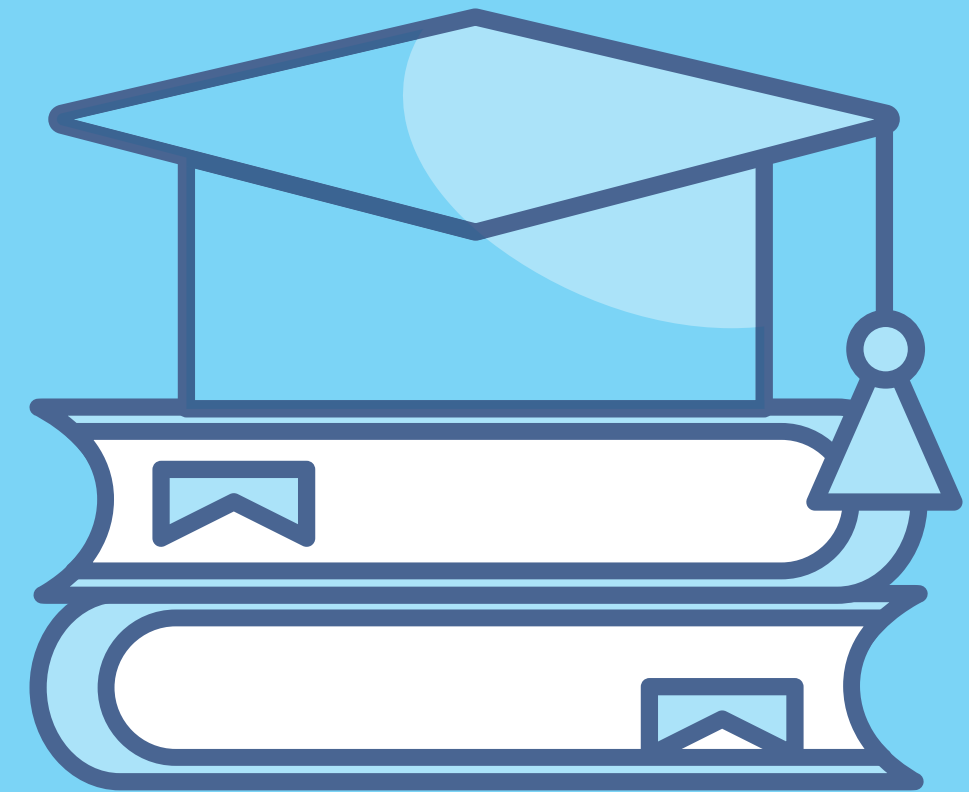


RESERVATION ACCESS PROTOCOL, TOKEN PASSING METHOD

COMPUTER NETWORK (EC602)

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ELECTRONICS & COMMUNICATION ENGINEERING



