

The main objective of this in class is to create commands for Hadoop Dependent Column based No SQL Tool -HBase.

Created 5 tables for the below cases

- a. Use Case 1: Locations
- b. Use Case 2: Student Courses
- c. Use Case 3: User –Action
- d. Use Case 4: User –Friends
- e. Use Case 5: Access Log

Below are the commands followed for the execution

### **USECASE-1**

Creating a table with name Table01 and adding a column family Location which contains country, state and city columns

```
> create 'Table01', 'Location'
```

```
> put 'Table01', '1', 'Location:country', 'USA'
> put 'Table01', '1', 'Location:state', 'Kansas'
> put 'Table01', '1', 'Location:City', 'Kansas City'
> put 'Table01', '2', 'Location:country', 'USA'
> put 'Table01', '2', 'Location:state', 'Missouri'
> put 'Table01', '2', 'Location:City', 'Kansas City'
> put 'Table01', '3', 'Location:country', 'India'
> put 'Table01', '3', 'Location:state', 'Andhra Pradesh'
> put 'Table01', '3', 'Location:City', 'Vizag'
```

```
scan 'Table1'
describe 'Table01'
count 'Table01'
get 'Table01','1'
```

**Output Screenshots:**

```
sridevi@srdevi-VirtualBox:~$ hbase(main):006:0> put 'Table01', '2', 'Location:country', 'USA'
0 row(s) in 0.0240 seconds

hbase(main):007:0> put 'Table01', '2', 'Location:state', 'Missouri'
0 row(s) in 0.0320 seconds

hbase(main):008:0> put 'Table01', '2', 'Location:City', 'Kansas City'
0 row(s) in 0.0340 seconds

hbase(main):009:0> put 'Table01', '3', 'Location:country', 'India'
0 row(s) in 0.0160 seconds

hbase(main):010:0> put 'Table01', '3', 'Location:state', 'Andhra Pradesh'
0 row(s) in 0.0380 seconds

hbase(main):011:0> put 'Table01', '3', 'Location:City', 'Hyderabad'
0 row(s) in 0.0370 seconds

hbase(main):012:0> scan 'Table01'
ROW
1      COLUMN=Location:City, timestamp=1529264887665, value=Kansas City
1      COLUMN=Location:country, timestamp=1529264847778, value=USA
1      COLUMN=Location:state, timestamp=1529264865388, value=Kansas
2      COLUMN=Location:City, timestamp=1529264923952, value=Kansas City
2      COLUMN=Location:country, timestamp=1529264899154, value=USA
2      COLUMN=Location:state, timestamp=1529264910966, value=Missouri
3      COLUMN=Location:City, timestamp=1529264975470, value=Hyderabad
3      COLUMN=Location:country, timestamp=1529264935300, value=India
3      COLUMN=Location:state, timestamp=1529264953297, value=Andhra Pradesh
3 row(s) in 0.2150 seconds

hbase(main):013:0> describe 'Table01'
DESCRIPTION
'Table01', (NAME => 'Location', ENCODE_ON_DISK => 'true', BLOOMFILTER => 'NONE', VERSIONS => '3', IN_MEMORY => 'false', KEEP_DELETE true
0 CELLS => 'false', DATA_BLOCK_ENCODING => 'NONE', TTL => '2147483647', COMPRESSION => 'NONE', MIN_VERSIONS => '0', BLOCKCACHE => '
true', BLOCKSIZE => '65536', REPLICATION_SCOPE => '0')
1 row(s) in 0.1010 seconds

hbase(main):014:0> count 'Table01'
3 row(s) in 0.1250 seconds

hbase(main):015:0> get 'Table01','1'
COLUMN
Location:City      timestamp=1529264887665, value=Kansas City
Location:country   timestamp=1529264847778, value=USA
Location:state     timestamp=1529264865388, value=Kansas
3 row(s) in 0.0630 seconds

hbase(main):016:0>
```

## USECASE-2

Creating a table with name Table2 and adding a column family Student and Courses which contains Student details and courses enrolled by each student

> create 'Table2','Student', 'Courses'

```
> put 'Table2', '1', 'Student:Name', 'Sridevi'
> put 'Table2', '1', 'Student:SEX', 'Female'
> put 'Table2', '1', 'Student:AGE', '24'
> put 'Table2', '2', 'Student:Name', 'Pranoop'
> put 'Table2', '2', 'Student:SEX', 'Male'
> put 'Table2', '2', 'Student:AGE', '20'
> put 'Table2', '3', 'Student:Name', 'Pragathi'
> put 'Table2', '3', 'Student:SEX', 'Female'
> put 'Table2', '3', 'Student:AGE', '20'
```

```

put 'Table2', '1', 'Courses:Course1','ISL'
put 'Table2', '1', 'Courses:Course2', 'Big Data'
put 'Table2', '2', 'Courses:Course1','Python'
put 'Table2', '2', 'Courses:Course2', 'ASE'
put 'Table2', '3', 'Courses:Course1','Big Data'
put 'Table2', '3', 'Courses:Course2', 'ISL'

scan 'Table2'
describe 'Table2'
count 'Table2'
get 'Table2','2'

```

Creating a table with name Table2b and adding a column family CourseInfo and Student which contains Course details and Students enrolled in each course

```

> create 'Table2b','CourseInfo', 'Student'

> put 'Table2b', '1', 'CourseInfo:Title','ISL'
> put 'Table2b', '1', 'CourseInfo:Intro', 'Statistical Learning'
> put 'Table2b', '1', 'CourseInfo:Teacher', 'Deep Medhi'
> put 'Table2b', '2', 'CourseInfo:Title','Python'
> put 'Table2b', '2', 'CourseInfo:Intro', 'Deep Learning'
> put 'Table2b', '2', 'CourseInfo:Teacher', 'Lee'
> put 'Table2b', '3', 'CourseInfo:Title','Big Data'
> put 'Table2b', '3', 'CourseInfo:Intro', 'Hadoop and spark'
> put 'Table2b', '3', 'CourseInfo:Teacher', 'Lee'

