CAPSTONE PROJECT
INSTANT HEALTH ALERT SYSTEM
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1. From EMR, use the below command to go to hbase shell

Hbase shell

```
[hadoop@ip-172-31-38-49 ~]$ hbase shell
HBase Shell
Use "help" to get list of supported commands.
Use "exit" to quit this interactive shell.
Version 1.4.13, rUnknown, Wed Jun  8 00:30:30 UTC 2022

hbase(main):001:0>
```

STATEMENTS TO CREATE HBASE THRESHOLD TABLE

2. We can create hbase table using the following command:

create 'Threshold_Reference_Table', 'attribute', 'limit', 'alert'

```
hbase(main):001:0> create 'Threshold_Reference_Table', 'attribute', 'limit', 'al
ert'
0 row(s) in 1.7150 seconds

=> Hbase::Table - Threshold_Reference_Table
hbase(main):002:0>
```

3. We can describe the table column field using the following command:

describe 'Threshold_Reference_Table'

```
hbase(main):002:0> describe 'Threshold_Reference_Table'
Table Threshold_Reference_Table is ENABLED
Threshold_Reference_Table
COLUMN FAMILIES DESCRIPTION
{NAME => 'alert', BLOOMFILTER => 'ROW', VERSIONS => '1', 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'}
{NAME => 'attribute', BLOOMFILTER => 'ROW', VERSIONS => '1', IN_MEMORY => 'false', KEEP_DELETED_CELLS => 'FALSE', DATA_BLOCK_ENCODING => 'NONE', TTL => 'FOREVER', COMPRESSION => 'NONE', MIN_VERSION
S => '0', BLOCKCACHE => 'true', BLOCKSIZE => '65536', REPLICATION_SCOPE => '0'}
{NAME => 'limit', BLOOMFILTER => 'ROW', VERSIONS => '1', 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'}
3 row(s) in 0.0850 seconds

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

4. We can insert the threshold data using put command for 12 records as follows:

put 'Threshold_Reference_Table','row1','attribute:attribute','value=heartBeat'
put 'Threshold_Reference_Table','row2','attribute:attribute','value=heartBeat '
put 'Threshold_Reference_Table','row3','attribute:attribute','value=heartBeat '
put 'Threshold_Reference_Table','row4','attribute:attribute','value=bp'
put 'Threshold_Reference_Table','row5','attribute:attribute','value=bp'
put 'Threshold_Reference_Table','row6','attribute:attribute','value=bp'
put 'Threshold_Reference_Table','row7','attribute:attribute','value=heartBeat'

```
put 'Threshold_Reference_Table','row8','attribute:attribute','value=heartBeat'
put 'Threshold_Reference_Table','row9','attribute:attribute','value=heartBeat'
put 'Threshold_Reference_Table','row10','attribute:attribute','value=bp'
put 'Threshold_Reference_Table','row11','attribute:attribute','value=bp'
put 'Threshold_Reference_Table','row12','attribute:attribute','value=bp'

put 'Threshold_Reference_Table','row1','limit:low_age_limit','value=0'
put 'Threshold_Reference_Table','row1','limit:high_age_limit','value=40'
put 'Threshold_Reference_Table','row1','limit:low_value','value=0'
put 'Threshold_Reference_Table','row1','limit:high_value','value=69'

put 'Threshold_Reference_Table','row2','limit:low_age_limit','value=0'
put 'Threshold_Reference_Table','row2','limit:high_age_limit','value=40'
put 'Threshold_Reference_Table','row2','limit:low_value','value=70'
put 'Threshold_Reference_Table','row2','limit:high_value','value=78'

put 'Threshold_Reference_Table','row3','limit:low_age_limit','value=0'
put 'Threshold_Reference_Table','row3','limit:high_age_limit','value=40'
put 'Threshold_Reference_Table','row3','limit:low_value','value=79'
put 'Threshold_Reference_Table','row3','limit:high_value','value=9999'

put 'Threshold_Reference_Table','row4','limit:low_age_limit','value=0'
put 'Threshold_Reference_Table','row4','limit:high_age_limit','value=40'
put 'Threshold_Reference_Table','row4','limit:low_value','value=0'
put 'Threshold_Reference_Table','row4','limit:high_value','value=160'

