**## code CI-3**

class Request:

def \_\_init\_\_(self, client\_id, request\_id):

self.client\_id = client\_id

self.request\_id = request\_id

class Server:

def \_\_init\_\_(self, server\_id):

self.server\_id = server\_id

self.current\_load = 0

def handle\_request(self, request):

self.current\_load += 1

print(f"Server {self.server\_id} handling request {request.request\_id} from client {request.client\_id}")

class LoadBalancer:

def \_\_init\_\_(self, servers, algorithm):

self.servers = servers

self.algorithm = algorithm

def distribute\_request(self, request):

server = self.algorithm.choose\_server(self.servers, request)

server.handle\_request(request)

class RoundRobin:

def \_\_init\_\_(self):

self.current\_index = 0

def choose\_server(self, servers, request):

server = servers[self.current\_index]

self.current\_index = (self.current\_index + 1) % len(servers)

return server

class RandomSelection:

def choose\_server(self, servers, request):

return random.choice(servers)

servers = [Server(i) for i in range(5)]

requests = [Request(i, j) for i in range(10) for j in range(5)]

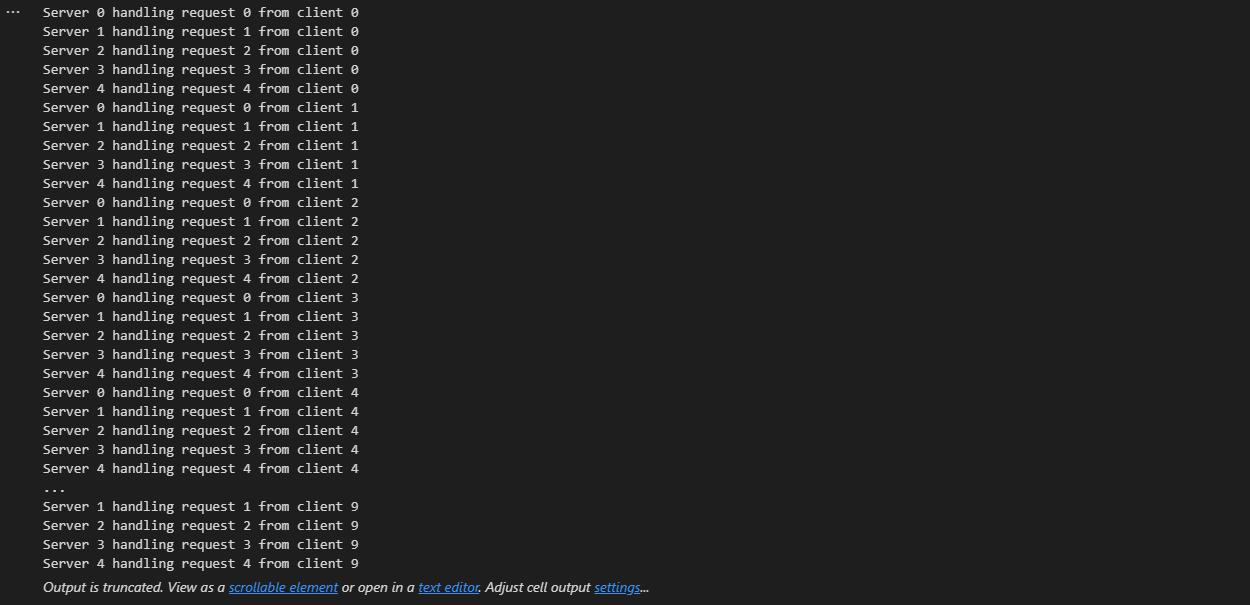
round\_robin = RoundRobin()

load\_balancer = LoadBalancer(servers, round\_robin)

for request in requests:

load\_balancer.distribute\_request(request)

**## output**

****

Server 0 handling request 0 from client 0

Server 1 handling request 1 from client 0

Server 2 handling request 2 from client 0

Server 3 handling request 3 from client 0

Server 4 handling request 4 from client 0

Server 0 handling request 0 from client 1

Server 1 handling request 1 from client 1

Server 2 handling request 2 from client 1

Server 3 handling request 3 from client 1

Server 4 handling request 4 from client 1

Server 0 handling request 0 from client 2

Server 1 handling request 1 from client 2

Server 2 handling request 2 from client 2

Server 3 handling request 3 from client 2

Server 4 handling request 4 from client 2

Server 0 handling request 0 from client 3

Server 1 handling request 1 from client 3

Server 2 handling request 2 from client 3

Server 3 handling request 3 from client 3

Server 4 handling request 4 from client 3

Server 0 handling request 0 from client 4

Server 1 handling request 1 from client 4

Server 2 handling request 2 from client 4

Server 3 handling request 3 from client 4

Server 4 handling request 4 from client 4

...

Server 1 handling request 1 from client 9

Server 2 handling request 2 from client 9

Server 3 handling request 3 from client 9

Server 4 handling request 4 from client 9