```

```

put 'Table2b', '1', 'Student:Stu1','Sridevi'
put 'Table2b', '1', 'Student:Stu2', 'Vardhini'
put 'Table2b', '1', 'Student:Stu3', 'Pragathi'
put 'Table2b', '2', 'Student:Stu1','Srilu'
put 'Table2b', '2', 'Student:Stu2', 'Sanjana'
put 'Table2b', '2', 'Student:Stu3', 'Pranoop'
put 'Table2b', '3', 'Student:Stu1','Lalitha'
put 'Table2b', '3', 'Student:Stu2', 'Vardhini'
put 'Table2b', '3', 'Student:Stu3', 'Sridevi'

```

```

scan 'Table2b'
count 'Table2b'
get 'Table2b','2'

```

**Output Screenshots:**

```
sridevi@sridevi-VirtualBox:~$ hbase(main):039:0> put 'Table2b', '1', 'CourseInfo:Teacher', 'Deep Medhi'
0 row(s) in 0.0230 seconds

hbase(main):040:0> put 'Table2b', '2', 'CourseInfo:Title', 'Python'
0 row(s) in 0.0320 seconds

hbase(main):041:0> put 'Table2b', '2', 'CourseInfo:Intro', 'Deep Learning'
0 row(s) in 0.0280 seconds

hbase(main):042:0> put 'Table2b', '2', 'CourseInfo:Teacher', 'Lee'
0 row(s) in 0.0510 seconds

hbase(main):043:0> put 'Table2b', '3', 'CourseInfo:Title', 'Big Data'
0 row(s) in 0.0340 seconds

hbase(main):044:0> put 'Table2b', '3', 'CourseInfo:Intro', 'Hadoop and spark'
0 row(s) in 0.0340 seconds

hbase(main):045:0> put 'Table2b', '3', 'CourseInfo:Teacher', 'Lee'
0 row(s) in 0.0360 seconds

hbase(main):046:0> put 'Table2b', '1', 'Student:Stu1', 'Sridevi'
0 row(s) in 0.0250 seconds

hbase(main):047:0> put 'Table2b', '1', 'Student:Stu2', 'Vardhini'
0 row(s) in 0.0740 seconds

hbase(main):048:0> put 'Table2b', '1', 'Student:Stu3', 'Pragathi'
0 row(s) in 0.0410 seconds

hbase(main):049:0> put 'Table2b', '2', 'Student:Stu1', 'Srilu'
0 row(s) in 0.0220 seconds

hbase(main):050:0> put 'Table2b', '2', 'Student:Stu2', 'Sanjana'
0 row(s) in 0.1380 seconds

hbase(main):051:0> put 'Table2b', '2', 'Student:Stu3', 'Pranoop'
0 row(s) in 0.0560 seconds

hbase(main):052:0> put 'Table2b', '3', 'Student:Stu1', 'Lalitha'
0 row(s) in 0.0360 seconds

hbase(main):053:0> put 'Table2b', '3', 'Student:Stu2', 'Vardhini'
0 row(s) in 0.0340 seconds

hbase(main):054:0> put 'Table2b', '3', 'Student:Stu3', 'Sridevi'
0 row(s) in 0.0190 seconds

hbase(main):055:0>
```

```
sridevi@sridevi-VirtualBox:~$ hbase(main):051:0> put 'Table2b', '2', 'Student:Stu3', 'Pranoop'
0 row(s) in 0.0560 seconds

hbase(main):052:0> put 'Table2b', '3', 'Student:Stu1', 'Lalitha'
0 row(s) in 0.0360 seconds

hbase(main):053:0> put 'Table2b', '3', 'Student:Stu2', 'Vardhini'
0 row(s) in 0.0340 seconds

hbase(main):054:0> put 'Table2b', '3', 'Student:Stu3', 'Sridevi'
0 row(s) in 0.0190 seconds

hbase(main):055:0> scan 'Table2b'

ROW
1 column=CourseInfo:Intro, timestamp=152926085628, value=Statistical Learning
1 column=CourseInfo:Teacher, timestamp=1529266128679, value=Deep Medhi
1 column=CourseInfo:Title, timestamp=1529260875851, value=ISL
1 column=Student:Stu1, timestamp=1529266270726, value=Sridevi
1 column=Student:Stu2, timestamp=1529266322743, value=Vardhini
1 column=Student:Stu3, timestamp=1529266353692, value=Pragathi
2 column=CourseInfo:Intro, timestamp=1529266146601, value=Deep Learning
2 column=CourseInfo:Teacher, timestamp=1529266158502, value=Lee
2 column=CourseInfo:Title, timestamp=1529266134997, value=Python
2 column=Student:Stu1, timestamp=1529266467897, value=Srilu
2 column=Student:Stu2, timestamp=1529266492860, value=Sanjana
2 column=Student:Stu3, timestamp=1529266547972, value=Pranoop
3 column=CourseInfo:Intro, timestamp=1529266185681, value=Hadoop and spark
3 column=CourseInfo:Teacher, timestamp=1529266195880, value=Lee
3 column=CourseInfo:Title, timestamp=1529266175066, value=Big Data
3 column=Student:Stu1, timestamp=1529266580743, value=Lalitha
3 column=Student:Stu2, timestamp=1529266623597, value=Vardhini
3 column=Student:Stu3, timestamp=1529266655139, value=Sridevi
3 row(s) in 0.2300 seconds

hbase(main):056:0> count 'Table2b'
3 row(s) in 0.0730 seconds

hbase(main):057:0> get 'Table2b', '2'

COLUMN
CourseInfo:Intro timestamp=1529266146601, value=Deep Learning
CourseInfo:Teacher timestamp=1529266158502, value=Lee
CourseInfo:Title timestamp=1529266134997, value=Python
Student:Stu1 timestamp=1529266467897, value=Srilu
Student:Stu2 timestamp=1529266492860, value=Sanjana
Student:Stu3 timestamp=1529266547972, value=Pranoop
6 row(s) in 0.0360 seconds

hbase(main):058:0>
```

