

OUTPUT Screenshots

1) All the servers and clients are up.

Below is the screenshot of all the clients and servers running.

```
nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer1
[java] Starting server at 9991
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :

nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer2
[java] Starting server at 9992
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :

nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer3
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :

nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer4
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :

nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer5
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :

nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer6
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :

nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer7
[java] Starting server at 9997
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :

nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer8
[java] Starting server at 9998
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :
```

2) Putting a key-value pair

Enter the key and value as asked and press enter

```
nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer1
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :
[java] Enter Key :
[java] *****Key123
[java] * Dis: [java] Enter Value :
[java] *****Value123
[java] 1. Put [java] Key: Key123, ValueValue123
[java] 2. Get [java]
[java] 3. Del [java] key-value pair successefully stored on the server !!
[java] 4. Shu [java]
[java] Enter [java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :

nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer2
[java] Starting server at 9992
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :

nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer3
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :

nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer4
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :

nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer5
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :

nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer6
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :

nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer7
[java] Starting server at 9997
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :

nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer8
[java] Starting server at 9998
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :
```

3) Getting a value for a given key

Enter the key as asked and press enter

```
nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer1
[java] key-value pair successfully stored on the server !!
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :

nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer2
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :

[java] Enter Key :
Key123
[java] The value retrived from the server : Value123
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :

nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer7
[java] Starting server at 9997
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :

nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer8
[java] Starting server at 9998
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :
```

4) Deleting a key-value pair

Enter the key as asked and press enter

```
nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer1
[java] key-value pair successfully stored on the server !!
[java]
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :
```

```
nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer2
[java] The value retrieved from the server : Value123
[java]
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :
```

```
nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer3
[java]
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :
```

```
nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer4
[java]
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :
```

```
nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer5
[java] Starting server at 9998
[java]
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :
```

```
nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer6
[java] Enter Key :
[java]
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :
```

```
nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer7
[java] Successfully deleted !!
[java]
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :
```

```
nikhil@nikhil-HP-Pavilion-dv4-Notebook-PC: ~/AOS/peer8
[java] Starting server at 9998
[java]
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :
```

5) Invalid Key

Entered key size is greater than 24 so the error message is printed

```
[java] key-value pair successfully stored on the server !!
[java]
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :
```

```
[java] The value retrieved from the server : Value123
[java]
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :
```

```
[java] Starting server at 9995
[java]
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :
```

```
[java] Enter Key :
Key12345678909876543298765
[java] Invalid key...The length of the key should not be greater than 24
[java]
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :
```

```
[java] Starting server at 9997
[java]
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :
```

```
[java] Successfully deleted !!
[java]
[java] *****
[java] * Distributed Hash Table *
[java] *****
[java] 1. Put
[java] 2. Get
[java] 3. Delete
[java] 4. Shutdown Client
[java] Enter your choice :
```