

BigData

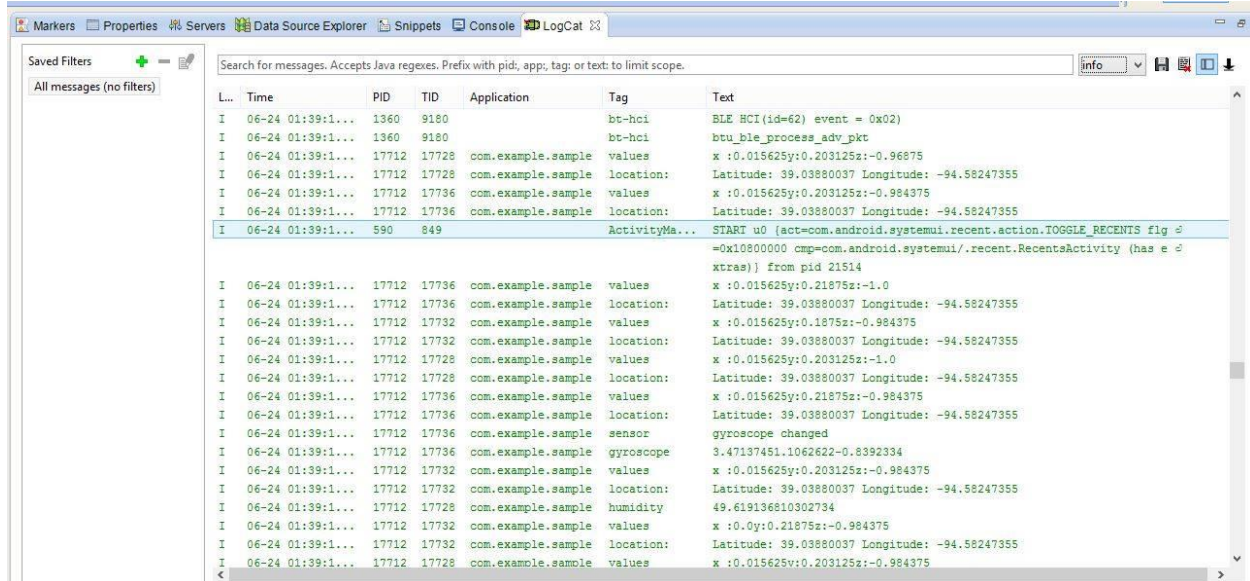
LAB – II

Submitted by
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Task1: Android application collecting data from 4 different sensors.

Here I uses location sensor, temperature, humidity and gyro sensor.

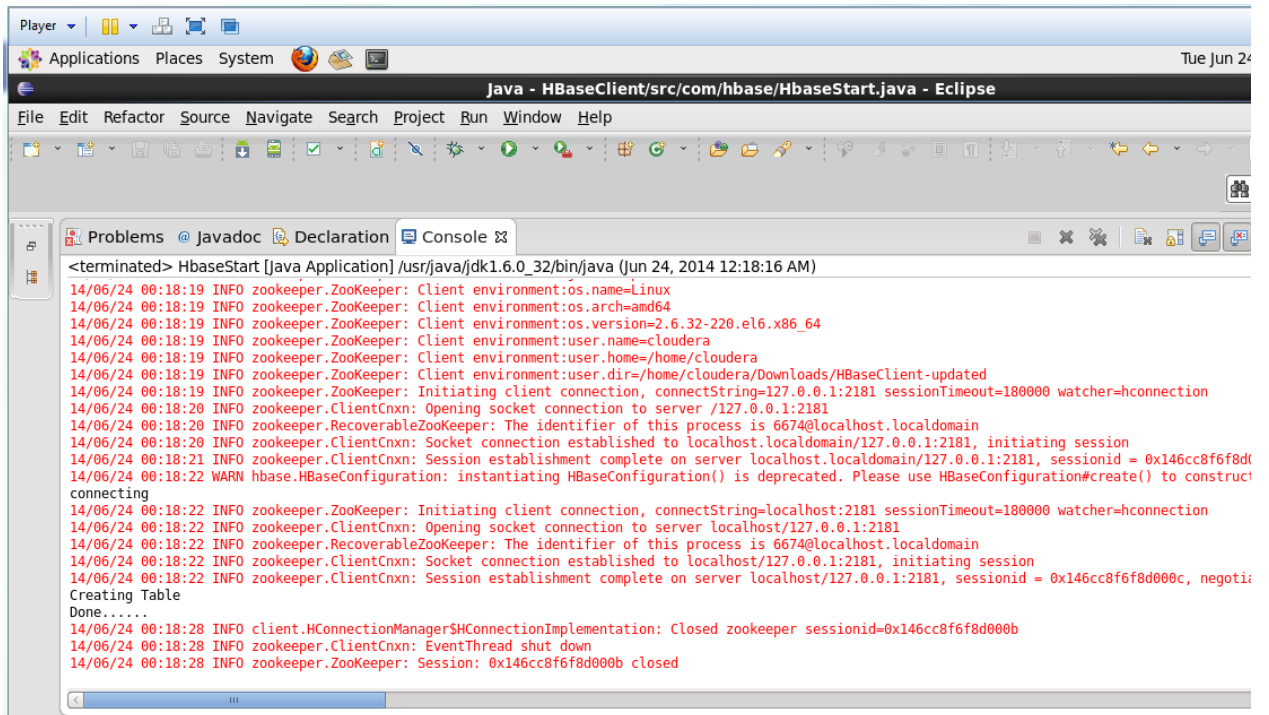
1. Running application on android device and collecting sensor data.