## USECASE -3

Creating a table with name Table3 and adding a column family UserDetails and EventDetails

create 'Table3','UserDetails', 'EventDetails'

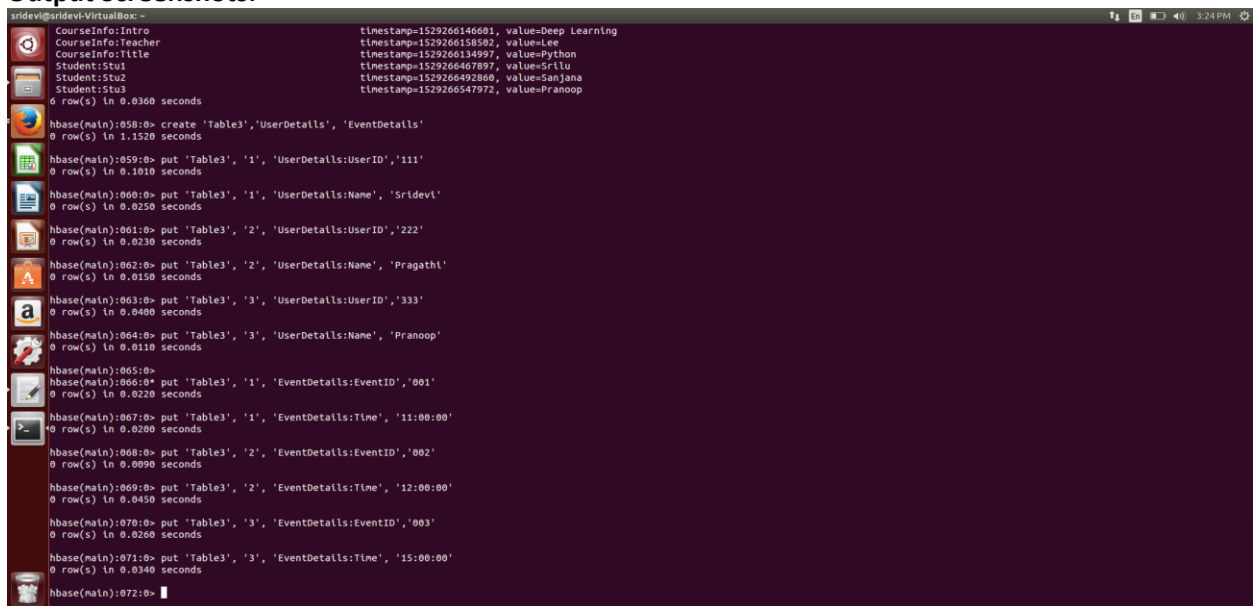
> put 'Table3', '1', 'UserDetails:UserID', '111'

```
> put 'Table3', '1', 'UserDetails:Name', 'Sridevi'
> put 'Table3', '2', 'UserDetails:UserID','222'
> put 'Table3', '2', 'UserDetails:Name', 'Pragathi'
> put 'Table3', '3', 'UserDetails:UserID','333'
> put 'Table3', '3', 'UserDetails:Name', 'Pranoop'
```

```
> put 'Table3', '1', 'EventDetails:EventID','001'
> put 'Table3', '1', 'EventDetails:Time', '11:00:00'
> put 'Table3', '2', 'EventDetails:EventID','002'
> put 'Table3', '2', 'EventDetails:Time', '12:00:00'
> put 'Table3', '3', 'EventDetails:EventID','003'
> put 'Table3', '3', 'EventDetails:Time', '15:00:00'
```

```
scan 'Table3'
count 'Table3'
get 'Table3','2'
```

## Output Screenshots:



```
sridevi@sridevi-VirtualBox:~$ hbase(main):000:0> create 'Table3','UserDetails','EventDetails'
timestamp=1529266146081, value=Deep Learning
timestamp=1529266158982, value=Lee
timestamp=1529266134997, value=Python
timestamp=1529266467897, value=Srilu
timestamp=1529266492868, value=Sanjana
timestamp=1529266547972, value=Pranoop
0 row(s) in 0.0360 seconds

hbase(main):058:0> create 'Table3','UserDetails','EventDetails'
0 row(s) in 1.1520 seconds

hbase(main):059:0> put 'Table3','1','UserDetails:UserID','111'
0 row(s) in 0.1010 seconds

hbase(main):060:0> put 'Table3','1','UserDetails:Name','Sridevi'
0 row(s) in 0.0250 seconds

hbase(main):061:0> put 'Table3','2','UserDetails:UserID','222'
0 row(s) in 0.0230 seconds

hbase(main):062:0> put 'Table3','2','UserDetails:Name','Pragathi'
0 row(s) in 0.0150 seconds

hbase(main):063:0> put 'Table3','3','UserDetails:UserID','333'
0 row(s) in 0.0400 seconds

hbase(main):064:0> put 'Table3','3','UserDetails:Name','Pranoop'
0 row(s) in 0.0110 seconds

hbase(main):065:0>
hbase(main):066:0> put 'Table3','1','EventDetails:EventID','001'
0 row(s) in 0.0220 seconds

hbase(main):067:0> put 'Table3','1','EventDetails:Time','11:00:00'
0 row(s) in 0.0200 seconds

hbase(main):068:0> put 'Table3','2','EventDetails:EventID','002'
0 row(s) in 0.0090 seconds

hbase(main):069:0> put 'Table3','2','EventDetails:Time','12:00:00'
0 row(s) in 0.0450 seconds

hbase(main):070:0> put 'Table3','3','EventDetails:EventID','003'
0 row(s) in 0.0260 seconds

hbase(main):071:0> put 'Table3','3','EventDetails:Time','15:00:00'
0 row(s) in 0.0340 seconds

hbase(main):072:0>
```

```
sridevi@sridevi-VirtualBox:~$ hbase(main):070:0> put 'Table3', '3', 'EventDetails:EventID', '003'
0 row(s) in 0.0450 seconds

hbase(main):071:0> put 'Table3', '3', 'EventDetails:Time', '15:00:00'
0 row(s) in 0.0340 seconds

hbase(main):072:0> Scan 'Table3'
NoMethodError: undefined method 'Scan' for #<Object:0x291373d3>

hbase(main):073:0> scan 'Table3'
ROW
1
1
1
2
2
2
3
3
3
3
COLUMN=CELL
column=EventDetails:EventID, timestamp=1529267010207, value=001
column=EventDetails:Time, timestamp=1529267022128, value=11:00:00
column=UserDetails:Name, timestamp=1529266949077, value=Sridevi
column=UserDetails:UserID, timestamp=1529266918030, value=111
column=EventDetails:EventID, timestamp=1529267032357, value=002
column=EventDetails:Time, timestamp=1529267041981, value=12:00:00
column=UserDetails:Name, timestamp=1529266971258, value=Pragathi
column=UserDetails:UserID, timestamp=1529266959817, value=222
column=EventDetails:EventID, timestamp=1529267053027, value=003
column=EventDetails:Time, timestamp=1529267073250, value=15:00:00
column=UserDetails:Name, timestamp=1529266996559, value=Pranoop
column=UserDetails:UserID, timestamp=1529266980759, value=333
3 row(s) in 0.0640 seconds

hbase(main):074:0> count 'Table3'
hbase(main):075:0> count 'Table3'
hbase(main):076:0>
hbase(main):077:0>
hbase(main):078:0> sridevi@sridevi-VirtualBox:~$ hbase shell
sridevi@sridevi-VirtualBox:~$ hbase shell
HBase Shell; enter 'help<RETURN>' for list of supported commands.
Type "exit<RETURN>" to leave the HBase Shell
Version 0.94.0, r1485407, Wed May 22 20:53:13 UTC 2013

hbase(main):001:0> count 'Table3'
3 row(s) in 1.0400 seconds

hbase(main):002:0> get 'Table3', '2'
COLUMN
EventDetails:EventID
EventDetails:Time
UserDetails:Name
UserDetails:UserID
CELL
timestamp=1529267032357, value=002
timestamp=1529267041981, value=12:00:00
timestamp=1529266971258, value=Pragathi
timestamp=1529266959817, value=222
4 row(s) in 0.1010 seconds

hbase(main):003:0>
```

