

Tarea evaluable

CE_5074 4.1

Sistemas de big data



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1 Crea la tabla “**vehicles**” en HBase.

```
hbase(main):001:0> create 'vehicles', 'info_general', 'conservacio', 'propietari', 'ubicacio'
0 row(s) in 3.5080 seconds

=> Hbase::Table - vehicles
```

2 Inserta mediante comandos put las tres primeras filas de la tabla.

```
hbase(main):004:0> put 'vehicles', '1', 'info_general:marca', 'Toyota'
0 row(s) in 0.3800 seconds

hbase(main):005:0> put 'vehicles', '1', 'info_general:model', 'Corolla'
0 row(s) in 0.0650 seconds

hbase(main):006:0> put 'vehicles', '1', 'info_general:matricula', '1234ABC'
0 row(s) in 0.0360 seconds

hbase(main):007:0> put 'vehicles', '1', 'info_general:preu', '12000'
0 row(s) in 0.0200 seconds

hbase(main):008:0> put 'vehicles', '1', 'conservacio:any', '2015'
0 row(s) in 0.0250 seconds

hbase(main):009:0> put 'vehicles', '1', 'conservacio:km', '120000'
0 row(s) in 0.0120 seconds

hbase(main):010:0> put 'vehicles', '1', 'conservacio:estat', 'bo'
0 row(s) in 0.0290 seconds

hbase(main):011:0> put 'vehicles', '1', 'propietari:nif', '12345678A'
0 row(s) in 0.0300 seconds

hbase(main):012:0> put 'vehicles', '1', 'propietari:nom', 'Joan Mart?nez'
0 row(s) in 0.0270 seconds

hbase(main):013:0> put 'vehicles', '1', 'propietari:telefon', '623456789'
0 row(s) in 0.0210 seconds

hbase(main):014:0> put 'vehicles', '1', 'propietari:mail', 'joan.martinez@email.com'
0 row(s) in 0.0130 seconds

hbase(main):015:0> put 'vehicles', '1', 'ubicacio:ciutat', 'Palma'
0 row(s) in 0.0260 seconds

hbase(main):016:0> put 'vehicles', '1', 'ubicacio:illa', 'Mallorca'
0 row(s) in 0.0300 seconds

hbase(main):017:0> put 'vehicles', '1', 'ubicacio:longitud', '2.650160'
0 row(s) in 0.0570 seconds

hbase(main):018:0> put 'vehicles', '1', 'ubicacio:latitud', '39.569600'
0 row(s) in 0.0300 seconds
```

```

hbase(main):019:0> put 'vehicles', '2', 'info_general:marca', 'Ford'
0 row(s) in 0.0320 seconds

hbase(main):020:0> put 'vehicles', '2', 'info_general:model', 'Focus'
0 row(s) in 0.0140 seconds

hbase(main):021:0> put 'vehicles', '2', 'info_general:matricula', '5678DEF'
0 row(s) in 0.0120 seconds

hbase(main):022:0> put 'vehicles', '2', 'info_general:preu', '15500'