2. Sensor data is dumped to a file Data_M

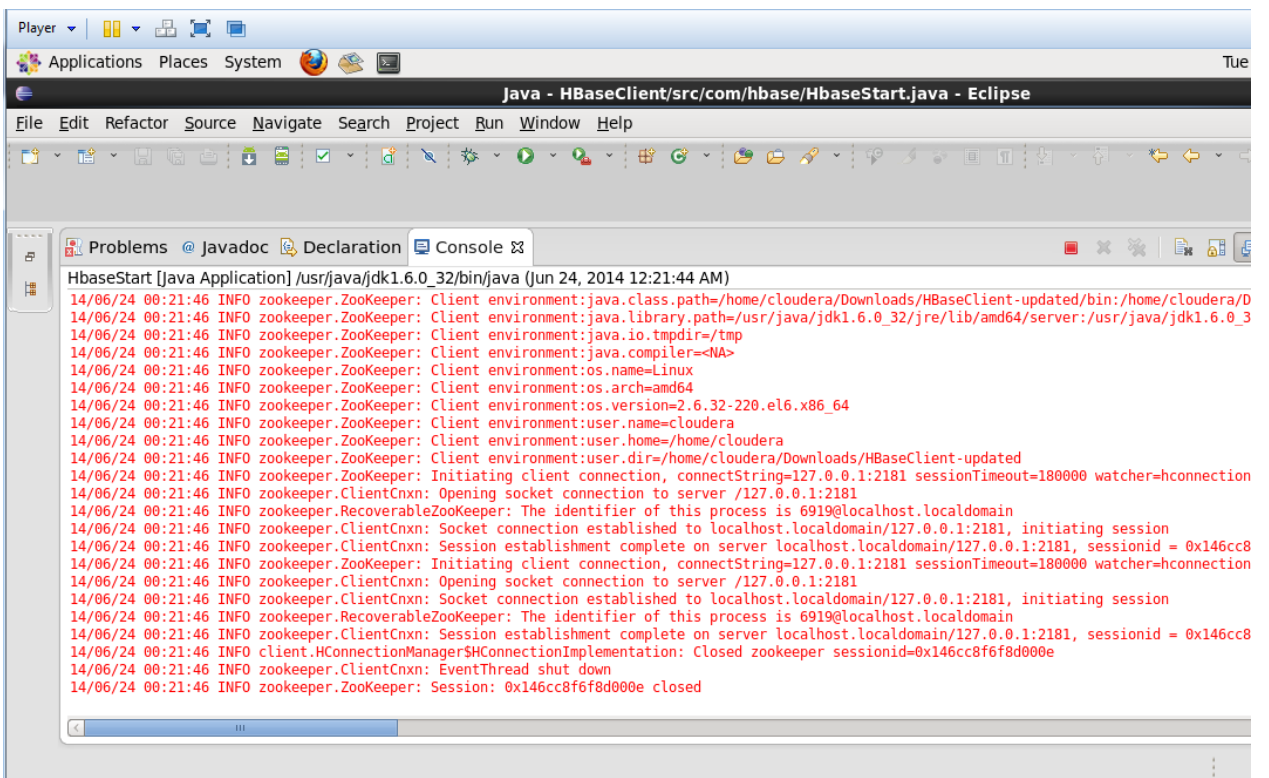
Data_M.txt											
39.03880037	-94.58247355	Tue Jun 24 01:38:39 CDT 2014	-0.015625	0.0625	-1.015625	50.52705001831055	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:40 CDT 2014	-0.015625	0.0625	-1.015625	50.52705001831055	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:40 CDT 2014	-0.109375	0.03125	-1.484375	50.52705001831055	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:40 CDT 2014	-1.046875	-1.484375	-1.234375	50.52705001831055	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:40 CDT 2014	0.46875 0.453125	-0.96875		50.52705001831055	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:40 CDT 2014	0.984375	0.0	1.65625	50.52705001831055	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:40 CDT 2014	-1.890625	0.75	-0.96875	50.52705001831055	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:40 CDT 2014	1.59375 -0.703125	-0.515625		50.6567497253418	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:40 CDT 2014	1.1875 -0.703125	1.265625		50.6567497253418	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:40 CDT 2014	-1.953125	1.09375	-0.875	50.6567497253418	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:41 CDT 2014	1.984375	-2.0	-0.453125	50.6567497253418	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:41 CDT 2014	0.5625 0.265625	1.484375		50.6567497253418	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:41 CDT 2014	-0.859375	1.09375	-1.75	50.6567497253418	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:41 CDT 2014	1.984375	-2.0	0.703125	50.6567497253418	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:41 CDT 2014	0.25 -0.078125	0.640625		50.6567497253418	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:41 CDT 2014	1.140625	-0.78125	0.015625	50.6567497253418	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:41 CDT 2014	0.8125 -0.765625	-0.109375		50.6567497253418	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:41 CDT 2014	0.28125 -0.5	-0.265625		50.6567497253418	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:41 CDT 2014	0.75 -0.4375	-0.34375		49.48180389404297	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:41 CDT 2014	0.875 -0.234375	-1.25		49.48180389404297	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:41 CDT 2014	0.34375 -0.484375	0.21875		49.48180389404297	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:42 CDT 2014	1.0625 -0.109375	-0.90625		49.48180389404297	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:42 CDT 2014	0.878125	-0.15625	-1.0625	49.48180389404297	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:42 CDT 2014	0.0625 -0.078125	-1.109375		49.48180389404297	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:42 CDT 2014	0.203125	-0.390625	-1.0	49.48180389404297	28.343659667968744				
39.03880037	-94.58247355	Tue Jun 24 01:38:42 CDT 2014	0.878125	-0.234375	-1.046875	49.48180389404297	28.343659667968744				