## USECASE-4

Creating a table with name Table3 and adding a column family User and Friends

create 'Table4','User', 'Friends'

```
> put 'Table4', '1', 'User:UserID', '111'
> put 'Table4', '1', 'User:Name', 'Sridevi'
> put 'Table4', '2', 'User:UserID', '222'
> put 'Table4', '2', 'User:Name', 'Pragathi'
> put 'Table4', '3', 'User:UserID', '333'
> put 'Table4', '3', 'User:Name', 'Pranoop'
```

```
> put 'Table4', '1', 'Friends:ID', '001'
> put 'Table4', '1', 'Friends:Name', 'Srilu'
> put 'Table4', '2', 'Friends:ID', '002'
> put 'Table4', '2', 'Friends:Name', 'Lalitha'
> put 'Table4', '3', 'Friends:ID', '003'
> put 'Table4', '3', 'Friends:Name', 'vardhini'
```

```
scan 'Table4'
count 'Table4'
get 'Table4', '2'
```

## Output Screenshots:

```
sridevi@sridevi-VirtualBox: ~
COLUMN                                CELL
EventDetails:EventID                  timestamp=1529267032357, value=002
EventDetails:Time                     timestamp=1529267041981, value=12:00:00
UserDetails:Name                      timestamp=1529266971258, value=Pragathi
UserDetails:UserID                    timestamp=1529266959817, value=222
4 row(s) in 0.1610 seconds

hbase(main):003:0> create 'Table4','User','Friends'
0 row(s) in 1.5570 seconds

hbase(main):004:0> put 'Table4','1','User:UserID','111'
0 row(s) in 0.0720 seconds

hbase(main):005:0> put 'Table4','1','User:Name','Sridevi'
0 row(s) in 0.0520 seconds

hbase(main):006:0> put 'Table4','2','User:UserID','222'
0 row(s) in 0.0440 seconds

hbase(main):007:0> put 'Table4','2','User:Name','Pragathi'
0 row(s) in 0.0210 seconds

hbase(main):008:0> put 'Table4','3','User:UserID','333'
0 row(s) in 0.0230 seconds

hbase(main):009:0> put 'Table4','3','User:Name','Pranoop'
0 row(s) in 0.0140 seconds

hbase(main):010:0>
hbase(main):011:0> put 'Table4','1','Friends:ID','001'
0 row(s) in 0.0280 seconds

hbase(main):012:0> put 'Table4','1','Friends:Name','Srllu'
0 row(s) in 0.0310 seconds

hbase(main):013:0> put 'Table4','2','Friends:ID','002'
0 row(s) in 0.0160 seconds

hbase(main):014:0> put 'Table4','2','Friends:Name','Lalitha'
0 row(s) in 0.0390 seconds

hbase(main):015:0> put 'Table4','3','Friends:ID','003'
0 row(s) in 0.0150 seconds

hbase(main):016:0> put 'Table4','3','Friends:Name','vardhini'
0 row(s) in 0.0210 seconds

hbase(main):017:0>
hbase(main):018:0>
```

```
sridevi@sridevi-VirtualBox: ~
hbase(main):010:0>
hbase(main):011:0> put 'Table4','1','Friends:ID','001'
0 row(s) in 0.0280 seconds

hbase(main):012:0> put 'Table4','1','Friends:Name','Srllu'
0 row(s) in 0.0310 seconds

hbase(main):013:0> put 'Table4','2','Friends:ID','002'
0 row(s) in 0.0160 seconds

hbase(main):014:0> put 'Table4','2','Friends:Name','Lalitha'
0 row(s) in 0.0390 seconds

hbase(main):015:0> put 'Table4','3','Friends:ID','003'
0 row(s) in 0.0150 seconds

hbase(main):016:0> put 'Table4','3','Friends:Name','vardhini'
0 row(s) in 0.0210 seconds

hbase(main):017:0>
hbase(main):018:0> scan 'Table4'

COLUMN=CELL
1 column=Friends:ID, timestamp=1529267574684, value=001
1 column=Friends:Name, timestamp=1529267583937, value=Srllu
1 column=User:Name, timestamp=1529267514457, value=Sridevi
1 column=User:UserID, timestamp=1529267504218, value=111
2 column=Friends:ID, timestamp=1529267592989, value=002
2 column=Friends:Name, timestamp=1529267604568, value=Lalitha
2 column=User:Name, timestamp=1529267538042, value=Pragathi
2 column=User:UserID, timestamp=1529267526804, value=222
3 column=Friends:ID, timestamp=1529267613542, value=003
3 column=Friends:Name, timestamp=1529267622048, value=vardhini
3 column=User:Name, timestamp=1529267561594, value=Pranoop
3 column=User:UserID, timestamp=1529267550407, value=333
3 row(s) in 0.1530 seconds

hbase(main):019:0> count 'Table4'
3 row(s) in 0.0250 seconds

hbase(main):020:0> get 'Table4','2'

COLUMN                                CELL
Friends:ID                            timestamp=1529267592989, value=002
Friends:Name                          timestamp=1529267604568, value=Lalitha
User:Name                             timestamp=1529267538042, value=Pragathi
User:UserID                           timestamp=1529267526804, value=222
4 row(s) in 0.0650 seconds

hbase(main):021:0>
```

## USECASE-5

Creating a table with name Table3 and adding a column family http and User

create 'Table5','http','User'

> put 'Table5','1','http:IP','11.111.11.1'

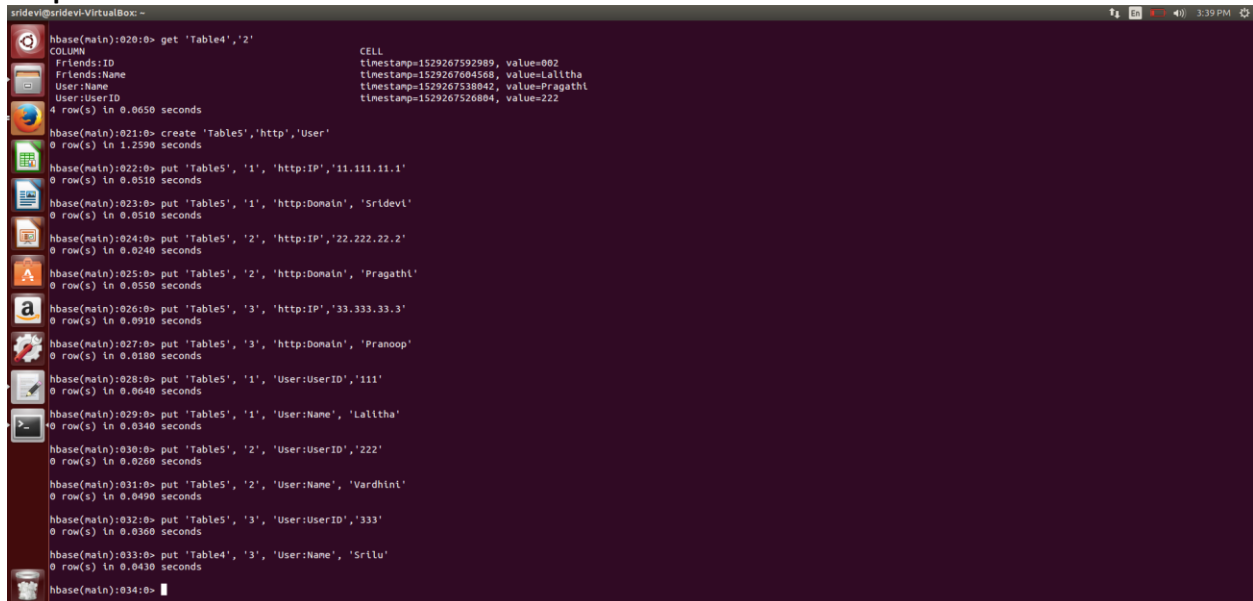
> put 'Table5','1','http:Domain','Sridevi'

```
> put 'Table5', '2', 'http:IP','22.222.22.2'  
> put 'Table5', '2', 'http:Domain', 'Pragathi'  
> put 'Table5', '3', 'http:IP','33.333.33.3'  
> put 'Table5', '3', 'http:Domain', 'Pranoop'
```

```
> put 'Table5', '1', 'User:UserID','111'  
> put 'Table5', '1', 'User:Name', 'Lalitha'  
> put 'Table5', '2', 'User:UserID','222'  
> put 'Table5', '2', 'User:Name', 'Vardhini'  
> put 'Table5', '3', 'User:UserID','333'  
> put 'Table4', '3', 'User:Name', 'Srilu'
```

```
scan 'Table5'  
count 'Table5'  
get 'Table5','2'
```