put 'Threshold_Reference_Table','row5','limit:low_age_limit','value=0'
put 'Threshold_Reference_Table','row5','limit:high_age_limit','value=40'
put 'Threshold_Reference_Table','row5','limit:low_value','value=161'
put 'Threshold_Reference_Table','row5','limit:high_value','value=220'

put 'Threshold_Reference_Table','row6','limit:low_age_limit','value=0'
put 'Threshold_Reference_Table','row6','limit:high_age_limit','value=40'
put 'Threshold_Reference_Table','row6','limit:low_value','value=221'
put 'Threshold_Reference_Table','row6','limit:high_value','value=9999'

put 'Threshold_Reference_Table','row7','limit:low_age_limit','value=41'
put 'Threshold_Reference_Table','row7','limit:high_age_limit','value=100'
put 'Threshold_Reference_Table','row7','limit:low_value','value=0'
put 'Threshold_Reference_Table','row7','limit:high_value','value=65'

put 'Threshold_Reference_Table','row8','limit:low_age_limit','value=41'
put 'Threshold_Reference_Table','row8','limit:high_age_limit','value=100'
put 'Threshold_Reference_Table','row8','limit:low_value','value=66'
put 'Threshold_Reference_Table','row8','limit:high_value','value=73'

put 'Threshold_Reference_Table','row9','limit:low_age_limit','value=41'
put 'Threshold_Reference_Table','row9','limit:high_age_limit','value=100'
put 'Threshold_Reference_Table','row9','limit:low_value','value=74'
put 'Threshold_Reference_Table','row9','limit:high_value','value=9999'
```

```
put 'Threshold_Reference_Table','row10','limit:low_age_limit','value=41'
put 'Threshold_Reference_Table','row10','limit:high_age_limit','value=100'
put 'Threshold_Reference_Table','row10','limit:low_value','value=0'
put 'Threshold_Reference_Table','row10','limit:high_value','value=150'

put 'Threshold_Reference_Table','row11','limit:low_age_limit','value=41'
put 'Threshold_Reference_Table','row11','limit:high_age_limit','value=100'
put 'Threshold_Reference_Table','row11','limit:low_value','value=151'
put 'Threshold_Reference_Table','row11','limit:high_value','value=180'

put 'Threshold_Reference_Table','row12','limit:low_age_limit','value=41'
put 'Threshold_Reference_Table','row12','limit:high_age_limit','value=100'
put 'Threshold_Reference_Table','row12','limit:low_value','value=181'
put 'Threshold_Reference_Table','row12','limit:high_value','value=9999'

put 'Threshold_Reference_Table','row1','alert:alert_flag','value=1'
put 'Threshold_Reference_Table','row2','alert:alert_flag','value=0'
put 'Threshold_Reference_Table','row3','alert:alert_flag','value=1'
put 'Threshold_Reference_Table','row4','alert:alert_flag','value=1'
put 'Threshold_Reference_Table','row5','alert:alert_flag','value=0'
put 'Threshold_Reference_Table','row6','alert:alert_flag','value=1'
put 'Threshold_Reference_Table','row7','alert:alert_flag','value=1'
put 'Threshold_Reference_Table','row8','alert:alert_flag','value=0'
put 'Threshold_Reference_Table','row9','alert:alert_flag','value=1'
put 'Threshold_Reference_Table','row10','alert:alert_flag','value=1'
put 'Threshold_Reference_Table','row11','alert:alert_flag','value=0'
put 'Threshold_Reference_Table','row12','alert:alert_flag','value=1'