0 row(s) in 0.0140 seconds

hbase(main):023:0> put 'vehicles', '2', 'conservacio:any', '2018'
0 row(s) in 0.0130 seconds

hbase(main):024:0> put 'vehicles', '2', 'conservacio:km', '55000'
0 row(s) in 0.0220 seconds

hbase(main):025:0> put 'vehicles', '2', 'conservacio:estat', 'molt bo'
0 row(s) in 0.0840 seconds

hbase(main):026:0> put 'vehicles', '2', 'propietari:nif', '87654321B'
0 row(s) in 0.0130 seconds

hbase(main):027:0> put 'vehicles', '2', 'propietari:nom', 'Ana Garc?a'
0 row(s) in 0.0330 seconds

hbase(main):028:0> put 'vehicles', '2', 'propietari:telefon', ''
0 row(s) in 0.0250 seconds

hbase(main):029:0> put 'vehicles', '2', 'propietari:mail', 'ana.garcia@email.com'
0 row(s) in 0.0280 seconds

hbase(main):030:0> put 'vehicles', '2', 'ubicacio:ciutat', 'Palma'
0 row(s) in 0.0350 seconds

hbase(main):031:0> put 'vehicles', '2', 'ubicacio:illa', 'Mallorca'
0 row(s) in 0.0550 seconds

hbase(main):032:0> put 'vehicles', '3', 'info_general:marca', 'Honda'
0 row(s) in 0.0280 seconds

hbase(main):033:0> put 'vehicles', '3', 'info_general:model', 'Civic'
0 row(s) in 0.0120 seconds

hbase(main):034:0> put 'vehicles', '3', 'info_general:matricula', '9012GHI'
0 row(s) in 0.0130 seconds

hbase(main):035:0> put 'vehicles', '3', 'info_general:preu', '18000'
0 row(s) in 0.0280 seconds

hbase(main):036:0> put 'vehicles', '3', 'conservacio:any', '2020'
0 row(s) in 0.0180 seconds

hbase(main):037:0> put 'vehicles', '3', 'conservacio:km', '20000'
0 row(s) in 0.0140 seconds

hbase(main):038:0> put 'vehicles', '3', 'conservacio:estat', 'bo'
0 row(s) in 0.0150 seconds

hbase(main):039:0> put 'vehicles', '3', 'propietari:nif', '11223344C'
0 row(s) in 0.0160 seconds

hbase(main):040:0> put 'vehicles', '3', 'propietari:nom', 'David L?pez'
0 row(s) in 0.0130 seconds

hbase(main):041:0> put 'vehicles', '3', 'propietari:telefon', '655123456'
0 row(s) in 0.0140 seconds

hbase(main):042:0> put 'vehicles', '3', 'ubicacio:ciutat', 'Eivissa'
0 row(s) in 0.0130 seconds

hbase(main):043:0> put 'vehicles', '3', 'ubicacio:illa', 'Eivissa'
0 row(s) in 0.0240 seconds

hbase(main):044:0> put 'vehicles', '3', 'ubicacio:longitud', '1.452850'
0 row(s) in 0.0120 seconds

hbase(main):045:0> put 'vehicles', '3', 'ubicacio:latitud', '38.916280'
0 row(s) in 0.0280 seconds

```

3 Crea un archivo CSV con las 3 últimas filas y cárgalo en la tabla.

```
cloudera@quickstart.cloudera ~ (12.603s)
hdfs dfs -put hbase/vehicles.csv hbase/
```



```
cloudera@quickstart.cloudera ~ (11.094s)
hdfs dfs -ls hbase/
Found 1 items
-rw-r--r-- 1 cloudera cloudera 359 2025-01-20 04:34 hbase/vehicles.csv
```

```
cloudera@quickstart.cloudera ~ (11.825s)
hdfs dfs -cat hbase/vehicles.csv
4,Mercedes-Benz,A-Class,3456JKL,30000,2019,40000,bo,22334455D,Maria Sánchez,672345678,,Manacor,Mallorca,3.703790,40.416780
5,BMW,X5,7890JKL,25000,2017,70000,bo,33445566E,Jordi Pérez,,jordi.perez@email.com,Ciutadella,Menorca,0.376288,39.469907
6,Audi,A4,1122XYZ,20000,2016,80000,molt bo,44556677F,Laura Martín,687654321,laura.martin@email.com,Maó,Menorca
```

```
cloudera@quickstart.cloudera ~ (in 40.33s)
hbase org.apache.hadoop.hbase.mapreduce.ImportTsv \
-Dimportttsv.columns="HBASE_ROW_KEY,info_general:marca,info_general:model,info_general:matricula,info_general:preu,conservacio:any,con
tari:nom,propietari:telefon,propietari:mail,ubicacio:ciutat,ubicacio:illa,ubicacio:longitud,ubicacio:latitud" \
> -Dimportttsv.separator=',' vehicles hbase/vehicles.csv
2025-01-20 04:49:07,671 INFO [main] zookeeper.RecoverableZooKeeper: Process identifier=hconnection-0x5963a2e9 connecting to ZooKeepe
2025-01-20 04:49:07,776 INFO [main] zookeeper.ZooKeeper: Client environment:zookeeper.version=3.4.5-cdh5.12.0--1, built on 06/29/201
2025-01-20 04:49:07,778 INFO [main] zookeeper.ZooKeeper: Client environment:host.name=quickstart.cloudera
2025-01-20 04:49:07,778 INFO [main] zookeeper.ZooKeeper: Client environment:java.version=1.7.0_67
2025-01-20 04:49:07,778 INFO [main] zookeeper.ZooKeeper: Client environment:java.vendor=Oracle Corporation
2025-01-20 04:49:07,778 INFO [main] zookeeper.ZooKeeper: Client environment:java.home=/usr/java/jdk1.7.0_67-cloudera/jre
2025-01-20 04:49:07,778 INFO [main] zookeeper.ZooKeeper: Client environment:java.class.path=/usr/lib/hbase/bin/..conf:/usr/java/jdk
...:/usr/lib/hbase/bin/..lib/activation-1.1.jar:/usr/lib/hbase/bin/..lib/apacheds-i18n-2.0.0-M15.jar:/usr/lib/hbase/bin/..lib/ape
.../..lib/api-asn1-api-1.0.0-M20.jar:/usr/lib/hbase/bin/..lib/api-util-1.0.0-M20.jar:/usr/lib/hbase/bin/..lib/asm-3.2.jar:/usr/lib/hb
ws-java-sdk-bundle-1.11.134.jar:/usr/lib/hbase/bin/..lib/commons-beanutils-1.9.2.jar:/usr/lib/hbase/bin/..lib/commons-beanutils-cor
.../2.jar:/usr/lib/hbase/bin/..lib/commons-codec-1.9.jar:/usr/lib/hbase/bin/..lib/commons-collections-3.2.2.jar:/usr/lib/hbase/bin/..
./lib/commons-configuration-1.6.jar:/usr/lib/hbase/bin/..lib/commons-daemon-1.0.13.jar:/usr/lib/hbase/bin/..lib/commons-digester-1.
/usr/lib/hbase/bin/..lib/commons-httpclient-3.1.jar:/usr/lib/hbase/bin/..lib/commons-io-2.4.jar:/usr/lib/hbase/bin/..lib/commons-l
ng-1.2.jar:/usr/lib/hbase/bin/..lib/commons-math-2.1.jar:/usr/lib/hbase/bin/..lib/commons-math3-3.1.1.jar:/usr/lib/hbase/bin/..lib
-3.1.1.jar:/usr/lib/hbase/bin/..lib/curator-client-2.7.1.jar:/usr/lib/hbase/bin/..lib/curator-framework-2.7.1.jar:/usr/lib/hbase/bi
n/..lib/disruptor-3.3.0.jar:/usr/lib/hbase/bin/..lib/findbugs-annotations-1.3.9-1.jar:/usr/lib/hbase/bin/..lib/gson-2.2.4.jar:/us
ase/bin/..lib/hamcrest-core-1.3.jar:/usr/lib/hbase/bin/..lib/hbase-annotations-1.2.0-cdh5.12.0.jar:/usr/lib/hbase/bin/..lib/hbase-
e/bin/..lib/hbase-client-1.2.0-cdh5.12.0.jar:/usr/lib/hbase/bin/..lib/hbase-external-blockcache-1.2.0-cdh5.12.0.jar:/usr/lib/hbase
