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@sridevi-VirtualBox: ~                                                         ↑↓ En  ▭  ◁)) 2:54 PM ⚙
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                          COLUMN+CELL
 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=1529264935360, 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                                                                            ENABLED
 'Table01', {NAME => 'Location', ENCODE_ON_DISK => 'true', BLOOMFILTER => 'NONE', VERSIONS => '3', IN_MEMORY => 'false', KEEP_DELETE true
 D_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                       CELL
 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:

USECASE -3

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

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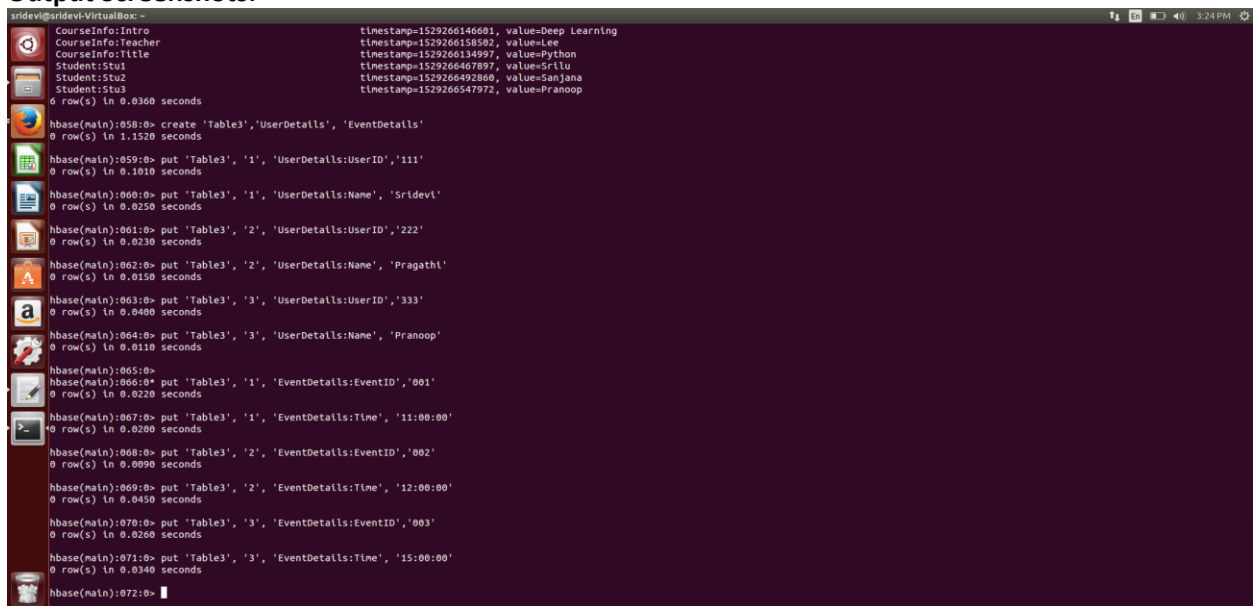
> put 'Table3', '1', 'UserDetails:UserID','111'

> 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:

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:

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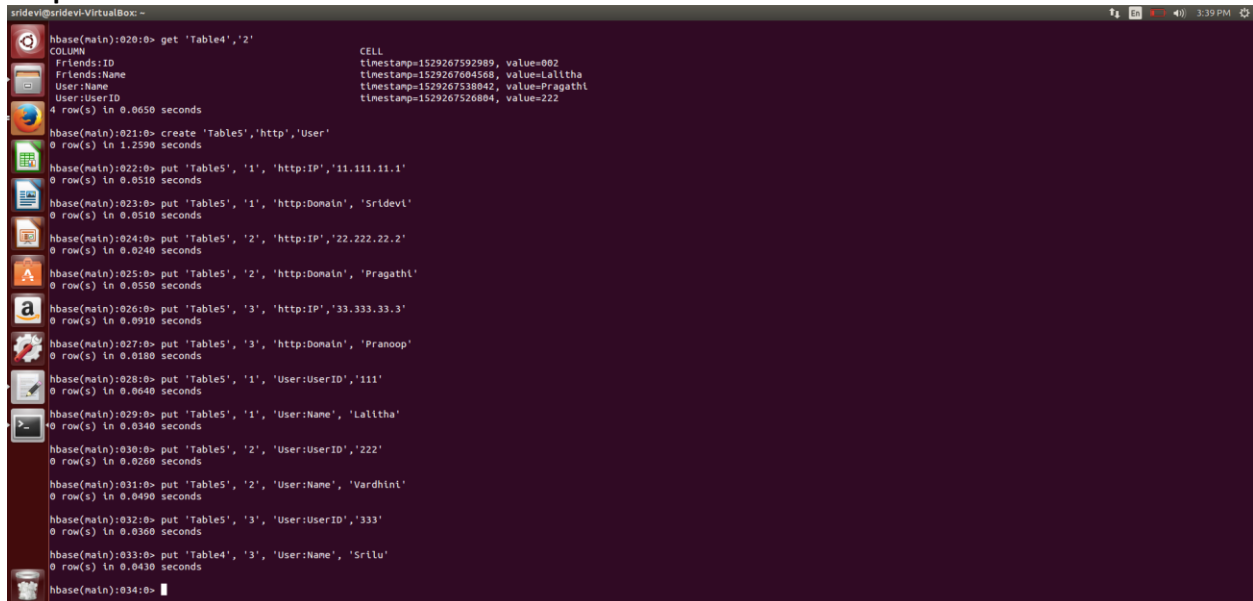
> put 'Table5', '2', 'http:IP','22.222.22.2'
> put 'Table5', '2', 'http:Domain', 'Pragathi'
> put 'Table5', '3', 'http:IP','33.333.33.3'
> put 'Table5', '3', 'http:Domain', 'Pranoop'

> 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:

Question 2:

a. General HBase shell commands

hbase> status

hbase> status 'simple'

hase> status 'summary'

hbase> status 'detailed'

hbase> version

hbase> whoami

Output Screenshots:

b. Tables Management commands

describe 'Table01'

describe 'Table3'

disable 'Table01'

disable 'Table3'

Output Screenshots:

c. Data Manipulation commands

count 'Table01'

count 'Table3'

get 'Table01', 'Sridevi'

get 'Table3', 'Pragathi'

Output Screenshots:

d. HBase surgery tools

balancer

balance_switch true

balance_switch false

Output Screenshots:

Team Members:

Pragathi Thammaneni

Sridevi Mallipudi