PR4

Java

import java.rmi.RemoteException;

public class GFG {

    public static int hash\_func(int request\_id) {

        // Computing the hash request id

        int hashed\_id = 112; // Just an example hash value, replace it with your actual hash function

        return hashed\_id;

    }

    public static void route\_request\_to\_server(int dest\_server) {

        System.out.println("Routing request to the Server ID : " + dest\_server);

    }

    public static int request\_id = 23; // Incoming Request ID

    public static int server\_count = 10; // Total Number of Servers

    public static void main(String args[]) {

        int hashed\_id = hash\_func(request\_id); // Hashing the incoming request id

        int dest\_server = hashed\_id % server\_count; // Computing the destination server id

        route\_request\_to\_server(dest\_server);

    }

}

Python

import random  
  
class LoadBalancer:  
 def \_\_init\_\_(self, servers):  
 self.servers = servers  
 self.server\_index\_rr = 0  
  
 def round\_robin(self):  
 server = self.servers[self.server\_index\_rr]  
 self.server\_index\_rr = (self.server\_index\_rr + 1) % len(self.servers)  
 return server  
  
 def random\_selection(self):  
 return random.choice(self.servers)  
  
def simulate\_client\_requests(load\_balancer, num\_requests):  
 for i in range(num\_requests):  
 # Simulating client request  
 print(f"Request {i+1}: ", end="")  
  
 # Using Round Robin algorithm for load balancing  
 server\_rr = load\_balancer.round\_robin()  
 print(f"Round Robin - Server {server\_rr}")  
  
 # Using Random algorithm for load balancing  
 server\_random = load\_balancer.random\_selection()  
 print(f"Random - Server {server\_random}")  
 print()  
  
if \_\_name\_\_ == "\_\_main\_\_":  
 # List of servers  
 servers = ["Server A", "Server B", "Server C"]  
  
 # Create a LoadBalancer instance  
 load\_balancer = LoadBalancer(servers)  
  
 # Simulate 10 client requests  
 simulate\_client\_requests(load\_balancer, 10)

Output:



