Outputs

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# 1. Bootup of a peer

NIKATARI-M-X1R5:Prog2\_Kataria\_Nikhita nikatari$ ./peer 0

\*\*\* A simple DHT for you \*\*\*

\*\*\* Select one operation \*\*\*

\*\*\* Enter 1 for inserting an entry \*\*\*

\*\*\* Enter 2 for getting an entry\*\*\*

\*\*\* Enter 3 for deleting an entry\*\*\*

\*\*\* Enter 4 to exit \*\*\*

Binding at ip 127.0.0.1 port 1231

# 2. PUT

|  |  |  |
| --- | --- | --- |
| \*\*\* A simple DHT for you \*\*\*  \*\*\* Select one operation \*\*\*  \*\*\* Enter 1 for inserting an entry \*\*\*  \*\*\* Enter 2 for getting an entry\*\*\*  \*\*\* Enter 3 for deleting an entry\*\*\*  \*\*\* Enter 4 to exit \*\*\*  1  Enter the key  **one**  Enter the value  **one**  Looking up Socket info for Server 2  Sending put request to 127.0.0.1:1233  Replicating the configuration  \*\*\* A simple DHT for you \*\*\*  \*\*\* Select one operation \*\*\*  \*\*\* Enter 1 for inserting an entry \*\*\*  \*\*\* Enter 2 for getting an entry\*\*\*  \*\*\* Enter 3 for deleting an entry\*\*\*  \*\*\* Enter 4 to exit \*\*\*  1  Enter the key  **two**  Enter the value  **two**  Looking up Socket info for Server 2  Sending put request to 127.0.0.1:1233    Replicating the configuration  \*\*\* A simple DHT for you \*\*\*  \*\*\* Select one operation \*\*\*  \*\*\* Enter 1 for inserting an entry \*\*\*  \*\*\* Enter 2 for getting an entry\*\*\*  \*\*\* Enter 3 for deleting an entry\*\*\*  \*\*\* Enter 4 to exit \*\*\*  1  Enter the key  **three**  Enter the value  **three**  Looking up Socket info for Server 0  Sending put request to 127.0.0.1:1231    Replicating the configuration | \*\*\* A simple DHT for you \*\*\*  \*\*\* Select one operation \*\*\*  \*\*\* Enter 1 for inserting an entry \*\*\*  \*\*\* Enter 2 for getting an entry\*\*\*  \*\*\* Enter 3 for deleting an entry\*\*\*  \*\*\* Enter 4 to exit \*\*\*  1  Enter the key  **four**  Enter the value  **four**  Looking up Socket info for Server 4  Sending put request to 127.0.0.1:1235  Replicating the configuration  \*\*\* A simple DHT for you \*\*\*  \*\*\* Select one operation \*\*\*  \*\*\* Enter 1 for inserting an entry \*\*\*  \*\*\* Enter 2 for getting an entry\*\*\*  \*\*\* Enter 3 for deleting an entry\*\*\*  \*\*\* Enter 4 to exit \*\*\*  1  Enter the key  **five**  Enter the value  **five**  Looking up Socket info for Server 2  Sending put request to 127.0.0.1:1233    Replicating the configuration  \*\*\* A simple DHT for you \*\*\*  \*\*\* Select one operation \*\*\*  \*\*\* Enter 1 for inserting an entry \*\*\*  \*\*\* Enter 2 for getting an entry\*\*\*  \*\*\* Enter 3 for deleting an entry\*\*\*  \*\*\* Enter 4 to exit \*\*\*  1  Enter the key  **six**  Enter the value  **six**  Looking up Socket info for Server 4  Sending put request to 127.0.0.1:1235    Replicating the configuration | \*\*\* A simple DHT for you \*\*\*  \*\*\* Select one operation \*\*\*  \*\*\* Enter 1 for inserting an entry \*\*\*  \*\*\* Enter 2 for getting an entry\*\*\*  \*\*\* Enter 3 for deleting an entry\*\*\*  \*\*\* Enter 4 to exit \*\*\*  1  Enter the key  **seven**  Enter the value  **seven**  Looking up Socket info for Server 1  Sending put request to 127.0.0.1:1232  Received message new from client put,seven:seven  Thread done.. join  Inserting key seven value seven  Unlocked hash table  Replicating the configuration  \*\*\* A simple DHT for you \*\*\*  \*\*\* Select one operation \*\*\*  \*\*\* Enter 1 for inserting an entry \*\*\*  \*\*\* Enter 2 for getting an entry\*\*\*  \*\*\* Enter 3 for deleting an entry\*\*\*  \*\*\* Enter 4 to exit \*\*\*  1  Enter the key  **eight**  Enter the value  **eight**  Looking up Socket info for Server 1  Sending put request to 127.0.0.1:1232    Received message new from client put,eight:eight  Thread done.. join  Inserting key eight value eight  Unlocked hash table  Replicating the configuration  \*\*\* A simple DHT for you \*\*\*  \*\*\* Select one operation \*\*\*  \*\*\* Enter 1 for inserting an entry \*\*\*  \*\*\* Enter 2 for getting an entry\*\*\*  \*\*\* Enter 3 for deleting an entry\*\*\*  \*\*\* Enter 4 to exit \*\*\*  1  Enter the key  **nine**  Enter the value  **nine**  Looking up Socket info for Server 2  Sending put request to 127.0.0.1:1233  Replicating the configuration |