put 'Threshold_Reference_Table','row1','alert:alert_message','value=Low Heart Rate than
Normal'
put 'Threshold_Reference_Table','row2','alert:alert_message','value=Normal'
put 'Threshold_Reference_Table','row3','alert:alert_message','value=Higher Heart Rate
than Normal'
put 'Threshold_Reference_Table','row4','alert:alert_message','value=Low BP than
Normal'
put 'Threshold_Reference_Table','row5','alert:alert_message','value=Normal'
put 'Threshold_Reference_Table','row6','alert:alert_message','value=Higher BP than
Normal'
put 'Threshold_Reference_Table','row7','alert:alert_message','value=Low Heart Rate than
Normal'
put 'Threshold_Reference_Table','row8','alert:alert_message','value=Normal'
put 'Threshold_Reference_Table','row9','alert:alert_message','value=Higher Heart Rate
than Normal'
put 'Threshold_Reference_Table','row10','alert:alert_message','value=Low BP than
Normal'
put 'Threshold_Reference_Table','row11','alert:alert_message','value=Normal'
put 'Threshold_Reference_Table','row12','alert:alert_message','value=Higher BP than
Normal'
```

5. Screenshot

```
hbase(main):124:0> put 'Threshold_Reference_Table','row8','alert:alert_flag','value=0'
0 row(s) in 0.0030 seconds

hbase(main):125:0> put 'Threshold_Reference_Table','row9','alert:alert_flag','value=1'
0 row(s) in 0.0020 seconds

hbase(main):126:0> put 'Threshold_Reference_Table','row10','alert:alert_flag','value=1'
0 row(s) in 0.0030 seconds

hbase(main):127:0> put 'Threshold_Reference_Table','row11','alert:alert_flag','value=0'
0 row(s) in 0.0030 seconds

hbase(main):128:0> put 'Threshold_Reference_Table','row12','alert:alert_flag','value=1'
0 row(s) in 0.0030 seconds

hbase(main):129:0>
hbase(main):130:0* put 'Threshold_Reference_Table','row1','alert:alert_message','value=Low Heart Rate than Normal'
0 row(s) in 0.0030 seconds

hbase(main):131:0> put 'Threshold_Reference_Table','row2','alert:alert_message','value=Normal'
0 row(s) in 0.0030 seconds

hbase(main):132:0> put 'Threshold_Reference_Table','row3','alert:alert_message','value=Higher Heart Rate than Normal'
0 row(s) in 0.0030 seconds

hbase(main):133:0> put 'Threshold_Reference_Table','row4','alert:alert_message','value=Low BP than Normal'
0 row(s) in 0.0030 seconds

hbase(main):134:0> put 'Threshold_Reference_Table','row5','alert:alert_message','value=Normal'
0 row(s) in 0.0030 seconds

hbase(main):135:0> put 'Threshold_Reference_Table','row6','alert:alert_message','value=Higher BP than Normal'
0 row(s) in 0.0040 seconds

hbase(main):136:0> put 'Threshold_Reference_Table','row7','alert:alert_message','value=Low Heart Rate than Normal'
0 row(s) in 0.0020 seconds

hbase(main):137:0> put 'Threshold_Reference_Table','row8','alert:alert_message','value=Normal'
0 row(s) in 0.0030 seconds

hbase(main):138:0> put 'Threshold_Reference_Table','row9','alert:alert_message','value=Higher Heart Rate than Normal'
0 row(s) in 0.0030 seconds

hbase(main):139:0> put 'Threshold_Reference_Table','row10','alert:alert_message','value=Low BP than Normal'
0 row(s) in 0.0040 seconds

hbase(main):140:0> put 'Threshold_Reference_Table','row11','alert:alert_message','value=Normal'
0 row(s) in 0.0030 seconds

hbase(main):141:0> put 'Threshold_Reference_Table','row12','alert:alert_message','value=Higher BP than Normal'
0 row(s) in 0.0030 seconds

hbase(main):142:0>
```

6. We can view the table using the following command:

t = get_table 'Threshold_Reference_Table'

```
hbase(main):001:0> t = get_table 'Threshold_Reference_Table'
0 row(s) in 0.0470 seconds

