The following image shows column families in a column-oriented database:

Row key	personal data		professional data	
empid	name	city	designation	salary
1	raju	hyderabad	manager	50,000
2	ravi	chennai	sr.engineer	30,000
3	rajesh	delhi	jr.engineer	25,000

COLUMN FAMILIES
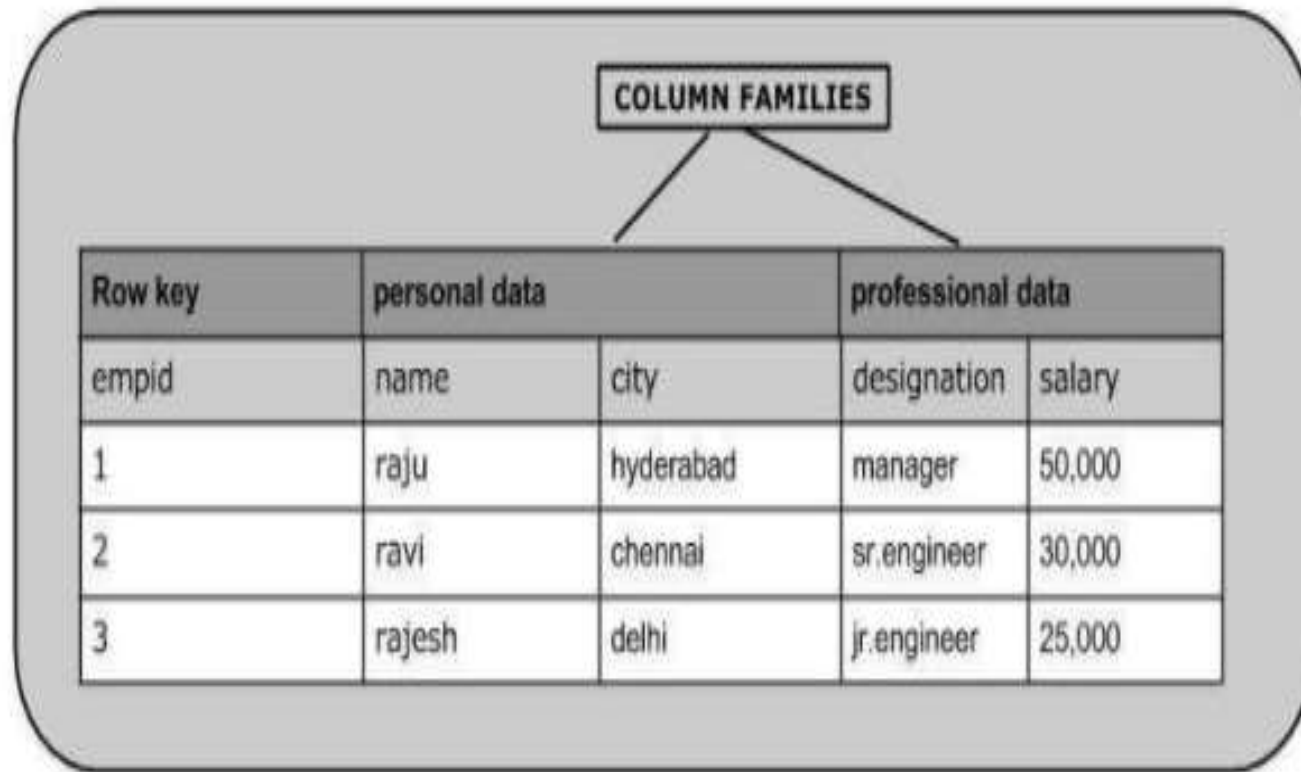
TO START HBASE
[cloudera@localhost ~]$ hbase shell

GENERAL SHELL COMMANDS

hbase(main):001:0> status

1 servers, 0 dead, 2.0000 average load

hbase(main):002:0> version

0.94.6-cdh4.4.0, rUnknown, Tue Sep 3 20:09:51 PDT 2013

hbase(main):003:0> whoami

cloudera (auth:SIMPLE)

hbase(main):004:0> table_help

Help for table-reference commands.