# 3. GET

|  |  |  |
| --- | --- | --- |
| Replicating the configuration  \*\*\* A simple DHT for you \*\*\*  \*\*\* Select one operation \*\*\*  \*\*\* Enter 1 for inserting an entry \*\*\*  \*\*\* Enter 2 for getting an entry\*\*\*  \*\*\* Enter 3 for deleting an entry\*\*\*  \*\*\* Enter 4 to exit \*\*\*  2  Enter the key  **one**  Looking up Socket info for Server 2  Sending lookup request to 127.0.0.1:1233    Extracted value **one**  \*\*\* A simple DHT for you \*\*\*  \*\*\* Select one operation \*\*\*  \*\*\* Enter 1 for inserting an entry \*\*\*  \*\*\* Enter 2 for getting an entry\*\*\*  \*\*\* Enter 3 for deleting an entry\*\*\*  \*\*\* Enter 4 to exit \*\*\*  2  Enter the key  **two**  Looking up Socket info for Server 2  Sending lookup request to 127.0.0.1:1233    Extracted value **two**  \*\*\* A simple DHT for you \*\*\*  \*\*\* Select one operation \*\*\*  \*\*\* Enter 1 for inserting an entry \*\*\*  \*\*\* Enter 2 for getting an entry\*\*\*  \*\*\* Enter 3 for deleting an entry\*\*\*  \*\*\* Enter 4 to exit \*\*\*  2  Enter the key  **three**  Looking up Socket info for Server 0  Sending lookup request to 127.0.0.1:1231    Extracted value **three** | \*\*\* A simple DHT for you \*\*\*  \*\*\* Select one operation \*\*\*  \*\*\* Enter 1 for inserting an entry \*\*\*  \*\*\* Enter 2 for getting an entry\*\*\*  \*\*\* Enter 3 for deleting an entry\*\*\*  \*\*\* Enter 4 to exit \*\*\*  2  Enter the key  **four**  Looking up Socket info for Server 4  Sending lookup request to 127.0.0.1:1235    Extracted value **four**  \*\*\* A simple DHT for you \*\*\*  \*\*\* Select one operation \*\*\*  \*\*\* Enter 1 for inserting an entry \*\*\*  \*\*\* Enter 2 for getting an entry\*\*\*  \*\*\* Enter 3 for deleting an entry\*\*\*  \*\*\* Enter 4 to exit \*\*\*  2  Enter the key  **five**  Looking up Socket info for Server 2  Sending lookup request to 127.0.0.1:1233    Extracted value **five**  \*\*\* A simple DHT for you \*\*\*  \*\*\* Select one operation \*\*\*  \*\*\* Enter 1 for inserting an entry \*\*\*  \*\*\* Enter 2 for getting an entry\*\*\*  \*\*\* Enter 3 for deleting an entry\*\*\*  \*\*\* Enter 4 to exit \*\*\*  2  Enter the key  **six**  Looking up Socket info for Server 4  Sending lookup request to 127.0.0.1:1235    Extracted value **nine (Value overwritten due to same hash)** | \*\*\* A simple DHT for you \*\*\*  \*\*\* Select one operation \*\*\*  \*\*\* Enter 1 for inserting an entry \*\*\*  \*\*\* Enter 2 for getting an entry\*\*\*  \*\*\* Enter 3 for deleting an entry\*\*\*  \*\*\* Enter 4 to exit \*\*\*  2  Enter the key  **seven**  Looking up Socket info for Server 1  Sending lookup request to 127.0.0.1:1232    Received message new from client get,**seven**  Thread done.. join  Searching key seven  Extracted value seven  \*\*\* A simple DHT for you \*\*\*  \*\*\* Select one operation \*\*\*  \*\*\* Enter 1 for inserting an entry \*\*\*  \*\*\* Enter 2 for getting an entry\*\*\*  \*\*\* Enter 3 for deleting an entry\*\*\*  \*\*\* Enter 4 to exit \*\*\*  2  Enter the key  **eight**  Looking up Socket info for Server 1  Sending lookup request to 127.0.0.1:1232    Received message new from client get,**eight**  Thread done.. join  Searching key **eight**  Extracted value eight  \*\*\* A simple DHT for you \*\*\*  \*\*\* Select one operation \*\*\*  \*\*\* Enter 1 for inserting an entry \*\*\*  \*\*\* Enter 2 for getting an entry\*\*\*  \*\*\* Enter 3 for deleting an entry\*\*\*  \*\*\* Enter 4 to exit \*\*\*  2  Enter the key  **nine**  Looking up Socket info for Server 2  Sending lookup request to 127.0.0.1:1233    Extracted value **nine** |