3. This data is stored in Hbase. For this firstly create a hbase table



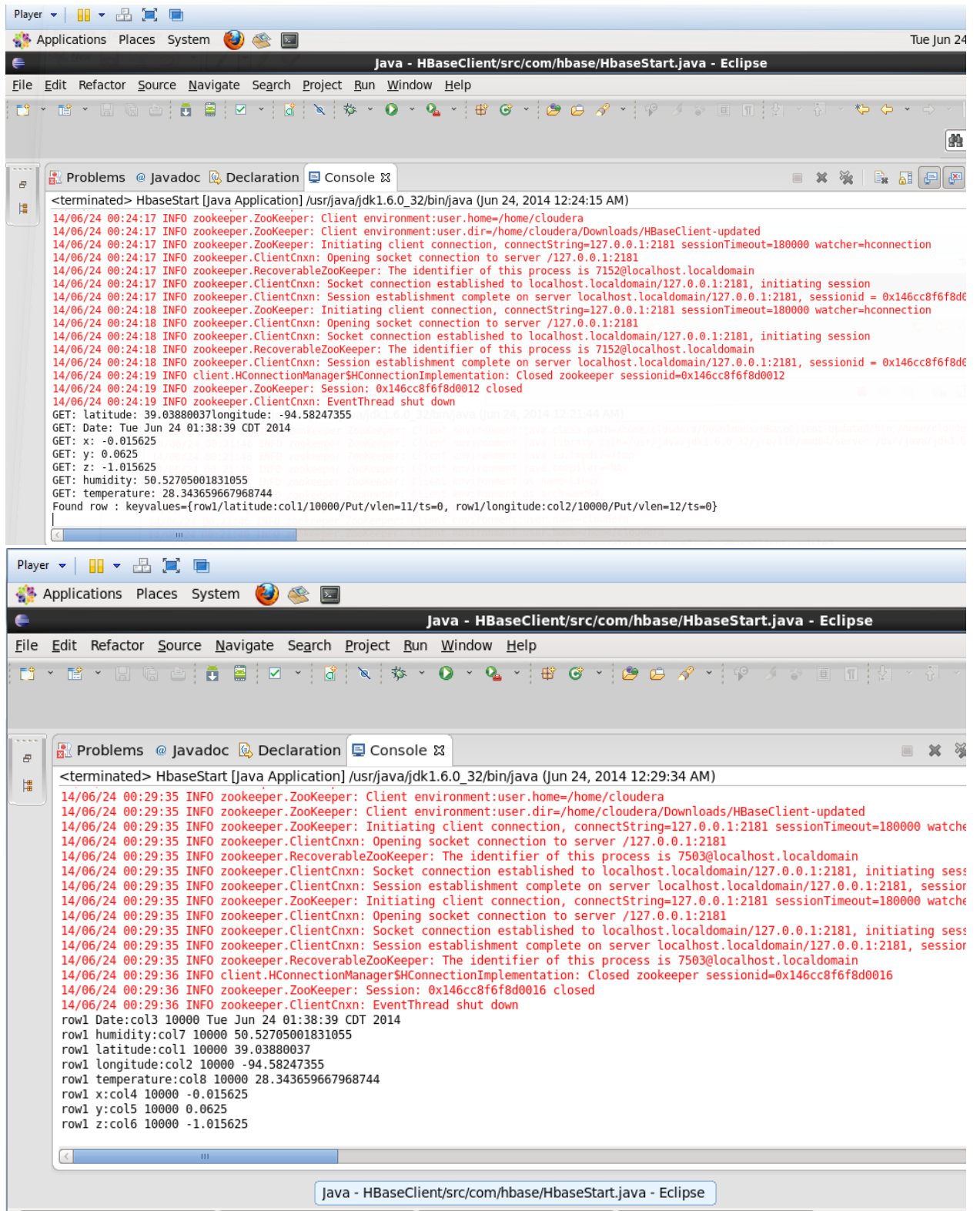
```
<terminated> HbaseStart [Java Application] /usr/java/jdk1.6.0_32/bin/java (Jun 24, 2014 12:18:16 AM)
14/06/24 00:18:19 INFO zookeeper.ZooKeeper: Client environment:os.name=Linux
14/06/24 00:18:19 INFO zookeeper.ZooKeeper: Client environment:os.arch=amd64
14/06/24 00:18:19 INFO zookeeper.ZooKeeper: Client environment:os.version=2.6.32-220.el6.x86_64
14/06/24 00:18:19 INFO zookeeper.ZooKeeper: Client environment:user.name=cloudera
14/06/24 00:18:19 INFO zookeeper.ZooKeeper: Client environment:user.home=/home/cloudera
14/06/24 00:18:19 INFO zookeeper.ZooKeeper: Client environment:user.dir=/home/cloudera/Downloads/HBaseClient-updated
14/06/24 00:18:19 INFO zookeeper.ZooKeeper: Initiating client connection, connectString=127.0.0.1:2181 sessionTimeout=180000 watcher=hconnection
14/06/24 00:18:20 INFO zookeeper.ClientCnxn: Opening socket connection to server /127.0.0.1:2181
14/06/24 00:18:20 INFO zookeeper.RecoverableZooKeeper: The identifier of this process is 6674@localhost.localdomain
14/06/24 00:18:20 INFO zookeeper.ClientCnxn: Socket connection established to localhost.localdomain/127.0.0.1:2181, initiating session
14/06/24 00:18:21 INFO zookeeper.ClientCnxn: Session establishment complete on server localhost.localdomain/127.0.0.1:2181, sessionId = 0x146cc8f6f8d000c
14/06/24 00:18:22 WARN hbase.HBaseConfiguration: instantiating HBaseConfiguration() is deprecated. Please use HBaseConfiguration#create() to construct
connecting
14/06/24 00:18:22 INFO zookeeper.ZooKeeper: Initiating client connection, connectString=localhost:2181 sessionTimeout=180000 watcher=hconnection
14/06/24 00:18:22 INFO zookeeper.ClientCnxn: Opening socket connection to server localhost/127.0.0.1:2181
14/06/24 00:18:22 INFO zookeeper.RecoverableZooKeeper: The identifier of this process is 6674@localhost.localdomain
14/06/24 00:18:22 INFO zookeeper.ClientCnxn: Socket connection established to localhost/127.0.0.1:2181, initiating session
14/06/24 00:18:22 INFO zookeeper.ClientCnxn: Session establishment complete on server localhost/127.0.0.1:2181, sessionId = 0x146cc8f6f8d000c, negoti
Creating Table
Done.....
14/06/24 00:18:28 INFO client.HConnectionManager$HConnectionImplementation: Closed zookeeper sessionId=0x146cc8f6f8d000b
14/06/24 00:18:28 INFO zookeeper.ClientCnxn: EventThread shut down
14/06/24 00:18:28 INFO zookeeper.ZooKeeper: Session: 0x146cc8f6f8d000b closed
```

