Lab 02: Hazelcast

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Code (branch): hazelcast_practice

Task 1: Creating Nodes

First step is to create and setup the 3 members for a cluster

```
Terminal: Local × Local (2) × Local (3) × + ▼

2022-05-18 13:37:41,155 [ INFO] [hz.thirsty_feistel.IO.thread-in-1] [c.h.i.s.t.TcpServerConnection]: [127.0.0.1]:5701 [dev] [5.0.3] Initialized new cluster connection between /127.0.0.1:5701 and /127.0.0.1:61301

2022-05-18 13:37:47,179 [ INFO] [hz.thirsty_feistel.priority-generic-operation.thread-0] [c.h.i.c.ClusterService]: [127.0.0.1]:5701 [dev] [5.0.3]

Members {size:3, ver:3} [

Member [127.0.0.1]:5701 - b4556a83-6881-404c-b1a0-699d581c3203 this Member [127.0.0.1]:5702 - a43535be-4e04-4cf5-a74e-302005336b92 Member [127.0.0.1]:5703 - c1cb78f1-9b66-4587-bb5e-aba7e193a786

]
```

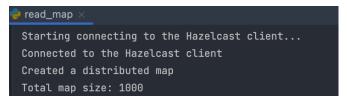
Task 2: Distributed Map

First, the Hazelcast client is created along with the distributed map with added 1000 values

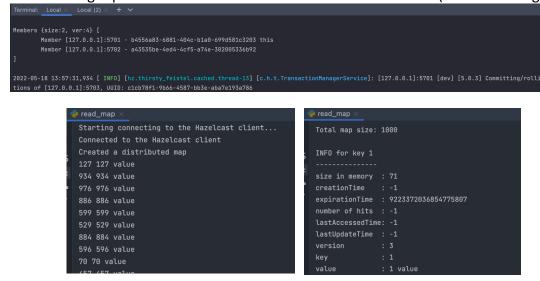
```
distributed_map ×
Starting connecting to the Hazelcast client..
Connected to the Hazelcast client
Created a distributed map
Putting 0 value to a node
Putting 1 value to a node
Putting 2 value to a node
Putting 3 value to a node
Putting 4 value to a node
Putting 5 value to a node
Putting 6 value to a node
Putting 7 value to a node
Putting 8 value to a node
Putting 8 value to a node
Putting 8 value to a node
```

The initial representation of the distributed data on n nodes (The main idea is to continue storing all the information on all the nodes)

```
    read_map ×
    Starting connecting to the Hazelcast client...
    Connected to the Hazelcast client
    Created a distributed map
    599 599 value
    529 529 value
    884 884 value
    596 596 value
    70 70 value
    457 457 value
    368 368 value
    660 660 value
    144 144 value
```



The resulting representation of the distributed data on n-1 nodes (after removing one node)



Here we see that all the initial data is stored (all 1000 values)

Task 3: Distributed Map with Locks

```
distributed_map_with_locks
 Starting connecting to the Hazelcast client for racy update...
 Starting connecting to the Hazelcast client for pessimistic update...
 Starting connecting to the Hazelcast client for optimistic update...
 Connected to the Hazelcast client for racy update
 Connected to the Hazelcast client for optimistic update
 Connected to the Hazelcast client for pessimistic update
 Created a distributed map for racy update
 Created a distributed map for optimistic update
 Created a distributed map for pessimistic update
 Starting racy update...
 Starting optimistic update...
 Starting pessimistic update..
 Finished racy job!
 Result: 1003
 Finished pessimistic job!
 Result: 1006
 Finished optimistic job!
 Result: 1998
```

Task 4: Bounded Queue

```
🔷 bounded_queue
 Starting connecting to the Hazelcast client for producer...
 Starting connecting to the Hazelcast client for consumer...
 Starting connecting to the Hazelcast client for producer...
 Starting connecting to the Hazelcast client for consumer...
 Connected to the Hazelcast client for consumer
 Connected to the Hazelcast client for producer
 Connected to the Hazelcast client for consumer
 Connected to the Hazelcast client for producer
 Created a distributed queue for [consumer]
 Created a distributed queue for [producer]
 Created a distributed queue for [consumer]Created a distributed queue for
 Produced: 0 value at process: 0
 Consumed: 0 value at process: 2
 Consumed: 0 value . Process: 2
 Produced: 0 value at process: 1
 Consumed: 1 value at process: 3
 Consumed: 1 value . Process: 3
 Produced: 1 value at process: 0
```