Before creating a table, first create your own HBase namespace - name it your netID:

```
hbase(main):002:0> create_namespace 'hk2874'
0 row(s) in 0.1400 seconds
```

Create an HBase table named test1 in the namespace you created above and add a column family named cf1. List the tables in your namespace, verify that your new table is listed. View the attributes for each column family defined for the table.

```
hbase(main):005:0> status
1 active master, 0 backup masters, 32 servers, 8 dead, 30.3438 average load

hbase(main):006:0> version
1.2.0-cdh5.15.2, rUnknown, Tue Nov 13 06:03:26 PST 2018

hbase(main):007:0> whoami
hk2874 (auth:SIMPLE)
    groups: users, hk2874

hbase(main):008:0> create 'hk2874:test1','cf1'
0 row(s) in 4.2860 seconds

=> Hbase::Table - hk2874:test1
hbase(main):009:0> list_namespace_tables 'hk2874'
TABLE
test1
1 row(s) in 0.0120 seconds

hbase(main):010:0> describe 'hk2874:test1'
Table hk2874:test1 is ENABLED
hk2874:test1
COLUMN FAMILIES DESCRIPTION
{NAME => 'cf1', BLOOMFILTER => 'ROW', VERSIONS => '1', IN_MEMORY => 'false', KEE
P_DELETED_CELLS => 'FALSE', DATA_BLOCK_ENCODING => 'NONE', TTL => 'FOREVER', COM
PRESSION => 'NONE', MIN_VERSIONS => '0', BLOCKCACHE => 'true', BLOCKSIZE => '655
36', REPLICATION_SCOPE => '0'}
1 row(s) in 0.0700 seconds
```

Change the number of versions stored to 3 and view the attributes for each column family defined for the table.

```
hbase(main):011:0> alter 'hk2874:test1', NAME=>'cf1', VERSIONS =>3
Updating all regions with the new schema...
0/1 regions updated.
1/1 regions updated.
Done.
0 row(s) in 3.4610 seconds

hbase(main):012:0> describe 'hk2874:test1'
Table hk2874:test1 is ENABLED
hk2874:test1
COLUMN FAMILIES DESCRIPTION
{NAME => 'cf1', BLOOMFILTER => 'ROW', VERSIONS => '3', IN_MEMORY => 'false', KEE
P_DELETED_CELLS => 'FALSE', DATA_BLOCK_ENCODING => 'NONE', TTL => 'FOREVER', COM
PRESSION => 'NONE', MIN_VERSIONS => '0', BLOCKCACHE => 'true', BLOCKSIZE => '655
36', REPLICATION_SCOPE => '0'}
1 row(s) in 0.0190 seconds
```

Count the number of rows in table test1. Add a row with rowkey = '1000' , column family cf1, column name col1 and value 'my_value' to table test1. Display all rows in table test1. (Currently, there is just one row.)

```
hbase(main):013:0> count 'hk2874:test1'
0 row(s) in 0.0300 seconds

=> 0
hbase(main):014:0> put 'hk2874:test1','1000','cf1:col1','my_value'
0 row(s) in 0.0530 seconds

hbase(main):015:0> scan 'hk2874:test1'
ROW                   COLUMN+CELL
 1000                 column=cf1:col1, timestamp=1604467255813, value=my_value
1 row(s) in 0.0100 seconds
```

Add another row, set rowkey = '2000' , column family cf1, column name col1 and value 'my_value2' to table test1. Display all rows in table test1. (Currently, there are two rows.)

```
hbase(main):016:0> put 'hk2874:test1', '2000', 'cf1:col1', 'my_value2'
0 row(s) in 0.0460 seconds

hbase(main):017:0> scan 'hk2874:test1'
ROW                   COLUMN+CELL
 1000                 column=cf1:col1, timestamp=1604467255813, value=my_value
 2000                 column=cf1:col1, timestamp=1604467295964, value=my_value2
2 row(s) in 0.0090 seconds
```

