

Assignment13.4

Perform CRUD operations in Hbase using Hbase Java

i)Creating a table in Hbase

```
CreateTable.java PutTable.java scanTable.java getTable.java deleteTable.java

2+import java.io.IOException;
11
12 public class CreateTable {
13     Configuration config = HBaseConfiguration.create();
14     public void createtable(String name,String[] colfamily) throws MasterNotRunningException,
15                               ZooKeeperConnectionException, IOException
16     {
17
18 HBaseAdmin admin = new HBaseAdmin(config);
19 HTableDescriptor des = new HTableDescriptor(Bytes.toBytes(name));
20 for(int i=0;i<colfamily.length;i++){
21     des.addFamily(new HColumnDescriptor(colfamily[i]));
22 }
23 if(admin.tableExists(name)){
24     System.out.println("Table already exist");
25 }
26 else{
27     admin.createTable(des);
28     System.out.println("Table: "+name+ " Sucessfully created");
29 }
30 }
31 public static void main(String args[]) throws MasterNotRunningException,
32                               ZooKeeperConnectionException,IOException{
33     CreateTable op = new CreateTable();
34     String tablename = "PersonDetails";
35     String[] familys = {"FirstName","age"};
36     op.createtable(tablename, familys);
37 }
38 }
```

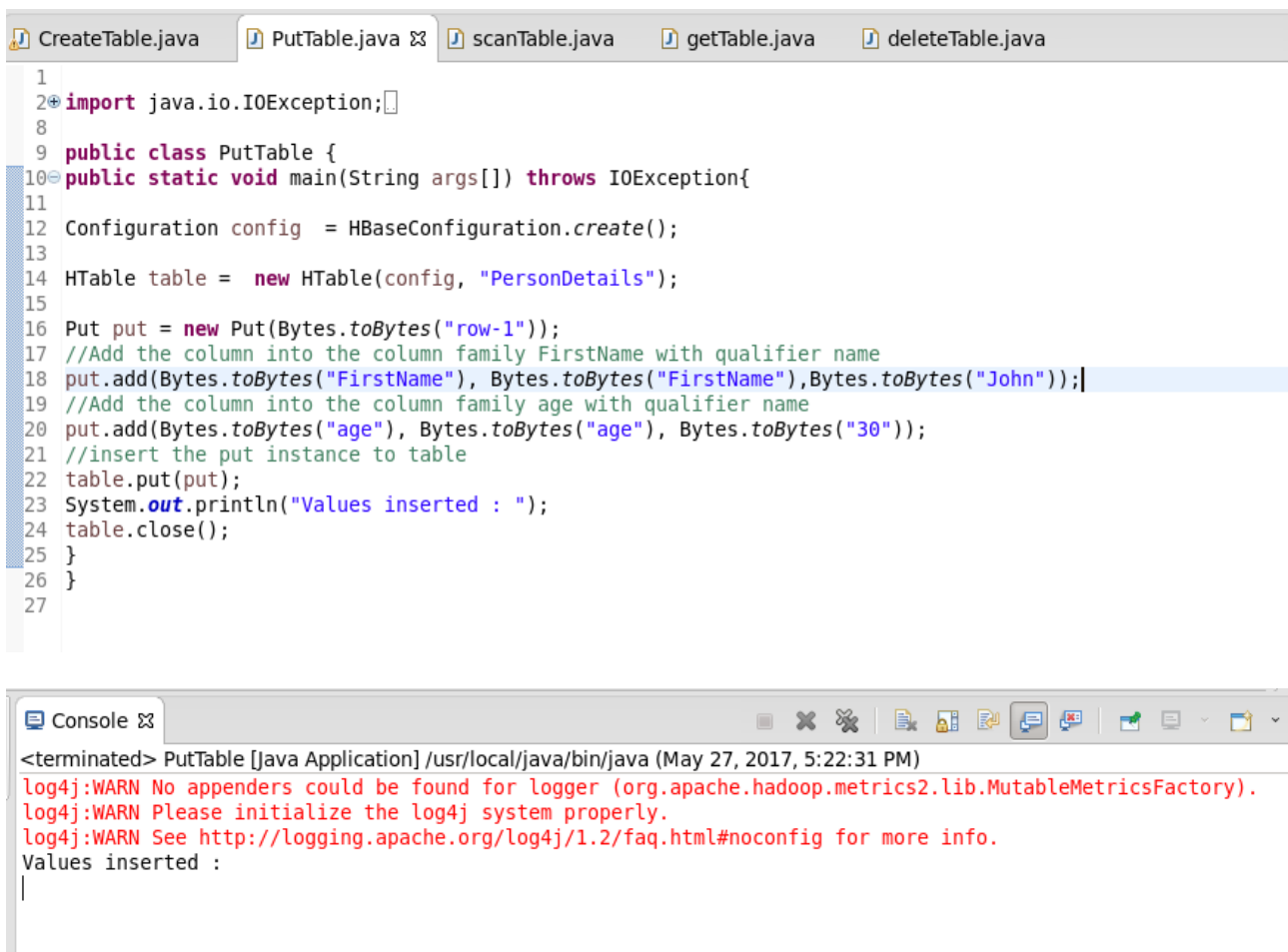
```
Console
<terminated> CreateTable [Java Application] /usr/local/java/bin/java (May 27, 2017, 5:19:16 PM)
log4j:WARN No appenders could be found for logger (org.apache.hadoop.metrics2.lib.MutableMetricsFactory).
log4j:WARN Please initialize the log4j system properly.
log4j:WARN See http://logging.apache.org/log4j/1.2/faq.html#noconfig for more info.
Table: PersonDetails Sucessfully created
```

```

hbase(main):001:0> list
TABLE
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/local/hbase/lib/slf4j-log4j12-1.6.4.jar!/
org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/local/hadoop-2.6.0/share/hadoop/common/li
b/slf4j-log4j12-1.7.5.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
2017-05-27 17:24:29,679 WARN [main] util.NativeCodeLoader: Unable to load nativ
e-hadoop library for your platform... using builtin-java classes where applicabl
e
Acadgild
Details
PersonDetails
customer
htest
song-artist-map
station-geo-map
subscribed-users
8 row(s) in 7.3960 seconds