# 4. DELETE

|  |  |
| --- | --- |
| Received message new from client del,one  Thread done.. join  Searching key one  Locked hash table  Unlocked hash table  Received message new from client del,two  Thread done.. join  Searching key two  Locked hash table  Unlocked hash table | Received message new from client del,three  Thread done.. join  Searching key three  Locked hash table  Unlocked hash table  Received message new from client del,four  Thread done.. join  Searching key four  Locked hash table  Unlocked hash table |

# 5. Failure Cases

## 5.1 Get from a server which is down

Thread is done\*\*\* A simple DHT for you \*\*\*

\*\*\* Select one operation \*\*\*

\*\*\* Enter 1 for inserting an entry \*\*\*

\*\*\* Enter 2 for getting an entry\*\*\*

\*\*\* Enter 3 for deleting an entry\*\*\*

\*\*\* Enter 4 to exit \*\*\*

Binding at ip 127.0.0.1 port 1232

1

Enter the key

abg

Enter the value

new

Looking up Socket info for Server 2

Sending put request to 127.0.0.1:1233

Sending put request to replica server 127.0.0.1:1234

\*\*\* A simple DHT for you \*\*\*

\*\*\* Select one operation \*\*\*

\*\*\* Enter 1 for inserting an entry \*\*\*

\*\*\* Enter 2 for getting an entry\*\*\*

\*\*\* Enter 3 for deleting an entry\*\*\*

\*\*\* Enter 4 to exit \*\*\*

2

Enter the key

abg

Looking up Socket info for Server 2

Sending lookup request to 127.0.0.1:1233

**<- Couldnt bind to the primary so checking secondary**

Looking up information from secondary server

Sending lookup request get,abg to replica

Extracted value new

\*\*\* A simple DHT for you \*\*\*

\*\*\* Select one operation \*\*\*

\*\*\* Enter 1 for inserting an entry \*\*\*

\*\*\* Enter 2 for getting an entry\*\*\*

\*\*\* Enter 3 for deleting an entry\*\*\*

\*\*\* Enter 4 to exit \*\*\*

4

\*\*\* Exiting \*\*\*

## 5.2 Put to a server which is down

NIKATARI-M-X1R5:Nikhita\_Kataria nikatari$ ./peer 1

\*\*\* A simple DHT for you \*\*\*

\*\*\* Select one operation \*\*\*

\*\*\* Enter 1 for inserting an entry \*\*\*

\*\*\* Enter 2 for getting an entry\*\*\*

\*\*\* Enter 3 for deleting an entry\*\*\*

\*\*\* Enter 4 to exit \*\*\*

Binding at ip 127.0.0.1 port 1232

1

Enter the key

abg

Enter the value

new

Looking up Socket info for Server 2

Sending put request to 127.0.0.1:1233

Couldnt bind to the socket **<- Couldnt bind to the primary so checking secondary**

Sending put request to replica server 127.0.0.1:1234

## 5.3 Delete from a server which is down

**Logs on peer:**

\*\*\* A simple DHT for you \*\*\*

\*\*\* Select one operation \*\*\*

\*\*\* Enter 1 for inserting an entry \*\*\*

\*\*\* Enter 2 for getting an entry\*\*\*

\*\*\* Enter 3 for deleting an entry\*\*\*

\*\*\* Enter 4 to exit \*\*\*

3

Enter the key

abg

Looking up Socket info for Server 2

Sending delete request to 127.0.0.1:1233

Couldnt send message to server

Sending delete request to replica

**Logs on replica:**

Received message new from client del,abg 1024

Thread done.. join

Searching key abg