Add another row with rowkey = ‘2000’ , column family cf1, column name col1 and value ’my_value3’ to table test1.
Display the most recently stored values (my_value3, not my_value2 is displayed).
Display all stored values (both my_value3, and my_value2 are displayed).
Display most recent value for rowkey = 1000. Display most recent value for rowkey = 2000.

```
hbase(main):018:0> put 'hk2874:test1', '2000', 'cf1:col1', 'my_value3'
0 row(s) in 0.0040 seconds

hbase(main):019:0> scan 'hk2874:test1'
ROW                   COLUMN+CELL
 1000                 column=cf1:col1, timestamp=1604467255813, value=my_value
 2000                 column=cf1:col1, timestamp=1604467323657, value=my_value3
2 row(s) in 0.0040 seconds

hbase(main):020:0> scan 'hk2874:test1', VERSIONS => 3
ROW                   COLUMN+CELL
 1000                 column=cf1:col1, timestamp=1604467255813, value=my_value
 2000                 column=cf1:col1, timestamp=1604467323657, value=my_value3
 2000                 column=cf1:col1, timestamp=1604467295964, value=my_value2
2 row(s) in 0.0060 seconds

hbase(main):021:0> get 'hk2874:test1', '1000'
COLUMN                CELL
 cf1:col1             timestamp=1604467255813, value=my_value
1 row(s) in 0.0060 seconds

hbase(main):022:0> get 'hk2874:test1', '2000'
COLUMN                CELL
 cf1:col1             timestamp=1604467323657, value=my_value3
1 row(s) in 0.0020 seconds
```

Display data for the specified rowkey and column.
Display all versions of data for specific rowkey and column.

```
hbase(main):023:0> get 'hk2874:test1', '2000', COLUMN=>'cf1:col1'
COLUMN                CELL
 cf1:col1             timestamp=1604467323657, value=my_value3
1 row(s) in 0.0030 seconds

hbase(main):024:0> get 'hk2874:test1', '2000', {COLUMN=>'cf1:col1', VERSIONS=>3}

COLUMN                CELL
 cf1:col1             timestamp=1604467323657, value=my_value3
 cf1:col1             timestamp=1604467295964, value=my_value2
2 row(s) in 0.0020 seconds
```

Add rows with rowkey = ‘2000’ , column cf1:col1 and values ’my_value4’ and ’my_value5’ to table test1.

```
hbase(main):025:0> put 'hk2874:test1', '2000', 'cf1:col1', 'my_value4'
0 row(s) in 0.0060 seconds

hbase(main):026:0> put 'hk2874:test1', '2000', 'cf1:col1', 'my_value5'
0 row(s) in 0.0050 seconds
```

Show up to 5 versions of data stored for rowkey = ‘2000’ , column cf1:col1. Why are only 3 versions shown? *This is because versions was altered to a predefined constant as 3 (VERSIONS => '3')*

```
hbase(main):027:0> get 'hk2874:test1', '2000', {COLUMN=>'cf1:col1', VERSIONS=>5}
COLUMN                CELL
 cf1:col1             timestamp=1604467956319, value=my_value5
 cf1:col1             timestamp=1604467941794, value=my_value4
 cf1:col1             timestamp=1604467323657, value=my_value3
3 row(s) in 0.0050 seconds
```

Change the number of versions stored to 2.

```
hbase(main):028:0> alter 'hk2874:test1',NAME=>'cf1', VERSIONS =>2
Updating all regions with the new schema...
0/1 regions updated.
1/1 regions updated.
Done.
0 row(s) in 3.6890 seconds
```

View the attributes for each column family defined for the table.

```
hbase(main):029:0> describe 'hk2874:test1'
Table hk2874:test1 is ENABLED
hk2874:test1
COLUMN FAMILIES DESCRIPTION
{NAME => 'cf1', BLOOMFILTER => 'ROW', VERSIONS => '2', IN_MEMORY => 'false', KEE
P_DELETED_CELLS => 'FALSE', DATA_BLOCK_ENCODING => 'NONE', TTL => 'FOREVER', COM
PRESSION => 'NONE', MIN_VERSIONS => '0', BLOCKCACHE => 'true', BLOCKSIZE => '655
36', REPLICATION_SCOPE => '0'}
1 row(s) in 0.0130 seconds
```

Display up to 5 versions, note that only 2 are shown - why is that? *The answer is similar to the previous question. This is because we have altered the table’s predefined version number to 2.*

```
hbase(main):030:0> get 'hk2874:test1', '2000', {COLUMN=>'cf1:col1', VERSIONS=>5}
COLUMN                CELL
 cf1:col1             timestamp=1604467956319, value=my_value5
 cf1:col1             timestamp=1604467941794, value=my_value4
2 row(s) in 0.0050 seconds
```