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 **Introduction** 

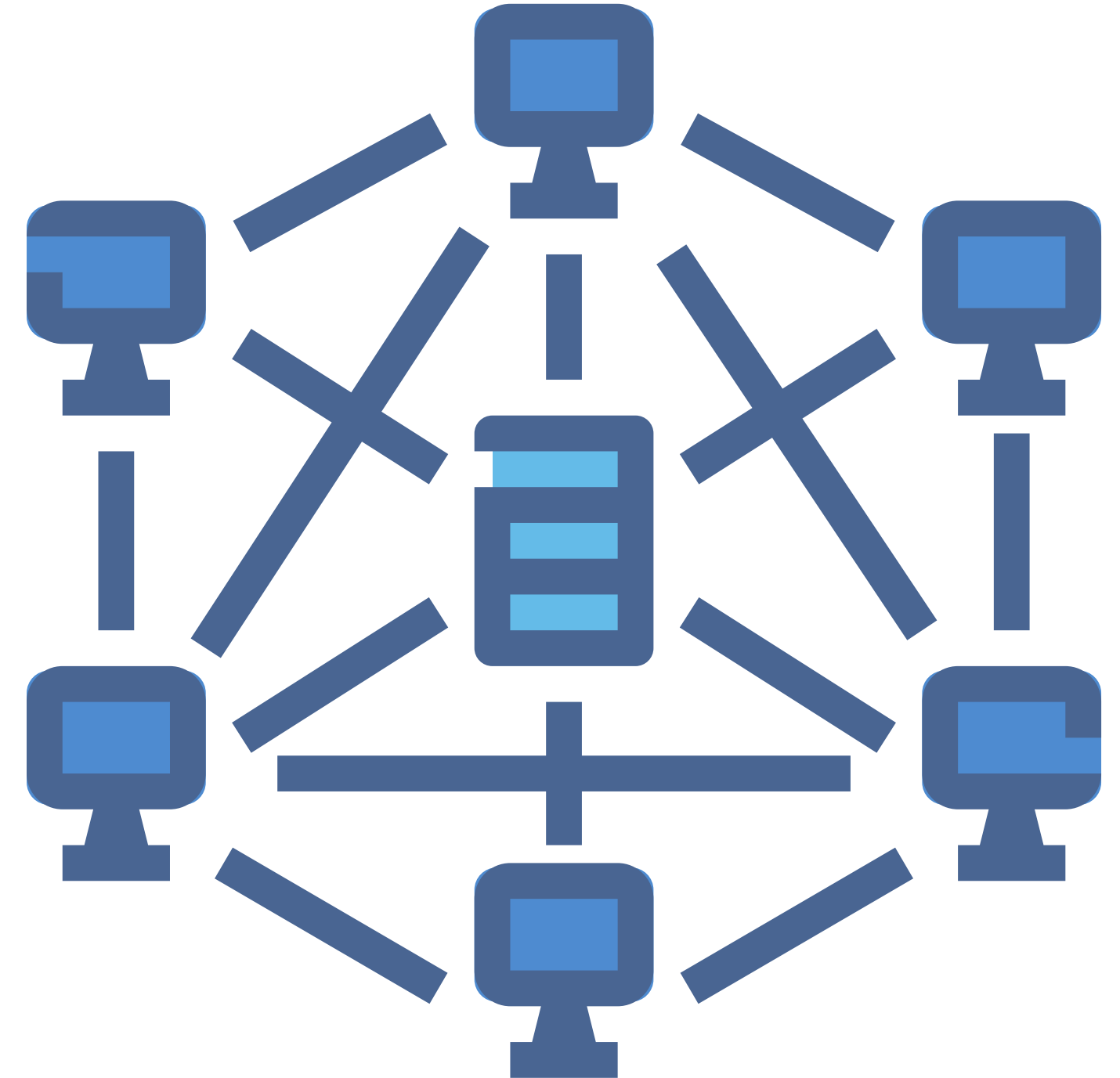
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Introduction

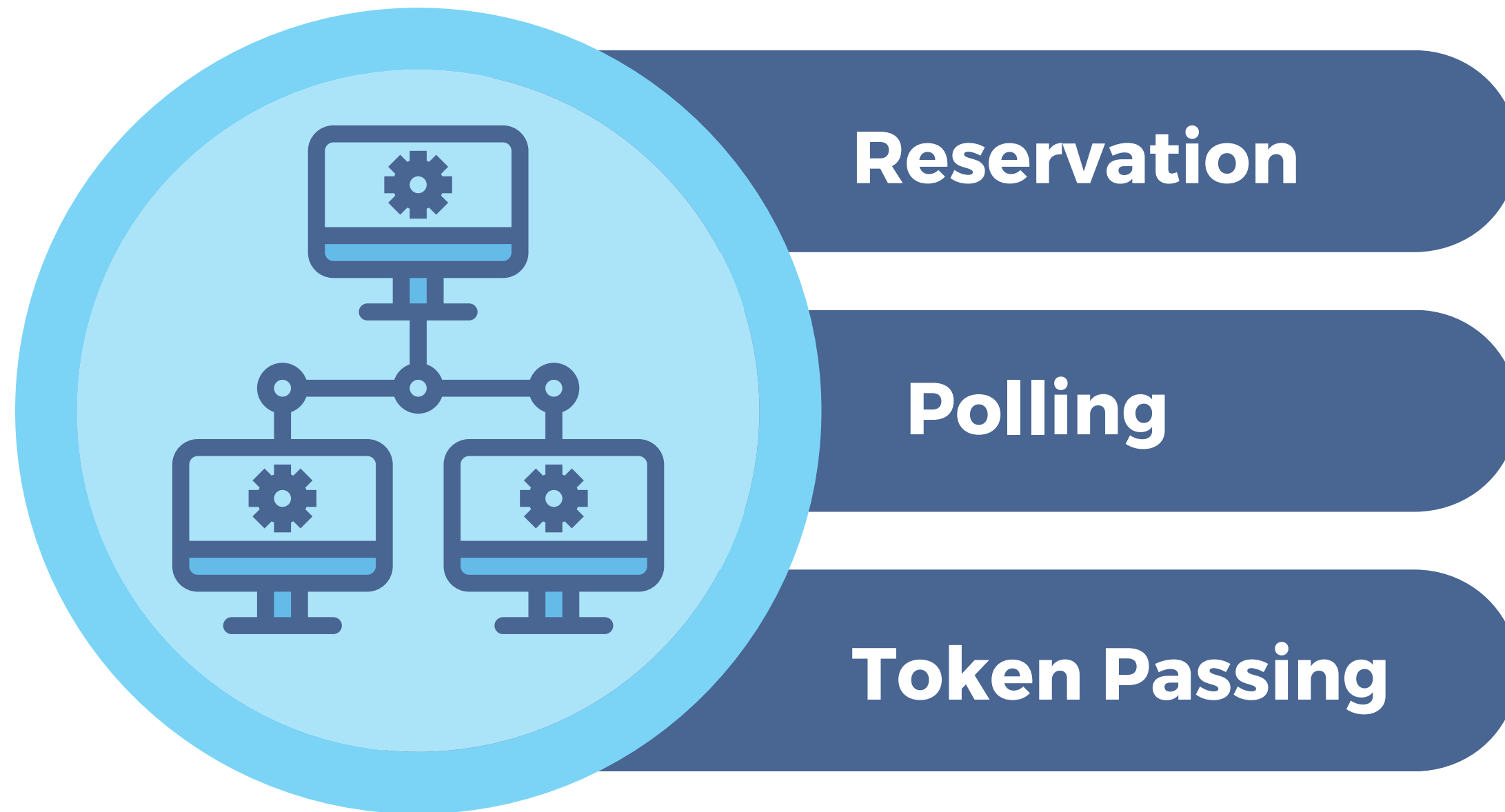
In the Controlled access technique, all stations need to consult with one another in order to find out which station has the right to send the data.