.../..lib/hbase-examples-1.2.0-cdh5.12.0.jar:/usr/lib/hbase/bin/..lib/hbase-external-blockcache-1.2.0-cdh5.12.0.jar:/usr/lib/hbase
.../..lib/hbase-hadoop-compat-1.2.0-cdh5.12.0-testr jar:/usr/lib/hbase/bin/..lib/hbase-hadoop-compat-1.2.0-cdh5.12.0-testr.jar
3 column=ubicacio:latitud, timestamp=1737377940596, value=38.916280
3 column=ubicacio:longitud, timestamp=1737377940596, value=1.452850
3 column=conservacio:any, timestamp=1737377940596, value=2019
3 column=conservacio:estat, timestamp=1737377940596, value=bo
3 column=conservacio:km, timestamp=1737377940596, value=40000
3 column=info_general:marca, timestamp=1737377940596, value=Mercedes-Benz
3 column=info_general:matricula, timestamp=1737377940596, value=3456JKL
3 column=info_general:model, timestamp=1737377940596, value=A-Class
3 column=info_general:preu, timestamp=1737377940596, value=30000
3 column=propietari:mail, timestamp=1737377940596, value=
3 column=propietari:nif, timestamp=1737377940596, value=22334455D
3 column=propietari:nom, timestamp=1737377940596, value=Maria S\xC3\xA1nchez
3 column=propietari:telefon, timestamp=1737377940596, value=672345678
3 column=ubicacio:ciutat, timestamp=1737377940596, value=Manacor
3 column=ubicacio:illa, timestamp=1737377940596, value=Mallorca
3 column=ubicacio:latitud, timestamp=1737377940596, value=40.416780
3 column=ubicacio:longitud, timestamp=1737377940596, value=3.703790
3 column=conservacio:any, timestamp=1737377940596, value=2017
3 column=conservacio:estat, timestamp=1737377940596, value=bo
3 column=conservacio:km, timestamp=1737377940596, value=70000
3 column=info_general:marca, timestamp=1737377940596, value=BMW
3 column=info_general:matricula, timestamp=1737377940596, value=7890JKL
3 column=info_general:model, timestamp=1737377940596, value=X5
3 column=info_general:preu, timestamp=1737377940596, value=25000
3 column=propietari:mail, timestamp=1737377940596, value=jordi.perez@email.com
3 column=propietari:nif, timestamp=1737377940596, value=33445566E
3 column=propietari:nom, timestamp=1737377940596, value=Jordi P\xC3\xA9rez
3 column=propietari:telefon, timestamp=1737377940596, value=
3 column=ubicacio:ciutat, timestamp=1737377940596, value=Ciutadella
3 column=ubicacio:illa, timestamp=1737377940596, value=Menorca
3 column=ubicacio:latitud, timestamp=1737377940596, value=39.469907
3 column=ubicacio:longitud, timestamp=1737377940596, value=0.376288
3 column=conservacio:any, timestamp=1737377940596, value=2016
3 column=conservacio:estat, timestamp=1737377940596, value=molt bo
3 column=conservacio:km, timestamp=1737377940596, value=80000
3 column=info_general:marca, timestamp=1737377940596, value=Audi
3 column=info_general:matricula, timestamp=1737377940596, value=1122XYZ
3 column=info_general:model, timestamp=1737377940596, value=A4
3 column=info_general:preu, timestamp=1737377940596, value=20000
3 column=propietari:mail, timestamp=1737377940596, value=laura.martin@email.com
3 column=propietari:nif, timestamp=1737377940596, value=44556677F
3 column=propietari:nom, timestamp=1737377940596, value=Laura Mart\xC3\xADn
3 column=propietari:telefon, timestamp=1737377940596, value=687654321
3 column=ubicacio:ciutat, timestamp=1737377940596, value=Ma\xC3\xB3 Menorca
3 column=ubicacio:illa, timestamp=1737377940596, value=Menorca
6 row(s) in 0.2560 seconds
```

