

HBase Assignment 2 :

1) Create an HBase table named 'clicks' with a column family 'hits' such that it should be able to store last 5 values of qualifiers inside 'hits' column family.

Steps:

- 1) We have to create a table with name clicks, and with a column family hits, which can store last 5 values of the column family hits.
- 2) HBase uses Version for this purpose

In HBase, Versions are used to store multiple, but fixed number of values for a column. For us, We want to store the last 5 values of users entry in hits. We can have a column family called "hits", and set max versions to 5 while defining table.

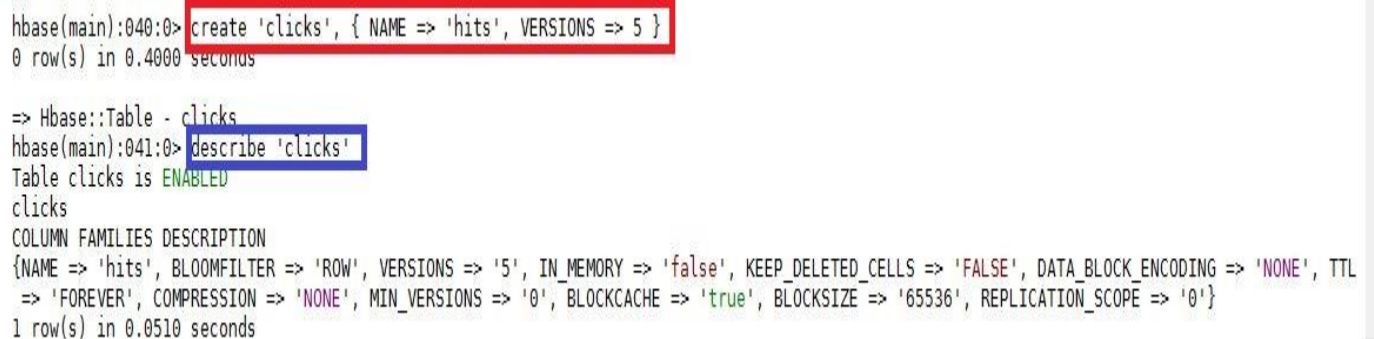
Now, When value is updated for the same 'row-key' using 'put command instead of overwriting the previous value of the column, push the previous value down the versions list and store the latest value on top. It internally will store last 5 updates to this columns, and dropping the older entries. HBase is having this benefit over RDMS.

You can use "Get" method to retrieve as many versions as we wish.

Command:

```
create 'clicks', { NAME => 'hits', VERSIONS => 5 }  
describe 'clicks'
```

Screenshot of MobaXterm for creating table clicks with column family hits.:



```
hbase(main):040:0> create 'clicks', { NAME => 'hits', VERSIONS => 5 }  
0 row(s) in 0.4000 seconds  
  
=> Hbase::Table - clicks  
hbase(main):041:0> describe 'clicks'  
Table clicks is ENABLED  
clicks  
COLUMN FAMILIES DESCRIPTION  
{NAME => 'hits', BLOOMFILTER => 'ROW', VERSIONS => '5', IN_MEMORY => 'false', KEEP_DELETED_CELLS => 'FALSE', DATA_BLOCK_ENCODING => 'NONE', TTL  
=> 'FOREVER', COMPRESSION => 'NONE', MIN_VERSIONS => '0', BLOCKCACHE => 'true', BLOCKSIZE => '65536', REPLICATION_SCOPE => '0'}  
1 row(s) in 0.0510 seconds
```

2) Add few records in the table and update some of them. Use IP Address as row-key. Scan the table to view if all the previous versions are getting displayed.

Steps:

- 1) We are adding few records to the table by using IP Address as row-key.

- 2) Then we are using put command to update the records with respect to the Ip Address.
- 3) Scanning to table to check if the previous versions are getting diaplayed with timestamp.

Command:

```
put 'clicks','192.1.1.1','hits:name','Raj'  
put 'clicks','192.1.1.1','hits:street','Big Street'  
put 'clicks','192.1.1.1','hits:house_number','3'  
put 'clicks','192.1.1.2','hits:name','Dev'  
put 'clicks','192.1.1.2','hits:house_number','3'  
put 'clicks','192.1.1.3','hits:name','Krish'  
put 'clicks','192.1.1.3','hits:street','Abc street'
```

```
put 'clicks','192.1.1.1','hits:street','Gandhi nagar'  
put 'clicks','192.1.1.1','hits:house_number','45'  
put 'clicks','192.1.1.2','hits:house_number','41'  
put 'clicks','192.1.1.3','hits:street','Test street'
```

```
put 'clicks','192.1.1.1','hits:street','Jasmine street'  
put 'clicks','192.1.1.1','hits:house_number','95'  
put 'clicks','192.1.1.2','hits:house_number','39'  
put 'clicks','192.1.1.3','hits:street','First street'
```

```
put 'clicks','192.1.1.1','hits:street','Mint Street'  
put 'clicks','192.1.1.1','hits:house_number','133'  
put 'clicks','192.1.1.2','hits:house_number','190'  
put 'clicks','192.1.1.3','hits:street','Ramanujar street'
```

```
put 'clicks','192.1.1.1','hits:street','Krishna nagar'  
put 'clicks','192.1.1.1','hits:house_number','18'  
put 'clicks','192.1.1.2','hits:house_number','36'  
put 'clicks','192.1.1.3','hits:street','kannagi street'
```

```
put 'clicks','192.1.1.1','hits:street','Ramani nagar'  
put 'clicks','192.1.1.1','hits:house_number','229'  
put 'clicks','192.1.1.2','hits:house_number','77'  
put 'clicks','192.1.1.3','hits:street','west street'
```

