**Aim –** To implement Load balancing in distributed system in java.

**Theory -** A load balancer is a device that acts as a reverse proxy and distributes network or application traffic across a number of servers. Load adjusting is the approach to conveying load units (i.e., occupations/assignments) across the organization which is associated with the distributed system. Load adjusting should be possible by the load balancer. The load balancer is a framework that can deal with the load and is utilized to disperse the assignments to the servers. The load balancers allocates the primary undertaking to the main server and the second assignment to the second server.

Purpose of Load Balancing in Distributed Systems:

Security: A load balancer provide safety to your site with practically no progressions to your application.

Protect applications from emerging threats: The Web Application Firewall (WAF) in the load balancer shields your site.

Authenticate User Access: The load balancer can demand a username and secret key prior to conceding admittance to your site to safeguard against unapproved access.

Protect against DDoS attacks: The load balancer can distinguish and drop conveyed refusal of administration (DDoS) traffic before it gets to your site.

Performance: Load balancers can decrease the load on your web servers and advance traffic for a superior client experience.

SSL Offload: Protecting traffic with SSL (Secure Sockets Layer) on the load balancer eliminates the upward from web servers bringing about additional assets being accessible for your web application.

Traffic Compression: A load balancer can pack site traffic giving your clients a vastly improved encounter with your site.

Load Balancing Algorithms:

1. Static
   1. Deterministic
   2. Probablistic
2. Dynamic
   1. Centralized
   2. Distributed

Advantages of Load Balancing: Load balancers minimize server response time and maximize throughput. Load balancer ensures high availability and reliability by sending requests only to online servers. Load balancers do continuous health checks to monitor the server’s capability of handling the request.

**Conclusion –** Successfully Implemented Load balancing algorithm.