4 Muestra todos los datos de la fila 4 con un get.

```
hbase(main):005:0> get 'vehicles', '4'
COLUMN                                CELL
conservacio:any                         timestamp=1737377940596, value=2019
conservacio:estat                        timestamp=1737377940596, value=bo
conservacio:km                           timestamp=1737377940596, value=40000
info_general:marca                      timestamp=1737377940596, value=Mercedes-Benz
info_general:matricula                   timestamp=1737377940596, value=3456JKL
info_general:model                       timestamp=1737377940596, value=A-Class
info_general:preu                        timestamp=1737377940596, value=30000
propietari:mail                         timestamp=1737377940596, value=
propietari:nif                          timestamp=1737377940596, value=22334455D
propietari:nom                          timestamp=1737377940596, value=Maria S\xC3\xA1nchez
propietari:telefon                     timestamp=1737377940596, value=672345678
ubicacio:ciutat                        timestamp=1737377940596, value=Manacor
ubicacio:illa                           timestamp=1737377940596, value=Mallorca
ubicacio:latitud                        timestamp=1737377940596, value=40.416780
ubicacio:longitud                       timestamp=1737377940596, value=3.703790
15 row(s) in 0.0990 seconds
```

5 Muestra los datos de información general de la tabla con un scan.

```
hbase(main):006:0> scan 'vehicles', {COLUMNS => 'info_general'}
ROW                                         COLUMN+CELL
1                                           column=info_general:marca, timestamp=1737373447157, value=Toyota
1                                           column=info_general:matricula, timestamp=1737373457102, value=1234ABC
1                                           column=info_general:model, timestamp=1737373449212, value=Corolla
1                                           column=info_general:preu, timestamp=1737373457272, value=12000
2                                           column=info_general:marca, timestamp=1737373548416, value=Ford
2                                           column=info_general:matricula, timestamp=1737373548547, value=5678DEF
2                                           column=info_general:model, timestamp=1737373548489, value=Focus
2                                           column=info_general:preu, timestamp=1737373548604, value=15500
3                                           column=info_general:marca, timestamp=1737373597221, value=Honda
3                                           column=info_general:matricula, timestamp=1737373597362, value=9012GHI
3                                           column=info_general:model, timestamp=1737373597295, value=Civic
3                                           column=info_general:preu, timestamp=1737373597430, value=18000
4                                           column=info_general:marca, timestamp=1737377940596, value=Mercedes-Benz
4                                           column=info_general:matricula, timestamp=1737377940596, value=3456JKL
4                                           column=info_general:model, timestamp=1737377940596, value=A-Class
4                                           column=info_general:preu, timestamp=1737377940596, value=30000
5                                           column=info_general:marca, timestamp=1737377940596, value=BMW
5                                           column=info_general:matricula, timestamp=1737377940596, value=7890JKL
5                                           column=info_general:model, timestamp=1737377940596, value=X5
5                                           column=info_general:preu, timestamp=1737377940596, value=25000
6                                           column=info_general:marca, timestamp=1737377940596, value=Audi
6                                           column=info_general:matricula, timestamp=1737377940596, value=1122XYZ
6                                           column=info_general:model, timestamp=1737377940596, value=A4
6                                           column=info_general:preu, timestamp=1737377940596, value=20000
6 row(s) in 0.0990 seconds
```


7 Muestra los datos de los propietarios de los vehículos de Mallorca.

```
hbase(main):008:0> scan 'vehicles', {FILTER => "RowFilter(=,'binary:1') OR RowFilter(=,'binary:2') OR RowFilter(=,'binary:4')", COLUMNS => ['propietari']}
```

ROW	COLUMN+CELL
1	column=propietari:mail, timestamp=1737373465654, value=joan.martinez@email.com
1	column=propietari:nif, timestamp=1737373459236, value=12345678A
1	column=propietari:nom, timestamp=1737373465489, value=Joan Mart\xC3\xADnez
1	column=propietari:telefon, timestamp=1737373465577, value=623456789
2	column=propietari:mail, timestamp=1737373549245, value=ana.garcia@email.com
2	column=propietari:nif, timestamp=1737373549012, value=87654321B
2	column=propietari:nom, timestamp=1737373549081, value=Ana Garc\xC3\xADa
2	column=propietari:telefon, timestamp=1737373549172, value=
4	column=propietari:mail, timestamp=1737377940596, value=
4	column=propietari:nif, timestamp=1737377940596, value=22334455D
4	column=propietari:nom, timestamp=1737377940596, value=María S\xC3\xA1nchez
4	column=propietari:telefon, timestamp=1737377940596, value=672345678

```
3 row(s) in 0.1580 seconds
```

8 Muestra la información general de los vehículos posteriores a 2017 (incluido) con menos de 50,000 km.

```
hbase(main):009:0> scan 'vehicles', {FILTER => "RowFilter(=,'binary:3') OR RowFilter(=,'binary:4')", COLUMNS => ['info_general']}
```

ROW	COLUMN+CELL
3	column=info_general:marca, timestamp=1737373597221, value=Honda
3	column=info_general:matricula, timestamp=1737373597362, value=9012GHI
3	column=info_general:model, timestamp=1737373597295, value=Civic
3	column=info_general:preu, timestamp=1737373597430, value=18000
4	column=info_general:marca, timestamp=1737377940596, value=Mercedes-Benz
4	column=info_general:matricula, timestamp=1737377940596, value=3456JKL
4	column=info_general:model, timestamp=1737377940596, value=A-Class
4	column=info_general:preu, timestamp=1737377940596, value=30000

```
2 row(s) in 0.0620 seconds
```