```

ii)Put operation in Hbase



The screenshot shows an IDE with a tab for `PutTable.java`. The code in the file is as follows:

```

1
2 import java.io.IOException;
3
4 public class PutTable {
5     public static void main(String args[]) throws IOException{
6
7         Configuration config = HBaseConfiguration.create();
8         HTable table = new HTable(config, "PersonDetails");
9
10        Put put = new Put(Bytes.toBytes("row-1"));
11        //Add the column into the column family FirstName with qualifier name
12        put.add(Bytes.toBytes("FirstName"), Bytes.toBytes("FirstName"), Bytes.toBytes("John"));
13        //Add the column into the column family age with qualifier name
14        put.add(Bytes.toBytes("age"), Bytes.toBytes("age"), Bytes.toBytes("30"));
15        //insert the put instance to table
16        table.put(put);
17        System.out.println("Values inserted : ");
18        table.close();
19    }
20 }
21
22

```

Below the code editor is a console window showing the output of the application:

```

<terminated> PutTable [Java Application] /usr/local/java/bin/java (May 27, 2017, 5:22:31 PM)
log4j:WARN No appenders could be found for logger (org.apache.hadoop.metrics2.lib.MutableMetricsFactory).
log4j:WARN Please initialize the log4j system properly.
log4j:WARN See http://logging.apache.org/log4j/1.2/faq.html#noconfig for more info.
Values inserted :