=> Hbase::Table - Threshold_Reference_Table
```

t.scan

```
hbase(main):002:0> t.scan
ROW                                     COLUMN+CELL
 row1                                   column=alert:alert_flag, timestamp=1669405739600, value=value=1
 row1                                   column=alert:alert_message, timestamp=1669405739786, value=value=Low Heart Rate than Normal
 row1                                   column=attribute:attribute, timestamp=1669405598094, value=value=heartBeat
 row1                                   column=limit:high_age_limit, timestamp=1669405598771, value=value=40
 row1                                   column=limit:high_value, timestamp=1669405598841, value=value=69
 row1                                   column=limit:low_age_limit, timestamp=1669405598740, value=value=0
 row1                                   column=limit:low_value, timestamp=1669405598816, value=value=0
 row10                                  column=alert:alert_flag, timestamp=1669405739738, value=value=1
 row10                                  column=alert:alert_message, timestamp=1669405739925, value=value=Low BP than Normal
 row10                                  column=attribute:attribute, timestamp=1669405598583, value=value=bp
 row10                                  column=limit:high_age_limit, timestamp=1669405739401, value=value=100
 row10                                  column=limit:high_value, timestamp=1669405739453, value=value=150
 row10                                  column=limit:low_value, timestamp=1669405739436, value=value=0
 row11                                  column=alert:alert_flag, timestamp=1669405739751, value=value=0
 row11                                  column=alert:alert_message, timestamp=1669405739938, value=value=Normal
 row11                                  column=attribute:attribute, timestamp=1669405598665, value=value=bp
 row11                                  column=limit:high_age_limit, timestamp=1669405739488, value=value=100
 row11                                  column=limit:high_value, timestamp=1669405739517, value=value=180
 row11                                  column=limit:low_age_limit, timestamp=1669405739475, value=value=41
 row11                                  column=limit:low_value, timestamp=1669405739502, value=value=151
 row12                                  column=alert:alert_flag, timestamp=1669405739765, value=value=1
 row12                                  column=alert:alert_message, timestamp=1669405739952, value=value=Higher BP than Normal
 row12                                  column=attribute:attribute, timestamp=1669405598699, value=value=bp
 row12                                  column=limit:high_age_limit, timestamp=1669405739551, value=value=100
 row12                                  column=limit:high_value, timestamp=1669405739579, value=value=9999
 row12                                  column=limit:low_age_limit, timestamp=1669405739537, value=value=41
 row12                                  column=limit:low_value, timestamp=1669405739566, value=value=181
 row2                                   column=alert:alert_flag, timestamp=1669405739612, value=value=0
 row2                                   column=alert:alert_message, timestamp=1669405739803, value=value=Normal
 row2                                   column=attribute:attribute, timestamp=1669405598258, value=value=heartBeat
 row2                                   column=limit:high_age_limit, timestamp=1669405598909, value=value=40
 row2                                   column=limit:high_value, timestamp=1669405598975, value=value=78
 row2                                   column=limit:low_age_limit, timestamp=1669405598873, value=value=0
 row2                                   column=limit:low_value, timestamp=1669405598946, value=value=70
 row3                                   column=alert:alert_flag, timestamp=1669405739625, value=value=1
 row3                                   column=alert:alert_message, timestamp=1669405739828, value=value=Higher Heart Rate than Normal
 row3                                   column=attribute:attribute, timestamp=1669405598316, value=value=heartBeat
 row3                                   column=limit:high_age_limit, timestamp=1669405599067, value=value=40
 row3                                   column=limit:high_value, timestamp=1669405599130, value=value=9999
 row3                                   column=limit:low_age_limit, timestamp=1669405599008, value=value=0
 row3                                   column=limit:low_value, timestamp=1669405599092, value=value=79
 row4                                   column=alert:alert_flag, timestamp=1669405739638, value=value=1
 row4                                   column=alert:alert_message, timestamp=1669405739840, value=value=Low BP than Normal
 row4                                   column=attribute:attribute, timestamp=1669405598376, value=value=bp
 row4                                   column=limit:high_age_limit, timestamp=1669405599206, value=value=40
 row4                                   column=limit:high_value, timestamp=1669405599274, value=value=160
 row4                                   column=limit:low_age_limit, timestamp=1669405599162, value=value=0
 row4                                   column=limit:low_value, timestamp=1669405599241, value=value=0
 row5                                   column=alert:alert_flag, timestamp=1669405739658, value=value=0
 row5                                   column=alert:alert_message, timestamp=1669405739853, value=value=Normal
 row5                                   column=attribute:attribute, timestamp=1669405598409, value=value=bp
```