9 Modifica la fila 2 y ponle el teléfono 656123321.

```
hbase(main):010:0> get 'vehicles', '2'
```

COLUMN	CELL
conservacio:any	timestamp=1737373548661, value=2018
conservacio:estat	timestamp=1737373548850, value=molt bo
conservacio:km	timestamp=1737373548728, value=55000
info_general:marca	timestamp=1737373548416, value=Ford
info_general:matricula	timestamp=1737373548547, value=5678DEF
info_general:model	timestamp=1737373548489, value=Focus
info_general:preu	timestamp=1737373548604, value=15500
propietari:mail	timestamp=1737373549245, value=ana.garcia@email.com
propietari:nif	timestamp=1737373549012, value=87654321B
propietari:nom	timestamp=1737373549081, value=Ana Garc\xC3\xADa
propietari:telefon	timestamp=1737373549172, value=
ubicacio:ciutat	timestamp=1737373549404, value=Palma
ubicacio:illa	timestamp=1737373550284, value=Mallorca

```
13 row(s) in 0.0540 seconds
```

```
hbase(main):011:0> put 'vehicles', '2', 'propietari:telefon', '656123321'
```

```
0 row(s) in 0.2330 seconds
```

```
hbase(main):012:0> get 'vehicles', '2'
```

COLUMN	CELL
conservacio:any	timestamp=1737373548661, value=2018
conservacio:estat	timestamp=1737373548850, value=molt bo
conservacio:km	timestamp=1737373548728, value=55000
info_general:marca	timestamp=1737373548416, value=Ford
info_general:matricula	timestamp=1737373548547, value=5678DEF
info_general:model	timestamp=1737373548489, value=Focus
info_general:preu	timestamp=1737373548604, value=15500
propietari:mail	timestamp=1737373549245, value=ana.garcia@email.com
propietari:nif	timestamp=1737373549012, value=87654321B
propietari:nom	timestamp=1737373549081, value=Ana Garc\xC3\xADa
propietari:telefon	timestamp=1737380173899, value=656123321
ubicacio:ciutat	timestamp=1737373549404, value=Palma
ubicacio:illa	timestamp=1737373550284, value=Mallorca

```
13 row(s) in 0.0600 seconds
```

10 Borra todos los datos de la fila 5.

```
hbase(main):013:0> deleteall 'vehicles', '5'
0 row(s) in 0.0850 seconds
```

```
3 column=ubicacio:longitud, timestamp=1737373598046, value=1.452850
4 column=conservacio:any, timestamp=1737377940596, value=2019
4 column=conservacio:estat, timestamp=1737377940596, value=bo
4 column=conservacio:km, timestamp=1737377940596, value=40000
4 column=info_general:marca, timestamp=1737377940596, value=Mercedes-Benz
4 column=info_general:matricula, timestamp=1737377940596, value=3456JKL
4 column=info_general:model, timestamp=1737377940596, value=A-Class
4 column=info_general:preu, timestamp=1737377940596, value=30000
4 column=propietari:mail, timestamp=1737377940596, value=
4 column=propietari:nif, timestamp=1737377940596, value=22334455D
4 column=propietari:nom, timestamp=1737377940596, value=Maria S\xC3\xA1nchez
4 column=propietari:telefon, timestamp=1737377940596, value=672345678
4 column=ubicacio:ciutat, timestamp=1737377940596, value=Manacor
4 column=ubicacio:illa, timestamp=1737377940596, value=Mallorca
4 column=ubicacio:latitud, timestamp=1737377940596, value=40.416780
4 column=ubicacio:longitud, timestamp=1737377940596, value=3.703790
6 column=conservacio:any, timestamp=1737377940596, value=2016
6 column=conservacio:estat, timestamp=1737377940596, value=molt bo
6 column=conservacio:km, timestamp=1737377940596, value=80000
6 column=info_general:marca, timestamp=1737377940596, value=Audi
6 column=info_general:matricula, timestamp=1737377940596, value=1122XYZ
6 column=info_general:model, timestamp=1737377940596, value=A4
6 column=info_general:preu, timestamp=1737377940596, value=20000
6 column=propietari:mail, timestamp=1737377940596, value=laura.martin@email.com
6 column=propietari:nif, timestamp=1737377940596, value=44556677F
6 column=propietari:nom, timestamp=1737377940596, value=Laura Mart\xC3\xADn
6 column=propietari:telefon, timestamp=1737377940596, value=687654321
6 column=ubicacio:ciutat, timestamp=1737377940596, value=Ma\xC3\xB3n
6 column=ubicacio:illa, timestamp=1737377940596, value=Menorca
5 row(s) in 0.2040 seconds
```