HBase- CREATE TABLE & VERIFY

hbase(main):007:0> create   'emp','personal data','professional data'

hbase(main):008:0> describe 'emp'

To Verify table

hbase(main):008:0> list

TABLE

emp

hbase(main):014:0> exists   'emp'

Table emp does exist

HBase- STORE DATA IN TABLE

Insertion of data to first row

hbase(main):009:0> put   'emp','row1','personal data:name','raju'

hbase(main):010:0> put 'emp','row1','personal data:city','hyd'

hbase(main):011:0> put 'emp','row1','professional data:designation','manager'

hbase(main):012:0> put 'emp','row1','professional data:salary','50000'

hbase(main):013:0> scan 'emp'

ROW   COLUMN+CELL

 row1   column=personal data:city, timestamp=1523425226089, value=hyd

row1	column=personal data:name, timestamp=1523425200247, value=raju
row1	column=professional data:designation, timestamp=1523425255478, value=manager
row1	column=professional data:salary, timestamp=1523425270378, value=50000

Insertion of data to second row

hbase(main):013:0> put 'emp','row2','personal data:name','milind'
hbase(main):018:0> put 'emp','row2','personal data:city','chennai'
hbase(main):020:0> put 'emp','row2','professional data:designation','soft Engineer'
hbase(main):015:0> put 'emp','row2','professional data:salary','30000'

Insertion of data to third row

hbase(main):022:0> put 'emp','row3','personal data:name','anita'
hbase(main):023:0> put 'emp','row3','personal data:city','delhi'
hbase(main):024:0> put 'emp','row3','professional data:designation','tester'
hbase(main):025:0> put 'emp','row3','professional data:salary','40000'

TO READ THE DATA WHICH HAS BEEN ENTERED

➢ **SCAN command reads all rows of that table**

hbase(main):026:0> scan 'emp'

ROW	COLUMN+CELL
row1	column=personal data:city, timestamp=1523426980414, value=hyd
row1	column=personal data:name, timestamp=1523426797711, value=raju
row1	column=professional data:designation, timestamp=1523426835511, value=manager
row1	column=professional data:salary, timestamp=1523426852045, value=50000
row2	column=personal data:city, timestamp=1523427018284, value=chennai
row2	column=personal data:name, timestamp=1523426910414, value=milind
row2	column=professional data:designation, timestamp=1523427061723, value=soft Engineer
row2	column=professional data:salary, timestamp=1523426965356, value=30000
row3	column=personal data:city, timestamp=1523427129733, value=delhi

```
row3                    column=personal data:name, timestamp=1523427115249, value=anita
row3                    column=professional data:designation, timestamp=1523427162000, value=tester
row3                    column=professional data:salary, timestamp=1523427187838, value=40000
        3   row(s) in 0.0190 seconds
```

```
hbase(main):027:0> get  'emp','row3'
COLUMN                    CELL
 personal data:city           timestamp=1523427129733, value=delhi
 personal data:name           timestamp=1523427115249, value=anita
 professional data:designation    timestamp=1523427162000, value=tester
 professional data:salary        timestamp=1523427187838, value=40000


hbase(main):004:0> get 'emp','row3',{COLUMN=>'personal  data:city'}
COLUMN                    CELL
 personal data:city           timestamp=1523427129733, value=delhi
```

NOTE!!! COLUMN must be in CAPITAL letters

```
*********************************************************************************
hbase(main):020:0> list
TABLE
emp
example
expert
```