4. Insert the data into the table



```
HbaseStart [Java Application] /usr/java/jdk1.6.0_32/bin/java (Jun 24, 2014 12:21:44 AM)
14/06/24 00:21:46 INFO zookeeper.ZooKeeper: Client environment:java.class.path=/home/cloudera/Downloads/HBaseClient-updated/bin:/home/cloudera/D
14/06/24 00:21:46 INFO zookeeper.ZooKeeper: Client environment:java.library.path=/usr/java/jdk1.6.0_32/jre/lib/amd64/server:/usr/java/jdk1.6.0_3
14/06/24 00:21:46 INFO zookeeper.ZooKeeper: Client environment:java.io.tmpdir=/tmp
14/06/24 00:21:46 INFO zookeeper.ZooKeeper: Client environment:java.compiler=<NA>
14/06/24 00:21:46 INFO zookeeper.ZooKeeper: Client environment:os.name=Linux
14/06/24 00:21:46 INFO zookeeper.ZooKeeper: Client environment:os.arch=amd64
14/06/24 00:21:46 INFO zookeeper.ZooKeeper: Client environment:os.version=2.6.32-220.el6.x86_64
14/06/24 00:21:46 INFO zookeeper.ZooKeeper: Client environment:user.name=cloudera
14/06/24 00:21:46 INFO zookeeper.ZooKeeper: Client environment:user.home=/home/cloudera
14/06/24 00:21:46 INFO zookeeper.ZooKeeper: Client environment:user.dir=/home/cloudera/Downloads/HBaseClient-updated
14/06/24 00:21:46 INFO zookeeper.ZooKeeper: Initiating client connection, connectString=127.0.0.1:2181 sessionTimeout=180000 watcher=hconnection
14/06/24 00:21:46 INFO zookeeper.ClientCnxn: Opening socket connection to server /127.0.0.1:2181
14/06/24 00:21:46 INFO zookeeper.RecoverableZooKeeper: The identifier of this process is 6919@localhost.localdomain
14/06/24 00:21:46 INFO zookeeper.ClientCnxn: Socket connection established to localhost.localdomain/127.0.0.1:2181, initiating session
14/06/24 00:21:46 INFO zookeeper.ClientCnxn: Session establishment complete on server localhost.localdomain/127.0.0.1:2181, sessionId = 0x146cc8
14/06/24 00:21:46 INFO zookeeper.ZooKeeper: Initiating client connection, connectString=127.0.0.1:2181 sessionTimeout=180000 watcher=hconnection
14/06/24 00:21:46 INFO zookeeper.ClientCnxn: Opening socket connection to server /127.0.0.1:2181
14/06/24 00:21:46 INFO zookeeper.RecoverableZooKeeper: The identifier of this process is 6919@localhost.localdomain
14/06/24 00:21:46 INFO zookeeper.ClientCnxn: Socket connection established to localhost.localdomain/127.0.0.1:2181, initiating session
14/06/24 00:21:46 INFO zookeeper.RecoverableZooKeeper: The identifier of this process is 6919@localhost.localdomain
14/06/24 00:21:46 INFO zookeeper.ClientCnxn: Session establishment complete on server localhost.localdomain/127.0.0.1:2181, sessionId = 0x146cc8
14/06/24 00:21:46 INFO client.HConnectionManager$HConnectionImplementation: Closed zookeeper sessionId=0x146cc8f6f8d000e
14/06/24 00:21:46 INFO zookeeper.ClientCnxn: EventThread shut down
14/06/24 00:21:46 INFO zookeeper.ZooKeeper: Session: 0x146cc8f6f8d000e closed
```