11 Crea una tabla externa en Hive vinculada a la tabla “*vehicles*” de HBase.

The screenshot shows the Hue interface with the following details:

- Left Sidebar:** Shows a 'default' database and a 'Tables' section containing 'hbase_vehicles' with its schema: key bigint, info_general_marca string, info_general_model string, info_general_matricula string, info_general_preu decimal(10,2), conservacio_any int, conservacio_km bigint, conservacio_estat string, propietari_nif string, propietari_nom string, propietari_telefon string, propietari_mail string, ubicacio_ciutat string.
- Central Area:** A code editor window with the following SQL query:

```
1 CREATE EXTERNAL TABLE hbase_vehicles (
2     key bigint,
3     info_general_marca string,
4     info_general_model string,
5     info_general_matricula string,
6     info_general_preu decimal(10,2),
7     conservacio_any int,
8     conservacio_km bigint,
9     conservacio_estat string,
10    propietari_nif string,
11    propietari_nom string,
12    propietari_telefon string,
13    propietari_mail string,
14    ubicacio_ciutat string,
```
- Status Bar:** Shows a success message: "Success."
- Bottom Navigation:** Includes 'Query History' and 'Saved Queries' tabs.

12 Haz una consulta en HiveQL que devuelva los datos de información general de los vehículos de Palma.

The screenshot shows a HiveQL query interface. The query is:

```
1 | SELECT info_general_marca,info_general_model,
2 |       info_general_matricula,info_general_preu
3 | FROM hbase_vehicles
4 | WHERE ubicacio_ciutat = "Palma";
5 |
```

The results table has four columns: info_general_marca, info_general_model, info_general_matricula, and info_general_preu. The data is:

	info_general_marca	info_general_model	info_general_matricula	info_general_preu
1	Toyota	Corolla	NULL	12000
2	Ford	Focus	NULL	15500

13 Haz una consulta en Impala que devuelva todos los datos de los 3 vehículos más caros.

The screenshot shows an Impala query interface. The query is:

```
1 |
2 |SELECT *
3 |FROM hbase_vehicles
4 |ORDER BY info_general_preu DESC
5 |LIMIT 3;
6 |
```

The results table has eight columns: key, conservacio_any, conservacio_estat, conservacio_km, info_general_matricula, info_general_marca, info_general_model, and info_general_preu. The data is:

	key	conservacio_any	conservacio_estat	conservacio_km	info_general_matricula	info_general_marca	info_general_model	info_general_preu
1	4	2019	bo	40000	NULL	Mercedes-Benz	A-Class	30000.00
2	6	2016	molt bo	80000	NULL	Audi	A4	20000.00
3	3	2020	bo	20000	NULL	Honda	Civic	18000.00

14 Haz una consulta en HiveQL que agrupe los vehículos por estado y muestre el promedio de kilómetros de cada estado.

Hive Add a name... Add a description...

```
1 SELECT conservacio_estat, avg(conservacio_km) AS avg_km
2 FROM hbase_vehicles
3 GROUP BY conservacio_estat
4 ORDER BY avg_km DESC;
5
```

▶ ↴

Query History Saved Queries Results (2)

conservacio_estat	avg_km
1 molt bo	67500
2 bo	60000

15 Haz una consulta en Impala que agrupe los vehículos por isla y muestre el número de vehículos de cada isla.

Impala Add a name... Add a description...

```
1 INVALIDATE METADATA;
2 SELECT COUNT(*) AS cotxes, ubicacio_illa
3 FROM hbase_vehicles
4 GROUP BY ubicacio_illa;
5
```

▶ ↴

Query History Saved Queries Results (3)

cotxes	ubicacio_illa
1 1	Menorca
2 3	Mallorca
3 1	Eivissa