Screenshot of Mobaxterm Scan for inserting new records/updating:

```

hbase(main):072:0* put 'clicks','192.1.1.1','hits:street','Gandhi nagar'
0 row(s) in 0.0050 seconds

hbase(main):073:0> put 'clicks','192.1.1.1','hits:house_number','45'
0 row(s) in 0.0030 seconds

hbase(main):074:0> put 'clicks','192.1.1.2','hits:house_number','41'
0 row(s) in 0.0040 seconds

hbase(main):075:0> put 'clicks','192.1.1.3','hits:street','Test street'
0 row(s) in 0.0030 seconds

hbase(main):076:0>
hbase(main):077:0* put 'clicks','192.1.1.1','hits:street','Jasmine street'
0 row(s) in 0.0070 seconds

hbase(main):078:0> put 'clicks','192.1.1.1','hits:house_number','95'
0 row(s) in 0.0080 seconds

hbase(main):079:0> put 'clicks','192.1.1.2','hits:house_number','39'
0 row(s) in 0.0020 seconds

hbase(main):080:0> put 'clicks','192.1.1.3','hits:street','First street'
0 row(s) in 0.0020 seconds

```

Screenshot of Mobaxterm Scan 'clicks' output

```

hbase(main):096:0> scan 'clicks', {VERSIONS => 5}
ROW                                COLUMN+CELL
192.1.1.1                          column=hits:house_number, timestamp=1510125750491, value=229
192.1.1.1                          column=hits:house_number, timestamp=1510125750341, value=18
192.1.1.1                          column=hits:house_number, timestamp=1510125750208, value=133
192.1.1.1                          column=hits:house_number, timestamp=1510125750078, value=95
192.1.1.1                          column=hits:house_number, timestamp=1510125749916, value=45
192.1.1.1                          column=hits:name, timestamp=1510125749702, value=Raj
192.1.1.1                          column=hits:street, timestamp=1510125750467, value=Ramani nagar
192.1.1.1                          column=hits:street, timestamp=1510125750311, value=Krishna nagar
192.1.1.1                          column=hits:street, timestamp=1510125750191, value=Mint Street
192.1.1.1                          column=hits:street, timestamp=1510125750021, value=Jasmine street
192.1.1.1                          column=hits:street, timestamp=1510125749899, value=Gandhi nagar
192.1.1.2                          column=hits:house_number, timestamp=1510125750511, value=77
192.1.1.2                          column=hits:house_number, timestamp=1510125750412, value=36
192.1.1.2                          column=hits:house_number, timestamp=1510125750235, value=190
192.1.1.2                          column=hits:house_number, timestamp=1510125750114, value=39
192.1.1.2                          column=hits:house_number, timestamp=1510125749935, value=41
192.1.1.2                          column=hits:name, timestamp=1510125749789, value=Dev
192.1.1.3                          column=hits:name, timestamp=1510125749832, value=Krish
192.1.1.3                          column=hits:street, timestamp=1510125751860, value=west street
192.1.1.3                          column=hits:street, timestamp=1510125750436, value=kannagi street
192.1.1.3                          column=hits:street, timestamp=1510125750260, value=Ramanujar street
192.1.1.3                          column=hits:street, timestamp=1510125750146, value=First street
192.1.1.3                          column=hits:street, timestamp=1510125749972, value=Test street
3 row(s) in 0.1420 seconds

```

Output ::

hbase(main):096:0> scan 'clicks', {VERSIONS => 5}

ROW	COLUMN+CELL
192.1.1.1	column=hits:house_number, timestamp=1510125750491, value=229
192.1.1.1	column=hits:house_number, timestamp=1510125750341, value=18
192.1.1.1	column=hits:house_number, timestamp=1510125750208, value=133
192.1.1.1	column=hits:house_number, timestamp=1510125750078, value=95
192.1.1.1	column=hits:house_number, timestamp=1510125749916, value=45
192.1.1.1	column=hits:name, timestamp=1510125749702, value=Raj
192.1.1.1	column=hits:street, timestamp=1510125750467, value=Ramani nagar
192.1.1.1	column=hits:street, timestamp=1510125750311, value=Krishna nagar
192.1.1.1	column=hits:street, timestamp=1510125750191, value=Mint Street
192.1.1.1	column=hits:street, timestamp=1510125750021, value=Jasmine street
192.1.1.1	column=hits:street, timestamp=1510125749899, value=Gandhi nagar
192.1.1.2	column=hits:house_number, timestamp=1510125750511, value=77
192.1.1.2	column=hits:house_number, timestamp=1510125750412, value=36
192.1.1.2	column=hits:house_number, timestamp=1510125750235, value=190
192.1.1.2	column=hits:house_number, timestamp=1510125750114, value=39
192.1.1.2	column=hits:house_number, timestamp=1510125749935, value=41
192.1.1.2	column=hits:name, timestamp=1510125749789, value=Dev
192.1.1.3	column=hits:name, timestamp=1510125749832, value=Krish
192.1.1.3	column=hits:street, timestamp=1510125751860, value=west street
192.1.1.3	column=hits:street, timestamp=1510125750436, value=kannagi street
192.1.1.3	column=hits:street, timestamp=1510125750260, value=Ramanujar street
192.1.1.3	column=hits:street, timestamp=1510125750146, value=First street
192.1.1.3	column=hits:street, timestamp=1510125749972, value=Test street

3 row(s) in 0.1420 seconds