5. To check data insertion we retrieve data



```
<terminated> HbaseStart [Java Application] /usr/java/jdk1.6.0_32/bin/java (Jun 24, 2014 12:24:15 AM)
14/06/24 00:24:17 INFO zookeeper.ZooKeeper: Client environment:user.home=/home/cloudera
14/06/24 00:24:17 INFO zookeeper.ZooKeeper: Client environment:user.dir=/home/cloudera/Downloads/HBaseClient-updated
14/06/24 00:24:17 INFO zookeeper.ZooKeeper: Initiating client connection, connectString=127.0.0.1:2181 sessionTimeout=180000 watcher=hconnection
14/06/24 00:24:17 INFO zookeeper.ClientCnxn: Opening socket connection to server /127.0.0.1:2181
14/06/24 00:24:17 INFO zookeeper.RecoverableZooKeeper: The identifier of this process is 7152@localhost.localdomain
14/06/24 00:24:17 INFO zookeeper.ClientCnxn: Socket connection established to localhost.localdomain/127.0.0.1:2181, initiating session
14/06/24 00:24:17 INFO zookeeper.ClientCnxn: Session establishment complete on server localhost.localdomain/127.0.0.1:2181, sessionId = 0x146cc8f6f8d6
14/06/24 00:24:18 INFO zookeeper.ZooKeeper: Initiating client connection, connectString=127.0.0.1:2181 sessionTimeout=180000 watcher=hconnection
14/06/24 00:24:18 INFO zookeeper.ClientCnxn: Opening socket connection to server /127.0.0.1:2181
14/06/24 00:24:18 INFO zookeeper.ClientCnxn: Socket connection established to localhost.localdomain/127.0.0.1:2181, initiating session
14/06/24 00:24:18 INFO zookeeper.RecoverableZooKeeper: The identifier of this process is 7152@localhost.localdomain
14/06/24 00:24:18 INFO zookeeper.ClientCnxn: Session establishment complete on server localhost.localdomain/127.0.0.1:2181, sessionId = 0x146cc8f6f8d6
14/06/24 00:24:19 INFO client.HConnectionManager$HConnectionImplementation: Closed zookeeper sessionId=0x146cc8f6f8d0012
14/06/24 00:24:19 INFO zookeeper.ZooKeeper: Session: 0x146cc8f6f8d0012 closed
14/06/24 00:24:19 INFO zookeeper.ClientCnxn: EventThread shut down
GET: latitude: 39.03880037 longitude: -94.58247355
GET: Date: Tue Jun 24 01:38:39 CDT 2014
GET: x: -0.015625
GET: y: 0.0625
GET: z: -1.015625
GET: humidity: 50.52705001831055
GET: temperature: 28.343659667968744
Found row : keyvalues={row1/latitude:col1/10000/Put/vlen=11/ts=0, row1/longitude:col2/10000/Put/vlen=12/ts=0}
```

```
<terminated> HbaseStart [Java Application] /usr/java/jdk1.6.0_32/bin/java (Jun 24, 2014 12:29:34 AM)
14/06/24 00:29:35 INFO zookeeper.ZooKeeper: Client environment:user.home=/home/cloudera
14/06/24 00:29:35 INFO zookeeper.ZooKeeper: Client environment:user.dir=/home/cloudera/Downloads/HBaseClient-updated
14/06/24 00:29:35 INFO zookeeper.ZooKeeper: Initiating client connection, connectString=127.0.0.1:2181 sessionTimeout=180000 watcher=hconnection
14/06/24 00:29:35 INFO zookeeper.ClientCnxn: Opening socket connection to server /127.0.0.1:2181
14/06/24 00:29:35 INFO zookeeper.RecoverableZooKeeper: The identifier of this process is 7503@localhost.localdomain
14/06/24 00:29:35 INFO zookeeper.ClientCnxn: Socket connection established to localhost.localdomain/127.0.0.1:2181, initiating session
14/06/24 00:29:35 INFO zookeeper.ClientCnxn: Session establishment complete on server localhost.localdomain/127.0.0.1:2181, sessionid = 0x146cc8f6f8d0016
14/06/24 00:29:35 INFO zookeeper.ZooKeeper: Initiating client connection, connectString=127.0.0.1:2181 sessionTimeout=180000 watcher=hconnection
14/06/24 00:29:35 INFO zookeeper.ClientCnxn: Opening socket connection to server /127.0.0.1:2181
14/06/24 00:29:35 INFO zookeeper.ClientCnxn: Socket connection established to localhost.localdomain/127.0.0.1:2181, initiating session
14/06/24 00:29:35 INFO zookeeper.ClientCnxn: Session establishment complete on server localhost.localdomain/127.0.0.1:2181, sessionid = 0x146cc8f6f8d0016
14/06/24 00:29:36 INFO zookeeper.RecoverableZooKeeper: The identifier of this process is 7503@localhost.localdomain
14/06/24 00:29:36 INFO client.HConnectionManager$HConnectionImplementation: Closed zookeeper sessionId=0x146cc8f6f8d0016
14/06/24 00:29:36 INFO zookeeper.ZooKeeper: Session: 0x146cc8f6f8d0016 closed
14/06/24 00:29:36 INFO zookeeper.ClientCnxn: EventThread shut down
row1 Date:col3 10000 Tue Jun 24 01:38:39 CDT 2014
row1 humidity:col7 10000 50.52705001831055
row1 latitude:col1 10000 39.03880037
row1 longitude:col2 10000 -94.58247355
row1 temperature:col8 10000 28.343659667968744
row1 x:col4 10000 -0.015625
row1 y:col5 10000 0.0625
row1 z:col6 10000 -1.015625
```