- The controlled access protocols mainly grant permission to send only one node at a time; thus in order to avoid collisions among the shared mediums.
- No station can send the data unless it has been authorized by the other stations.



Types

The protocols lies under the category of **Controlled access** are as follows:



Reservation Access Protocol

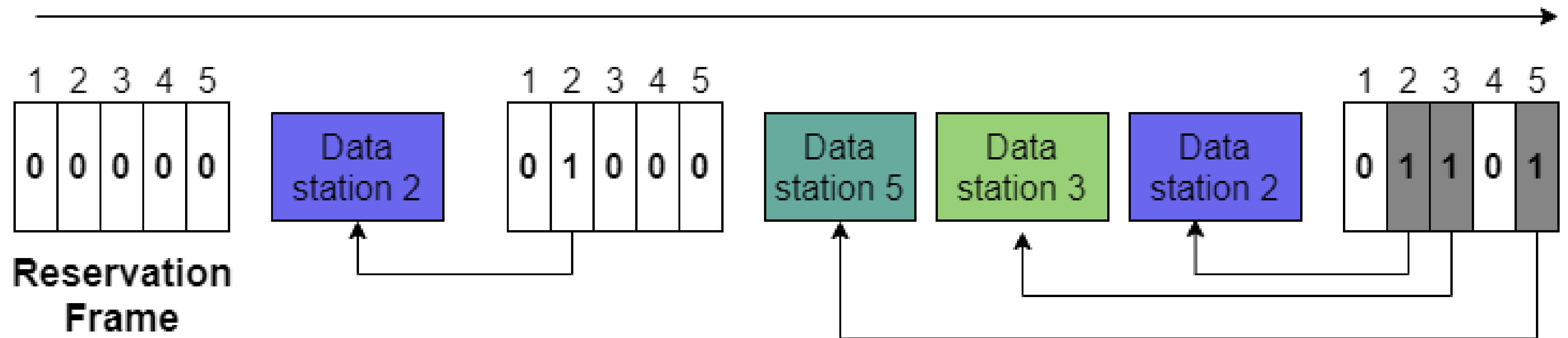
In this method, a station needs to make a reservation before sending the data.

- Time is mainly divided into intervals.
- Also, in each interval, a reservation frame precedes the data frame that is sent in that interval.
- Suppose if there are 'N' stations in the system in that case there are exactly 'N' reservation minislots in the reservation frame; where each minislot belongs to a station.
- Whenever a station needs to send the data frame, then the station makes a reservation in its own minislot.
- Then the stations that have made reservations can send their data after the reservation frame.