```

```
hbase(main):005:0> scan 'PersonDetails'
```

```
ROW                                COLUMN+CELL
row-1                             column=FirstName:FirstName, timestamp=1495886825202, value=John
row-1                             column=age:age, timestamp=1495886825202, value=30
1 row(s) in 0.1640 seconds
```

iii) Scan operation in HBase

CreateTable.java PutTable.java scanTable.java

```
1
2+ import java.io.IOException;
12
13
14 public class scanTable {
15+ public static void main(String args[]) throws IOException{
16 Configuration config = HBaseConfiguration.create();
17 HTable table = new HTable(config, "PersonDetails");
18 Scan scan = new Scan();
19 scan.addColumn(Bytes.toBytes("FirstName"), Bytes.toBytes("FirstName"));
20 scan.setStartRow(Bytes.toBytes("row-1"));
21 //scan.setStartRow(Bytes.toBytes("row-4"));
22 ResultScanner result = table.getScanner(scan);
23 for(Result res:result){
24 byte[] val = res.getValue(Bytes.toBytes("FirstName"), Bytes.toBytes("FirstName"));
25 System.out.println("Row-value:"+Bytes.toString(val));
26
27 }
28 table.close();
29 }
30 }
```

Console

<terminated> scanTable [Java Application] /usr/local/java/bin/java (May 27, 2017, 5:38:40 PM)

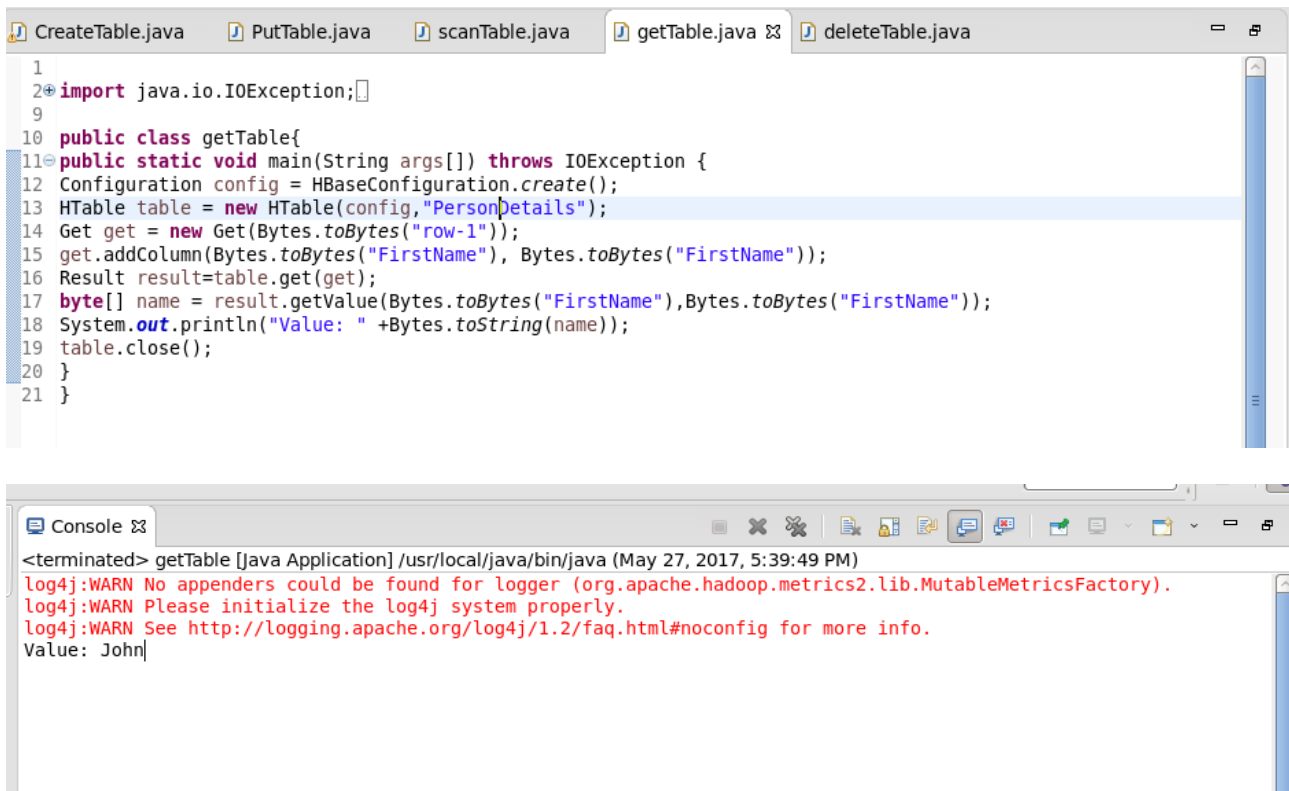
log4j:WARN No appenders could be found for logger (org.apache.hadoop.metrics2.lib.MutableMetricsFactory).