### Output Screenshots:



```
sridevi@sridevi-VirtualBox: ~  
hbase(main):020:0> get 'Table4','2'  
COLUMN                                CELL  
Friends:ID                            timestamp=1529267592989, value=002  
Friends:Name                          timestamp=1529267604568, value=Lalitha  
User:Name                             timestamp=1529267538042, value=Pragathi  
User:UserID                           timestamp=1529267526884, value=222  
4 row(s) in 0.0650 seconds  
hbase(main):021:0> create 'Tables','http','User'  
0 row(s) in 1.2590 seconds  
hbase(main):022:0> put 'Table5', '1', 'http:IP','11.111.11.1'  
0 row(s) in 0.0510 seconds  
hbase(main):023:0> put 'Table5', '1', 'http:Domain', 'Sridevi'  
0 row(s) in 0.0510 seconds  
hbase(main):024:0> put 'Table5', '2', 'http:IP','22.222.22.2'  
0 row(s) in 0.0240 seconds  
hbase(main):025:0> put 'Table5', '2', 'http:Domain', 'Pragathi'  
0 row(s) in 0.0550 seconds  
hbase(main):026:0> put 'Table5', '3', 'http:IP','33.333.33.3'  
0 row(s) in 0.0910 seconds  
hbase(main):027:0> put 'Table5', '3', 'http:Domain', 'Pranoop'  
0 row(s) in 0.0180 seconds  
hbase(main):028:0> put 'Table5', '1', 'User:UserID','111'  
0 row(s) in 0.0040 seconds  
hbase(main):029:0> put 'Table5', '1', 'User:Name', 'Lalitha'  
0 row(s) in 0.0340 seconds  
hbase(main):030:0> put 'Table5', '2', 'User:UserID','222'  
0 row(s) in 0.0260 seconds  
hbase(main):031:0> put 'Table5', '2', 'User:Name', 'Vardhini'  
0 row(s) in 0.0490 seconds  
hbase(main):032:0> put 'Table5', '3', 'User:UserID','333'  
0 row(s) in 0.0360 seconds  
hbase(main):033:0> put 'Table4', '3', 'User:Name', 'Srilu'  
0 row(s) in 0.0430 seconds  
hbase(main):034:0>
```



```
sridevi@sridevi-VirtualBox:~$ hbase(main):027:0> put 'Tables', '3', 'http:Domain', 'Pranoop'
0 row(s) in 0.0180 seconds

hbase(main):028:0> put 'Tables', '1', 'User:UserID', '111'
0 row(s) in 0.0640 seconds

hbase(main):029:0> put 'Tables', '1', 'User:Name', 'Lalitha'
0 row(s) in 0.0340 seconds

hbase(main):030:0> put 'Tables', '2', 'User:UserID', '222'
0 row(s) in 0.0260 seconds

hbase(main):031:0> put 'Tables', '2', 'User:Name', 'Vardhini'
0 row(s) in 0.0490 seconds

hbase(main):032:0> put 'Tables', '3', 'User:UserID', '333'
0 row(s) in 0.0360 seconds

hbase(main):033:0> put 'Table4', '3', 'User:Name', 'Srili'
0 row(s) in 0.0430 seconds

hbase(main):034:0> scan 'Tables'
ROW                                COLUMN=CELL
1                                  column=User:Name, timestamp=1529267933373, value=Lalitha
1                                  column=User:UserID, timestamp=1529267920914, value=111
1                                  column=http:Domain, timestamp=1529267872873, value=Sridevi
2                                  column=http:IP, timestamp=1529267863618, value=11.111.11.1
2                                  column=User:Name, timestamp=1529267955252, value=Vardhini
2                                  column=User:UserID, timestamp=1529267944586, value=222
2                                  column=http:Domain, timestamp=1529267891996, value=Pragathi
3                                  column=http:IP, timestamp=1529267882720, value=22.222.22.2
3                                  column=User:UserID, timestamp=1529267974617, value=333
3                                  column=http:Domain, timestamp=1529267910822, value=Pranoop
3                                  column=http:IP, timestamp=1529267900614, value=33.333.33.3
3 row(s) in 0.1930 seconds

hbase(main):035:0> count 'Tables'
3 row(s) in 0.0550 seconds

hbase(main):036:0> get 'Tables', '2'
COLUMN                                CELL
User:Name                             timestamp=1529267955252, value=Vardhini
User:UserID                           timestamp=1529267944586, value=222
http:Domain                           timestamp=1529267891996, value=Pragathi
http:IP                               timestamp=1529267882720, value=22.222.22.2
4 row(s) in 0.0570 seconds

hbase(main):037:0>
```

## Question 2:

### a. General HBase shell commands

hbase> status

hbase> status 'simple'

hbase> status 'summary'

hbase> status 'detailed'

hbase> version

hbase> whoami

## Output Screenshots:

```
sridevi@sridevi-VirtualBox:~$ hbase(main):037:0> status
1 servers, 0 dead, 9.0000 average load

hbase(main):038:0> status 'simple'
1 live servers
  localhost:46537 1529262416558
    requestsPerSecond=0, numberOfOnlineRegions=9, usedHeapMB=64, maxHeapMB=991
0 dead servers
Aggregate load: 0, regions: 9

hbase(main):039:0> status 'summary'
1 servers, 0 dead, 9.0000 average load

hbase(main):040:0> status 'detailed'
version 0.94.8
0 regionsInTransition
master coprocessors: []
1 live servers
  localhost:46537 1529262416558
    requestsPerSecond=0, numberOfOnlineRegions=9, usedHeapMB=65, maxHeapMB=991
    -ROOT-,..0
    ,totalStaticIndexSizeKB=0, totalStaticBloomSizeKB=0, totalCompactingKVs=0, currentCompactedKVs=0, compactionProgressPct=NaN
    .META.,..1
    ,totalStaticIndexSizeKB=0, totalStaticBloomSizeKB=0, totalCompactingKVs=0, currentCompactedKVs=0, compactionProgressPct=NaN
    Table01,,1529264834873.f8ef404ae5679f9065c8b9bd1e09d7,
    ,totalStaticIndexSizeKB=0, totalStaticBloomSizeKB=0, totalCompactingKVs=0, currentCompactedKVs=0, compactionProgressPct=NaN
    Table2,,1529265385344.687eb365a63b38805fb33942fcd2a,
    ,totalStaticIndexSizeKB=0, totalStaticBloomSizeKB=0, totalCompactingKVs=0, currentCompactedKVs=0, compactionProgressPct=NaN
    Table2b,,1529266059211.56841e194e028ec32a914e41f7dae1,
    ,totalStaticIndexSizeKB=0, totalStaticBloomSizeKB=0, totalCompactingKVs=0, currentCompactedKVs=0, compactionProgressPct=NaN
    Table3,,1529266925354.11267921f8b67170c603ad0760977cf,
    ,totalStaticIndexSizeKB=0, totalStaticBloomSizeKB=0, totalCompactingKVs=0, currentCompactedKVs=0, compactionProgressPct=NaN
    Table4,,1529267288669.08d39e267f33abee42d544090cb7859,
    ,totalStaticIndexSizeKB=0, totalStaticBloomSizeKB=0, totalCompactingKVs=0, currentCompactedKVs=0, compactionProgressPct=NaN
    Table5,,1529267853853.d7c5bc192cd8dc58c853f4c965351536,
    ,totalStaticIndexSizeKB=0, totalStaticBloomSizeKB=0, totalCompactingKVs=0, currentCompactedKVs=0, compactionProgressPct=NaN
    Table5b,,1529267853853.d7c5bc192cd8dc58c853f4c965351536,
    ,totalStaticIndexSizeKB=0, totalStaticBloomSizeKB=0, totalCompactingKVs=0, currentCompactedKVs=0, compactionProgressPct=NaN
    test,,1529262520225.8e56d24b990bce0b1d2d060d1053ca,
    ,totalStaticIndexSizeKB=0, totalStaticBloomSizeKB=0, totalCompactingKVs=0, currentCompactedKVs=0, compactionProgressPct=NaN
    ,totalStaticIndexSizeKB=0, totalStaticBloomSizeKB=0, totalCompactingKVs=0, currentCompactedKVs=0, compactionProgressPct=NaN

sridevi@sridevi-VirtualBox:~$ hbase(main):041:0> version
0.94.0, r1485407, Wed May 22 20:53:13 UTC 2013

hbase(main):042:0> whoami
sridevi

hbase(main):043:0>
```