6. Verify table in Hbase UI view

Player Applications Places System Tue Jun 24, 12:33 AM cloud

HBase Master: localhost.localdomain,60000,1403591428476 - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Cloudera VM - Hadoop, mad... HBase Master: localhost.loc... HBase Master: localhost.loc...

localhost.localdomain:60010/master-status

Most Visited Cloudera Cloudera Manager Hue HDFS NameNode Hadoop JobTracker HBase Master Solr

Tables

Catalog Table	Description
-ROOT-	The -ROOT- table holds references to all .META. regions.
.META.	The .META. table holds references to all User Table regions

1 table(s) in set. [\[Details\]](#)

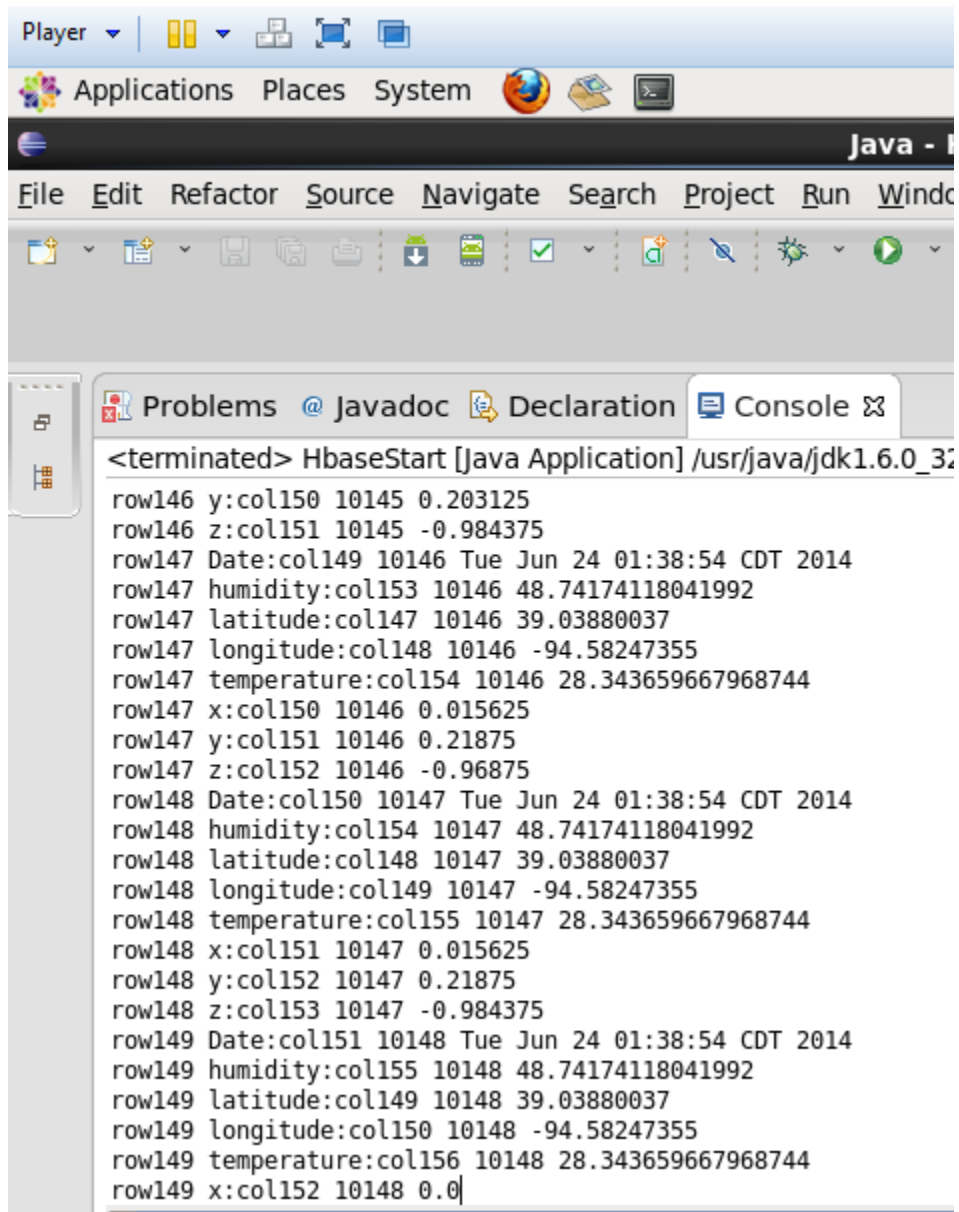
User Table	Online Regions	Description
Data_M	1	{NAME => 'Data_M', FAMILIES => [{(NAME => 'Date'), (NAME => 'humidity'), (NAME => 'latitude'), (NAME => 'longitude'), (NAME => 'temperature'), (NAME => 'x'), (NAME => 'y'), (NAME => 'z')}]}