log4j:WARN Please initialize the log4j system properly.

log4j:WARN See <http://logging.apache.org/log4j/1.2/faq.html#noconfig> for more info.

First-name:John

iv) get operation in Hbase




The screenshot shows an IDE with a tab for 'getTable.java' selected. The code in the file is as follows:

```
1
2 import java.io.IOException;
9
10 public class getTable{
11 public static void main(String args[]) throws IOException {
12 Configuration config = HBaseConfiguration.create();
13 HTable table = new HTable(config, "PersonDetails");
14 Get get = new Get(Bytes.toBytes("row-1"));
15 get.addColumn(Bytes.toBytes("FirstName"), Bytes.toBytes("FirstName"));
16 Result result=table.get(get);
17 byte[] name = result.getValue(Bytes.toBytes("FirstName"), Bytes.toBytes("FirstName"));
18 System.out.println("Value: " +Bytes.toString(name));
19 table.close();
20 }
21 }
```

Below the code editor, the console window shows the following output:

```
<terminated> getTable [Java Application] /usr/local/java/bin/java (May 27, 2017, 5:39:49 PM)
log4j:WARN No appenders could be found for logger (org.apache.hadoop.metrics2.lib.MutableMetricsFactory).
log4j:WARN Please initialize the log4j system properly.
log4j:WARN See http://logging.apache.org/log4j/1.2/faq.html#noconfig for more info.
Value: John
```

v) delete operation in Hbase



The screenshot shows an IDE with a tab for 'deleteTable.java' selected. The code in the file is as follows:

```
1
2 import java.io.IOException;
9
10 public class deleteTable{
11 public static void main(String args[])throws IOException{
12 Configuration config = HBaseConfiguration.create();
13 HTable table=new HTable(config, "PersonDetails");
14 Delete del=new Delete(Bytes.toBytes("row-1"));
15 del.deleteColumn(Bytes.toBytes("FirstName"), Bytes.toBytes("FirstName") );
16 table.delete(del);
17 System.out.println("value-deleted");
18 table.close();
19 }
20 }
```

Below the code editor, the console window shows the following output:

```
<terminated> deleteTable [Java Application] /usr/local/java/bin/java (May 27, 2017, 5:42:40 PM)
log4j:WARN No appenders could be found for logger (org.apache.hadoop.metrics2.lib.MutableMetricsFactory).
log4j:WARN Please initialize the log4j system properly.
log4j:WARN See http://logging.apache.org/log4j/1.2/faq.html#noconfig for more info.
value-deleted
```

before delete operation

```
hbase(main):005:0> scan 'PersonDetails'
```

```
ROW COLUMN+CELL
 row-1 column=FirstName:FirstName, timestamp=1495886825202, value=John
 row-1 column=age:age, timestamp=1495886825202, value=30
1 row(s) in 0.1640 seconds
```

.. . . . -

after delete operation

```
hbase(main):006:0> scan 'PersonDetails'
```

```
ROW COLUMN+CELL
 row-1 column=age:age, timestamp=1495886825202, value=30
1 row(s) in 0.0790 seconds
```