Example

Let us take an example of 5 stations and a 5-mini-slot reservation frame. In the first interval, stations 2,3 and 5 made the reservations. While in the second interval only station 2 has made the reservations.



Token Passing Method

In the token passing method, all the stations are organized in the form of a logical ring. For each station, there is a predecessor and a successor.

- **The predecessor** is the station that is logically before the station in the ring; while the **successor** is the station that is after the station in the ring.
- **The token** is a special bit pattern or a small message that circulates from one station to the next station in some predefined order.

Possessing the token mainly gives the station the right to access the channel and send its data.

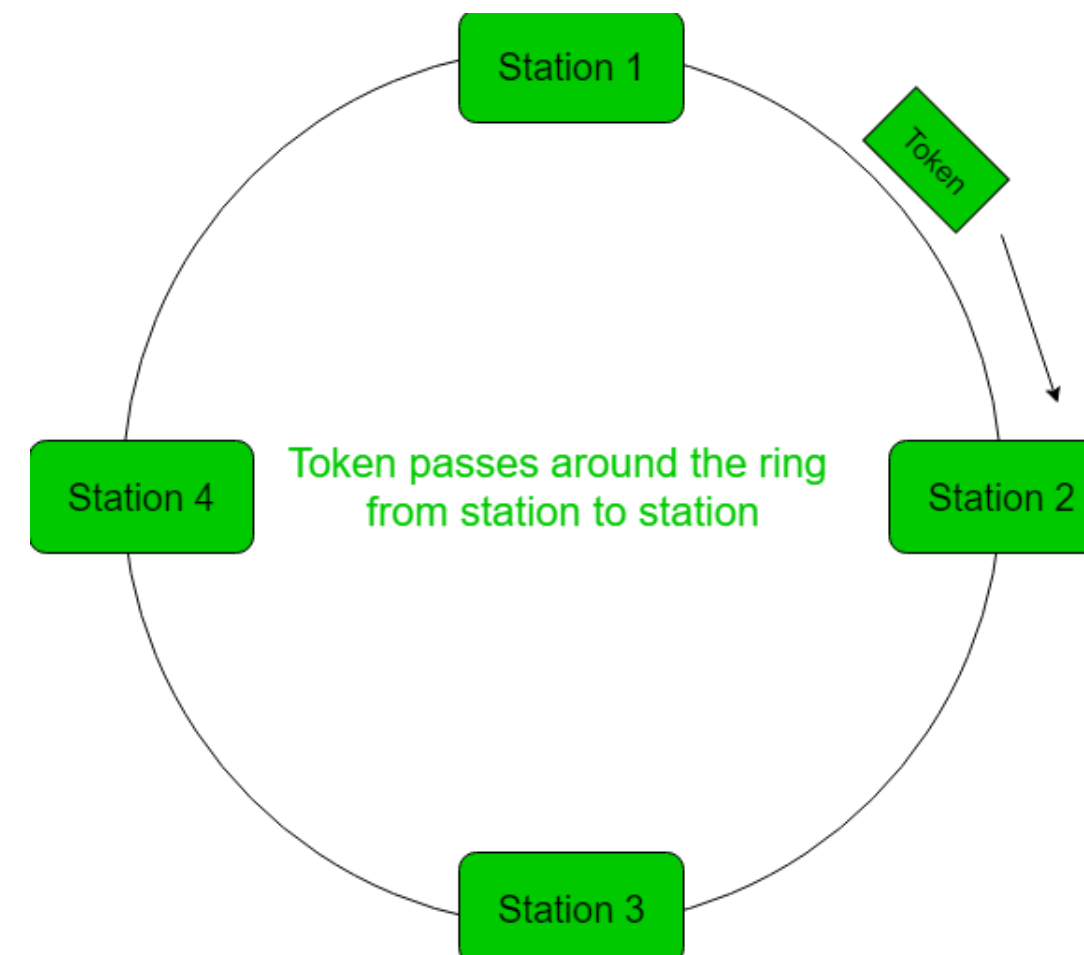


Parameters & Diagram

The performance of a token ring is governed by 2 parameters,

1. **Delay** is a measure of the time; it is the time difference between a packet ready for transmission and when it is transmitted.
2. **Throughput** is a measure of the successful traffic in the communication channel. Throughput, $S = 1/(1 + a/N)$ for $a < 1$

In the diagram, when station-1 possesses the token, it starts transmitting all the data frames which are in its queue. now after transmission, station-1 passes the token to station-2 and so on.





Thank
you!