Region Servers

	ServerName	Start time	Load
	localhost.localdomain,60020,1403591428581	Mon Jun 23 23:30:28 PDT 2014	requestsPerSecond=0, numberOfOnlineRegions=3, usedHeapMB=58, maxHeapMB=1021
Total:	servers: 1		requestsPerSecond=0, numberOfOnlineRegions=3

Load is requests per second and count of regions loaded

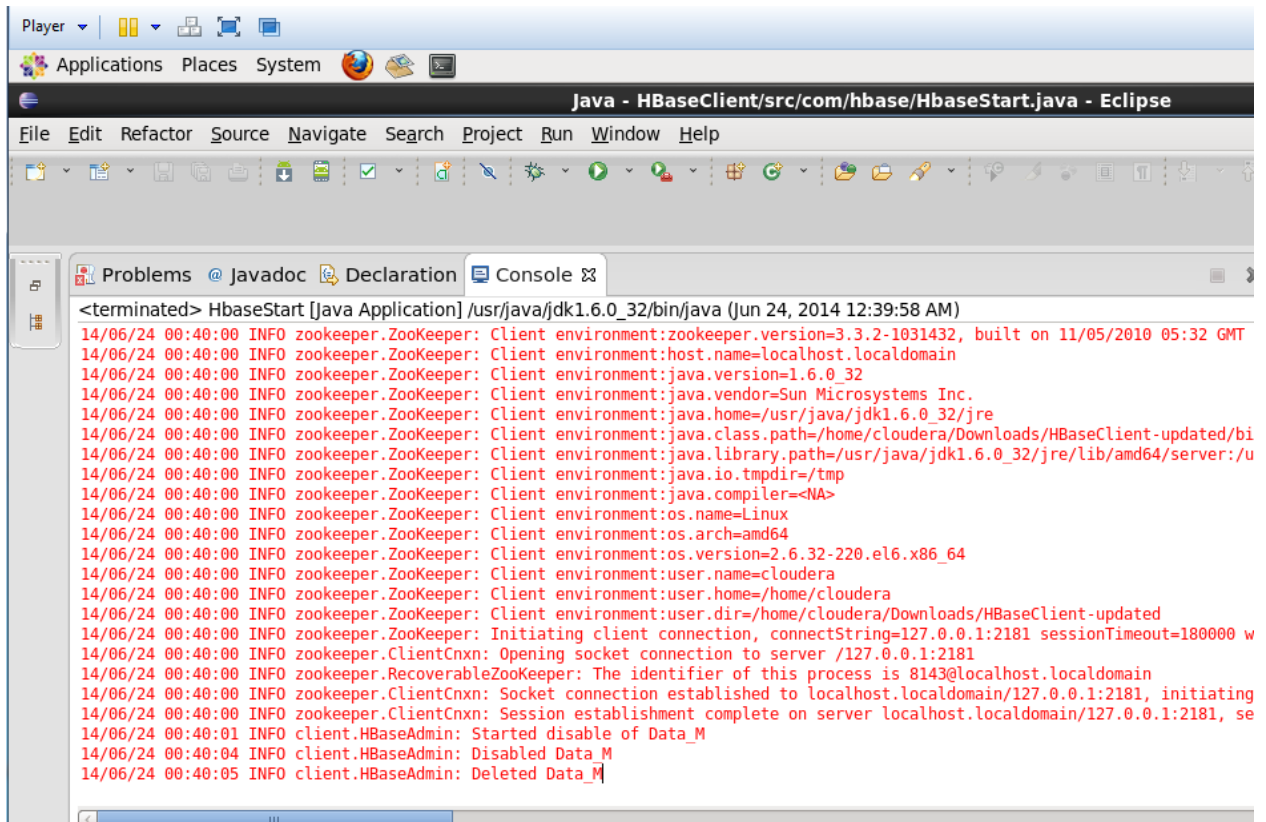
7. Retrieving all data in table



The screenshot shows an IDE window with a console output. The title bar indicates the application is 'Java - I'. The menu bar includes 'File', 'Edit', 'Refactor', 'Source', 'Navigate', 'Search', 'Project', 'Run', and 'Window'. The toolbar contains various icons for file operations and development tools. The console tab is active, showing the output of a Java application named 'HbaseStart'. The output begins with '<terminated> HbaseStart [Java Application] /usr/java/jdk1.6.0_32' and lists data for rows 146, 147, 148, and 149. Each row contains a date, humidity, latitude, longitude, temperature, and an 'x' coordinate. The data for row 149 is partially cut off at the end of the line.

```
<terminated> HbaseStart [Java Application] /usr/java/jdk1.6.0_32
row146 y:col150 10145 0.203125
row146 z:col151 10145 -0.984375
row147 Date:col149 10146 Tue Jun 24 01:38:54 CDT 2014
row147 humidity:col153 10146 48.74174118041992
row147 latitude:col147 10146 39.03880037
row147 longitude:col148 10146 -94.58247355
row147 temperature:col154 10146 28.343659667968744
row147 x:col150 10146 0.015625
row147 y:col151 10146 0.21875
row147 z:col152 10146 -0.96875
row148 Date:col150 10147 Tue Jun 24 01:38:54 CDT 2014
row148 humidity:col154 10147 48.74174118041992
row148 latitude:col148 10147 39.03880037
row148 longitude:col149 10147 -94.58247355
row148 temperature:col155 10147 28.343659667968744
row148 x:col151 10147 0.015625
row148 y:col152 10147 0.21875
row148 z:col153 10147 -0.984375
row149 Date:col151 10148 Tue Jun 24 01:38:54 CDT 2014
row149 humidity:col155 10148 48.74174118041992
row149 latitude:col149 10148 39.03880037
row149 longitude:col150 10148 -94.58247355
row149 temperature:col156 10148 28.343659667968744
row149 x:col152 10148 0.0|
```

8. Finally delete table



```
<terminated> HbaseStart [Java Application] /usr/java/jdk1.6.0_32/bin/java (Jun 24, 2014 12:39:58 AM)