## b. Tables Management commands

describe 'Table01'

describe 'Table3'

disable 'Table01'

disable 'Table3'

## Output Screenshots:

```
sridevi@sridevi-VirtualBox:~$ hbase> describe 't1'

hbase(main):045:0> describe 'Table3'
DESCRIPTION
'Table3', (NAME => 'EventDetails', ENCODE_ON_DISK => 'true', BLOOMFILTER => 'NONE', VERSIONS => '3', IN_MEMORY => 'false', KEEP_DEL true
ETED_CELLS => 'false', DATA_BLOCK_ENCODING => 'NONE', TTL => '2147483647', COMPRESSION => 'NONE', MIN_VERSIONS => '0', BLOCKCACHE =>
> 'true', BLOCKSIZE => '65536', REPLICATION_SCOPE => '0'), (NAME => 'UserDetails', ENCODE_ON_DISK => 'true', BLOOMFILTER => 'NONE',
VERSIONS => '3', IN_MEMORY => 'false', KEEP_DELETED_CELLS => 'false', DATA_BLOCK_ENCODING => 'NONE', TTL => '2147483647', COMPRESS
ION => 'NONE', MIN_VERSIONS => '0', BLOCKCACHE => 'true', BLOCKSIZE => '65536', REPLICATION_SCOPE => '0')
1 row(s) in 0.2340 seconds

hbase(main):046:0> Disable 'student'
NoMethodError: undefined method 'Disable' for #<Object:0x6ddc3ed>

hbase(main):047:0> disable 'student'
ERROR: Table student does not exist.'

Here is some help for this command:
Start disable of named table: e.g. "hbase> disable 't1'"

hbase(main):048:0> disable 'Table01'
0 row(s) in 2.1280 seconds

hbase(main):049:0> describe 'Table01'
DESCRIPTION
'Table01', (NAME => 'Location', ENCODE_ON_DISK => 'true', BLOOMFILTER => 'NONE', VERSIONS => '3', IN_MEMORY => 'false', KEEP_DELETE false
O_CELLS => 'false', DATA_BLOCK_ENCODING => 'NONE', TTL => '2147483647', COMPRESSION => 'NONE', MIN_VERSIONS => '0', BLOCKCACHE => '
true', BLOCKSIZE => '65536', REPLICATION_SCOPE => '0')
1 row(s) in 0.1270 seconds

hbase(main):050:0> describe 'Table3'
DESCRIPTION
'Table3', (NAME => 'EventDetails', ENCODE_ON_DISK => 'true', BLOOMFILTER => 'NONE', VERSIONS => '3', IN_MEMORY => 'false', KEEP_DEL true
ETED_CELLS => 'false', DATA_BLOCK_ENCODING => 'NONE', TTL => '2147483647', COMPRESSION => 'NONE', MIN_VERSIONS => '0', BLOCKCACHE =>
> 'true', BLOCKSIZE => '65536', REPLICATION_SCOPE => '0'), (NAME => 'UserDetails', ENCODE_ON_DISK => 'true', BLOOMFILTER => 'NONE',
VERSIONS => '3', IN_MEMORY => 'false', KEEP_DELETED_CELLS => 'false', DATA_BLOCK_ENCODING => 'NONE', TTL => '2147483647', COMPRESS
ION => 'NONE', MIN_VERSIONS => '0', BLOCKCACHE => 'true', BLOCKSIZE => '65536', REPLICATION_SCOPE => '0')
1 row(s) in 0.1310 seconds

hbase(main):051:0> disable 'Table01'
0 row(s) in 0.1530 seconds

hbase(main):052:0> disable 'Table3'
0 row(s) in 2.1920 seconds

hbase(main):053:0> sridevi@sridevi-VirtualBox:~$
```

## c. Data Manipulation commands

count 'Table01'

count 'Table3'

get 'Table01', 'Sridevi'

get 'Table3', 'Pragathi'