TO UPDATE/MODIFY THE EXISTING DATA
Updating the row3 personal data column family's city column with different values

```
hbase(main):008:0> put   'emp','row3','personal data:city','2bang'
```

hbase(main):009:0> put 'emp','row3','personal data:city','3kochi'
hbase(main):010:0> get 'emp','row3',{COLUMN=>'personal data:city',VERSIONS=>3}
COLUMN   CELL
 personal data:city   timestamp=1523428351922, value=3kochi
 personal data:city   timestamp=1523428337355, value=2bang
 personal data:city   timestamp=1523427129733, value=delhi

hbase(main):011:0> put 'emp','row3','personal data:city','4dehradun'
hbase(main):012:0> get 'emp','row3',{COLUMN=>'personal data:city',VERSIONS=>3}
COLUMN   CELL
 personal data:city   timestamp=1523428391129, value=4dehradun
 personal data:city   timestamp=1523428351922, value=3kochi
 personal data:city   timestamp=1523428337355, value=2bang

hbase(main):013:0> get 'emp','row3',{COLUMN=>'personal data:city',VERSIONS=>2}
COLUMN   CELL
 personal data:city   timestamp=1523428391129, value=4dehradun
 personal data:city   timestamp=1523428351922, value=3kochi
TO DISABLE THE TABLE
AFTER disable: "list" command will display the table name but "scan" command command will show error

hbase(main):024:0> disable 'expert'
hbase(main):020:0> list
TABLE
emp
example
expert

hbase(main):027:0> scan 'expert'
ROW   COLUMN+CELL

ERROR: org.apache.hadoop.hbase.DoNotRetryIOException: expert is disabled.

TO ALTER TABLE to add additional column family 'xyz with version 5'
hbase(main):017:0> disable 'emp'
hbase(main):018:0> alter 'emp',NAME=>'xyz',VERSIONS=>5
hbase(main):020:0> enable 'emp'
hbase(main):022:0> describe 'emp'
DESCRIPTION   ENABLED
{NAME => 'personal data', DATA_BLOCK_ENCODING => 'NONE', BLOOMFI
 LTER => 'NONE', REPLICATION_SCOPE => '0', VERSIONS => '3', COMPRESSION => 'NONE', MIN_VERSIONS => '0
 ', TTL => '2147483647', KEEP_DELETED_CELLS => 'false', BLOCKSIZE => '65536', IN_MEMORY => 'false', E
 NCODE_ON_DISK => 'true', BLOCKCACHE => 'true'}, {NAME => 'professional data', DATA_BLOCK_ENCODING =>
 'NONE', BLOOMFILTER => 'NONE', REPLICATION_SCOPE => '0', VERSIONS => '3', COMPRESSION => 'NONE', MI
 N_VERSIONS => '0', TTL => '2147483647', KEEP_DELETED_CELLS => 'false', BLOCKSIZE => '65536', IN_MEMO
 RY => 'false', ENCODE_ON_DISK => 'true', BLOCKCACHE => 'true'}, {NAME => 'emp', FAMILIES => [{NAME => 'xyz',
 DATA_BLOCK_ENCODING => 'NONE', BLOOMFILTER => 'NON true
 E', REPLICATION_SCOPE => '0', COMPRESSION => 'NONE', VERSIONS => '5', TTL => '2147483647', MIN_VERSI
 ONS => '0', KEEP_DELETED_CELLS => 'false', BLOCKSIZE => '65536', ENCODE_ON_DISK => 'true', IN_MEMORY
 => 'false', BLOCKCACHE => 'true'},]}

hbase(main):023:0> put 'emp','row3','xyz:city','5mumbai'
hbase(main):024:0> put 'emp','row3','xyz:city','6jodhpur'
hbase(main):028:0> put 'emp','row3', 'xyz:city','7hubli'
hbase(main):029:0> put 'emp','row3', 'xyz:city','8london'
hbase(main):030:0> put 'emp','row3', 'xyz:city','9shimla'
hbase(main):031:0> put 'emp','row3', 'xyz:city','10kanpur'
hbase(main):032:0> put 'emp','row3',' xyz:city','11nagpur'