14/06/24 00:40:00 INFO zookeeper.ZooKeeper: Client environment:zookeeper.version=3.3.2-1031432, built on 11/05/2010 05:32 GMT
14/06/24 00:40:00 INFO zookeeper.ZooKeeper: Client environment:host.name=localhost.localdomain
14/06/24 00:40:00 INFO zookeeper.ZooKeeper: Client environment:java.version=1.6.0_32
14/06/24 00:40:00 INFO zookeeper.ZooKeeper: Client environment:java.vendor=Sun Microsystems Inc.
14/06/24 00:40:00 INFO zookeeper.ZooKeeper: Client environment:java.home=/usr/java/jdk1.6.0_32/jre
14/06/24 00:40:00 INFO zookeeper.ZooKeeper: Client environment:java.class.path=/home/cloudera/Downloads/HBaseClient-updated/bi
14/06/24 00:40:00 INFO zookeeper.ZooKeeper: Client environment:java.library.path=/usr/java/jdk1.6.0_32/jre/lib/amd64/server:/u
14/06/24 00:40:00 INFO zookeeper.ZooKeeper: Client environment:java.io.tmpdir=/tmp
14/06/24 00:40:00 INFO zookeeper.ZooKeeper: Client environment:java.compiler=<NA>
14/06/24 00:40:00 INFO zookeeper.ZooKeeper: Client environment:os.name=Linux
14/06/24 00:40:00 INFO zookeeper.ZooKeeper: Client environment:os.arch=amd64
14/06/24 00:40:00 INFO zookeeper.ZooKeeper: Client environment:os.version=2.6.32-220.el6.x86_64
14/06/24 00:40:00 INFO zookeeper.ZooKeeper: Client environment:user.name=cloudera
14/06/24 00:40:00 INFO zookeeper.ZooKeeper: Client environment:user.home=/home/cloudera
14/06/24 00:40:00 INFO zookeeper.ZooKeeper: Client environment:user.dir=/home/cloudera/Downloads/HBaseClient-updated
14/06/24 00:40:00 INFO zookeeper.ZooKeeper: Initiating client connection, connectString=127.0.0.1:2181 sessionTimeout=180000 w
14/06/24 00:40:00 INFO zookeeper.ClientCnxn: Opening socket connection to server /127.0.0.1:2181
14/06/24 00:40:00 INFO zookeeper.RecoverableZooKeeper: The identifier of this process is 8143@localhost.localdomain
14/06/24 00:40:00 INFO zookeeper.ClientCnxn: Socket connection established to localhost.localdomain/127.0.0.1:2181, initiating
14/06/24 00:40:00 INFO zookeeper.ClientCnxn: Session establishment complete on server localhost.localdomain/127.0.0.1:2181, se
14/06/24 00:40:01 INFO client.HBaseAdmin: Started disable of Data_M
14/06/24 00:40:04 INFO client.HBaseAdmin: Disabled Data_M
14/06/24 00:40:05 INFO client.HBaseAdmin: Deleted Data_M
```

END of REPORT