## Output Screenshots:

```
sridevi@sridevi-VirtualBox -
hbase(main):052:0> disable 'Table3'
0 row(s) in 2.1920 seconds
hbase(main):053:0> sridevi@sridevi-VirtualBox:~$ hbase shell
^Csridevi@sridevi-VirtualBox:~$ hbase shell
HBase Shell; enter 'help<RETURN>' for list of supported commands.
Type 'exit<RETURN>' to leave the HBase Shell
Version 0.94.0, r1485467, Wed May 22 20:53:13 UTC 2013
hbase(main):001:0> count 'Table01'
ERROR: org.apache.hadoop.hbase.DoNotRetryIOException: Table01 is disabled.
Here is some help for this command:
Count the number of rows in a table. This operation may take a LONG
time (Run 'SHADOOP_HOME/bin/hadoop jar hbase.jar rowcount' to run a
counting mapreduce job). Current count is shown every 1000 rows by
default. Count interval may be optionally specified. Scan caching
is enabled on count scans by default. Default cache size is 10 rows.
If your rows are small in size, you may want to increase this
parameter. Examples:
hbase> count 't1'
hbase> count 't1', INTERVAL => 100000
hbase> count 't1', CACHE => 1000
hbase> count 't1', INTERVAL => 10, CACHE => 1000
hbase(main):002:0> count 'Table3'
ERROR: org.apache.hadoop.hbase.DoNotRetryIOException: Table3 is disabled.
Here is some help for this command:
Count the number of rows in a table. This operation may take a LONG
time (Run 'SHADOOP_HOME/bin/hadoop jar hbase.jar rowcount' to run a
counting mapreduce job). Current count is shown every 1000 rows by
default. Count interval may be optionally specified. Scan caching
is enabled on count scans by default. Default cache size is 10 rows.
If your rows are small in size, you may want to increase this
parameter. Examples:
hbase> count 't1'
hbase> count 't1', INTERVAL => 100000
hbase> count 't1', CACHE => 1000
hbase> count 't1', INTERVAL => 10, CACHE => 1000
```

```
sridevi@sridevi-VirtualBox -
hbase(main):003:0> get 'Table4', 'Sridevi'
COLUMN                                CELL
0 row(s) in 0.0620 seconds
hbase(main):004:0> get 'Table01', 'Sridevi'
COLUMN                                CELL
ERROR: org.apache.hadoop.hbase.DoNotRetryIOException: Table01 is disabled.
Here is some help for this command:
Get row or cell contents; pass table name, row, and optionally
a dictionary of column(s), timestamp, tmlrange and versions. Examples:
hbase> get 't1', 'r1'
hbase> get 't1', 'r1', [TIMESTAMP => [ts1, ts2]]
hbase> get 't1', 'r1', [COLUMN => 'c1']
hbase> get 't1', 'r1', [COLUMN => ['c1', 'c2', 'c3']]
hbase> get 't1', 'r1', [COLUMN => 'c1', TIMESTAMP => ts1]
hbase> get 't1', 'r1', [COLUMN => 'c1', TIME RANGE => [ts1, ts2], VERSIONS => 4]
hbase> get 't1', 'r1', [COLUMN => 'c1', TIMESTAMP => ts1, VERSIONS => 4]
hbase> get 't1', 'r1', [FILTER => "ValueFilter(=, 'binary:abc')"]
hbase> get 't1', 'r1', 'c1'
hbase> get 't1', 'r1', 'c1', 'c2'
hbase> get 't1', 'r1', ['c1', 'c2']
hbase(main):005:0> get 'Table01', 'Pragathi'
COLUMN                                CELL
ERROR: org.apache.hadoop.hbase.DoNotRetryIOException: Table01 is disabled.
Here is some help for this command:
Get row or cell contents; pass table name, row, and optionally
a dictionary of column(s), timestamp, tmlrange and versions. Examples:
hbase> get 't1', 'r1'
hbase> get 't1', 'r1', [TIMESTAMP => [ts1, ts2]]
hbase> get 't1', 'r1', [COLUMN => 'c1']
hbase> get 't1', 'r1', [COLUMN => ['c1', 'c2', 'c3']]
hbase> get 't1', 'r1', [COLUMN => 'c1', TIMESTAMP => ts1]
hbase> get 't1', 'r1', [COLUMN => 'c1', TIME RANGE => [ts1, ts2], VERSIONS => 4]
hbase> get 't1', 'r1', [COLUMN => 'c1', TIMESTAMP => ts1, VERSIONS => 4]
hbase> get 't1', 'r1', [FILTER => "ValueFilter(=, 'binary:abc')"]
hbase> get 't1', 'r1', 'c1'
hbase> get 't1', 'r1', 'c1', 'c2'
hbase> get 't1', 'r1', ['c1', 'c2']
hbase(main):006:0>
```

#### d. HBase surgery tools

balancer

balance\_switch true

balance\_switch false

## Output Screenshots:

```
sridevi@sridevi-VirtualBox:~$
at org.apache.hadoop.hbase.lpc.WritableRpcEngineServer.call(WritableRpcEngine.java:320)
at org.apache.hadoop.hbase.lpc.HBaseServerHandler.run(HBaseServer.java:1426)

Here is some help for this command:
Flush all regions in passed table or pass a region row to
flush an individual region. For example:

hbase> flush 'TABLENAME'
hbase> flush 'REGIONNAME'

hbase(main):008:0> balancer
true
0 row(s) in 0.0150 seconds

hbase(main):009:0> balance_switch true
true
0 row(s) in 0.0460 seconds

hbase(main):010:0> assign 'ICP4'
ERROR: org.apache.hadoop.lpc.RemoteException: org.apache.hadoop.hbase.UnknownRegionException: ICP4
at org.apache.hadoop.hbase.master.HMaster.assign(HMaster.java:1877)
at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:62)
at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:43)
at java.lang.reflect.Method.invoke(Method.java:498)
at org.apache.hadoop.hbase.lpc.WritableRpcEngineServer.call(WritableRpcEngine.java:320)
at org.apache.hadoop.hbase.lpc.HBaseServerHandler.run(HBaseServer.java:1426)

Here is some help for this command:
Assign a region, use with caution. If region already assigned,
this command will just go ahead and reassign
the region anyways. For experts only.

hbase(main):011:0> balancer
true
0 row(s) in 0.0290 seconds

hbase(main):012:0> balance_switch true
true
0 row(s) in 0.0200 seconds

hbase(main):013:0> balance_switch false
true
0 row(s) in 0.0200 seconds

hbase(main):014:0>
```

Team Members:

Pragathi Thammaneni

Sridevi Mallipudi