hbase(main):033:0> get 'emp','row3',{COLUMN=>'xyz:city',VERSIONS=>5}
COLUMN   CELL
xyz:city   timestamp=1523431975773, value=11nagpur

```
 xyz:city                    timestamp=1523431968306, value=10kanpur
 xyz:city                    timestamp=1523431961690, value=9shimla
xyz:city                     timestamp=1523431953548, value=8london
xyz:city                     timestamp=1523431947056, value=7hubli
5 row(s) in 0.0080 seconds
```
hbase(main):034:0> scan 'emp'
```
ROW                    COLUMN+CELL
 row1                  column=personal data:city, timestamp=1523426980414, value=hyd
 row1                  column=personal data:name, timestamp=1523426797711, value=raju
 row1                  column=professional data:designation, timestamp=1523426835511, value=manager
 row1                  column=professional data:salary, timestamp=1523426852045, value=50000
 row2                  column=personal data:city, timestamp=1523427018284, value=chennai
 row2                  column=personal data:name, timestamp=1523426910414, value=milind
 row2                  column=professional data:designation, timestamp=1523427061723, value=soft Engineer
 row2                  column=professional data:salary, timestamp=1523426965356, value=30000
 row3                  column=personal data:city, timestamp=1523428391129, value=4dehradun
 row3                  column=personal data:name, timestamp=1523427115249, value=anita
 row3                  column=professional data:designation, timestamp=1523427162000, value=tester
 row3                  column=professional data:salary, timestamp=1523427187838, value=40000
 row3                  column=xyz:city, timestamp=1523431975773, value=11nagpur
3 row(s) in 0.0620 seconds
```

<p align="center">TO DELETE</p>

A PARTICULAR COLUMN FAMILY
hbase(main):037:0> disable 'emp'
hbase(main):038:0> alter 'emp','delete'=>'xyz'
hbase(main):039:0> enable 'emp'
hbase(main):042:0> get 'emp','row3'
```
COLUMN                    CELL
 personal data:city       timestamp=1523428391129, value=4dehradun
 personal data:name       timestamp=1523427115249, value=anita
```

```
 professional data:designation        timestamp=1523427162000, value=tester
 professional data:salary            timestamp=1523427187838, value=40000
4 row(s) in 0.0080 seconds
```

A SPECIFIC CELL IN TABLE

hbase(main):045:0> delete 'emp','row3','personal data:name'
hbase(main):046:0> get 'emp','row3'
```
COLUMN                        CELL
 personal data:city          timestamp=1523428391129, value=4dehradun
 professional data:designation       timestamp=1523427162000, value=tester
 professional data:salary            timestamp=1523427187838, value=40000
3 row(s) in 0.1870 seconds
```
DELETE COMPLETE ROW IN TABLE

hbase(main):049:0> deleteall 'emp','row3'
hbase(main):050:0> get 'emp','row3'
```
COLUMN                        CELL
0 row(s) in 0.0340 seconds
```
hbase(main):051:0> scan 'emp'
```
ROW                      COLUMN+CELL
 row1                    column=personal data:city, timestamp=1523426980414, value=hyd
 row1                    column=personal data:name, timestamp=1523426797711, value=raju
 row1                    column=professional data:designation, timestamp=1523426835511, value=manager
 row1                    column=professional data:salary, timestamp=1523426852045, value=50000
 row2                    column=personal data:city, timestamp=1523427018284, value=chennai
 row2                    column=personal data:name, timestamp=1523426910414, value=milind
 row2                    column=professional data:designation, timestamp=1523427061723, value=soft Engineer
 row2                    column=professional data:salary, timestamp=1523426965356, value=30000
2 row(s) in 0.0390 seconds
```

TO DROP THE TABLE

To drop , first table has to be disabled.

hbase(main):005:0> list

TABLE

emp

example

exp

expert

hbase(main):024:0> disable 'expert'

hbase(main):001:0> drop 'expert'

hbase(main):002:0> list

TABLE

emp

example

To drop all three table which starts with name 'ex'

hbase(main):006:0> disable_all 'ex.*'

example

exp

expert

Disable the above 3 tables (y/n)?

y

3 tables successfully disabled

hbase(main):007:0> drop_all 'ex.*'

example

exp

expert

Drop the above 3 tables (y/n)?
y
3 tables successfully dropped

hbase(main):052:0> count 'emp'
2 row(s) in 0.7080 seconds