2016

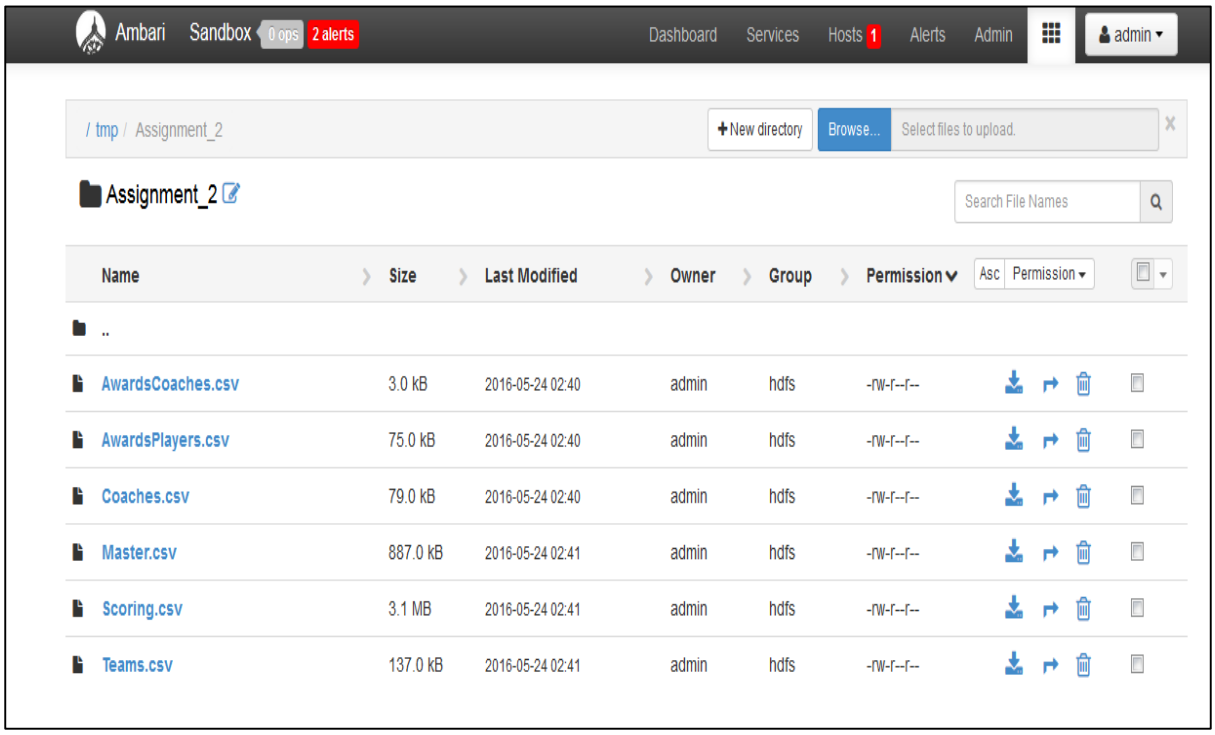
Assignment 2

JAYESH PARAB & GAGANDEEP SINGH BHUTANI

Table Of Content

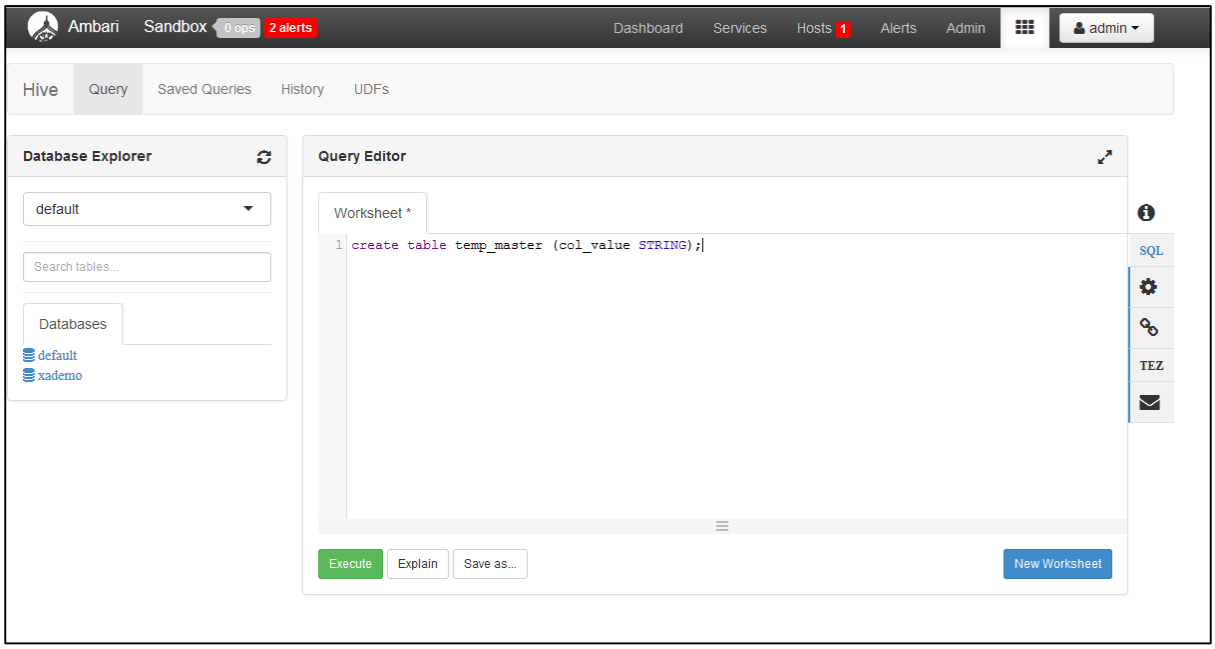
1 Task 1 Creating Table

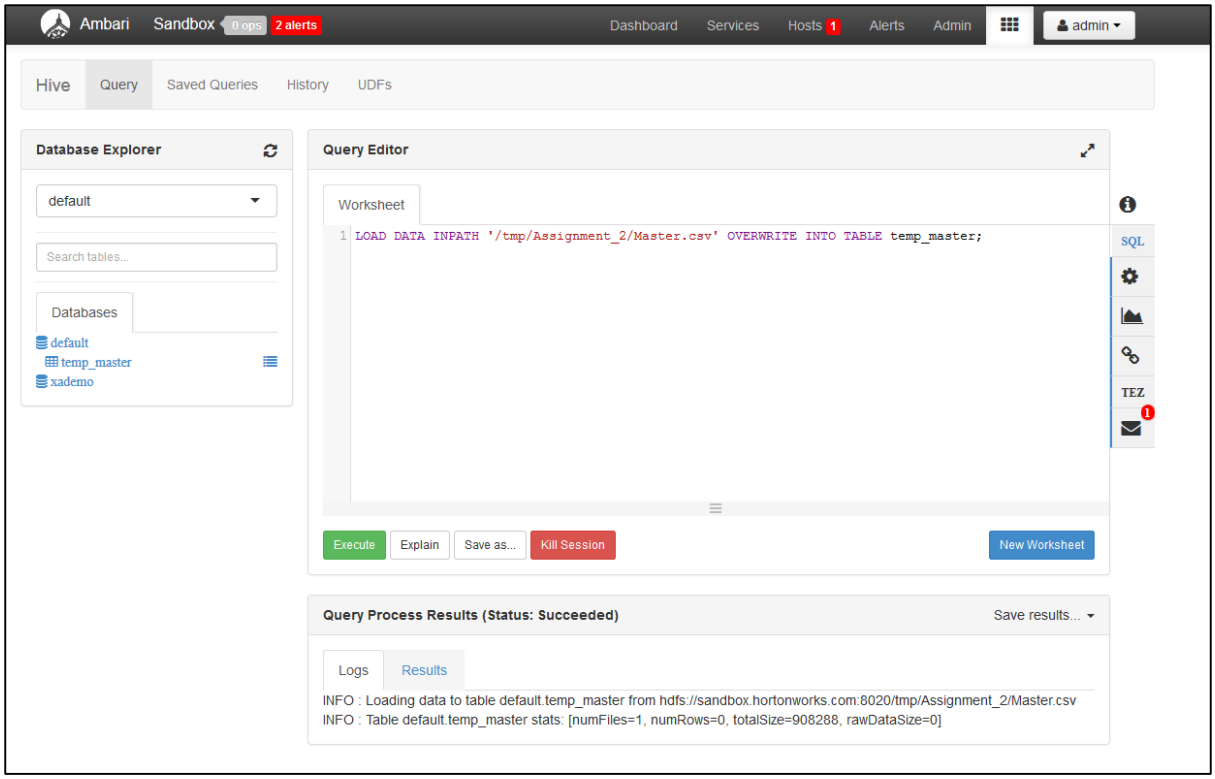
1.1 CSV Files uploaded to HDFS Files

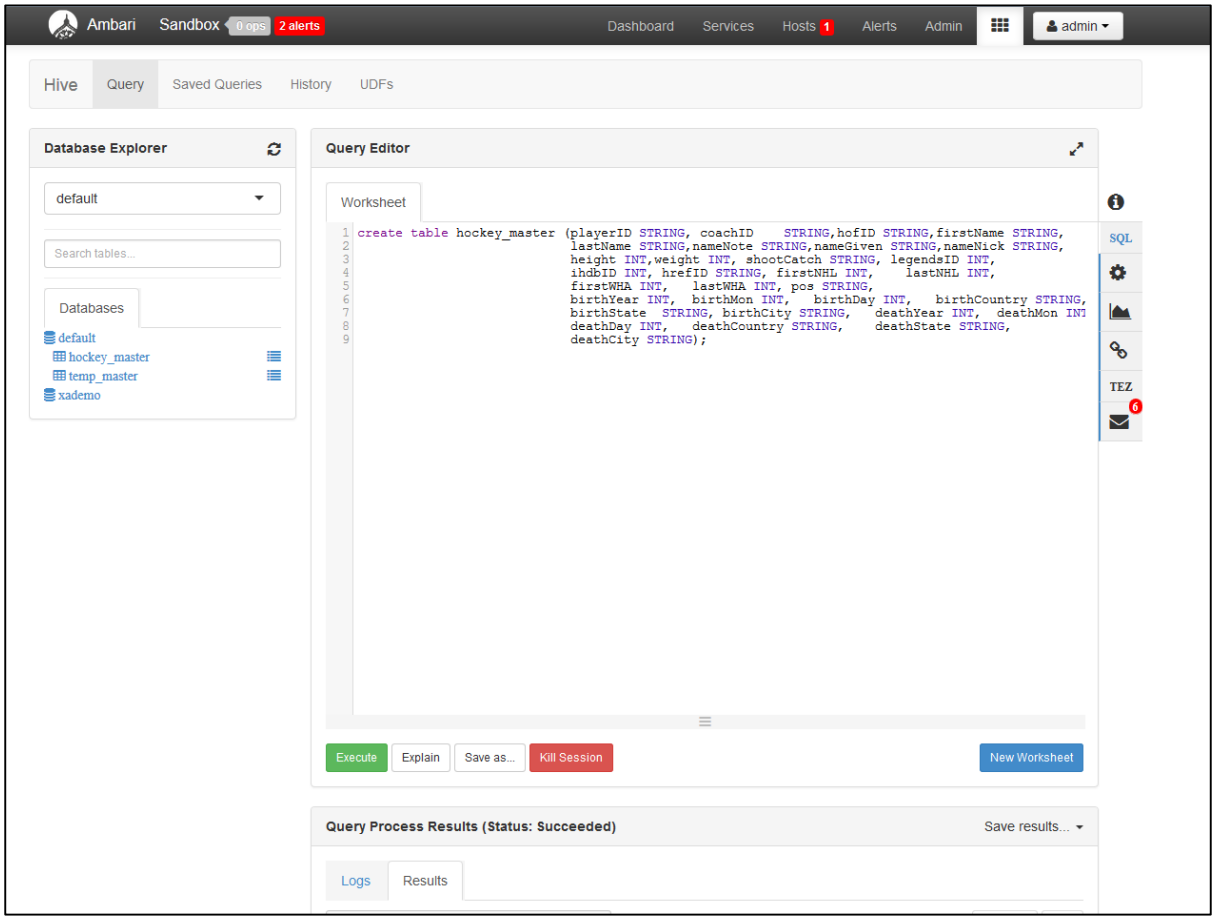


1.2 Hive Tables

1.2.1 Create Masters Table




Ambari
Sandbox
0 ops
2 alerts
Dashboard
Services
Hosts 1
Alerts
Admin
admin
Hive
Query
Saved Queries
History
UDFs
Database Explorer
default
Search tables...
Databases
default
temp_master
xademo
Query Editor
Worksheet
LOAD DATA INPATH '/tmp/Assignment_2/Master.csv' OVERWRITE INTO TABLE temp_master;
SQL
TEZ
Execute
Explain
Save as...
Kill Session
New Worksheet
Query Process Results (Status: Succeeded)
Save results...
Logs
Results
INFO : Loading data to table default.temp_master from hdfs://sandbox.hortonworks.com:8020/tmp/Assignment_2/Master.csv
INFO : Table default.temp_master stats: [numFiles=1, numRows=0, totalSize=908288, rawDataSize=0]


Ambari
Sandbox
0 ops
2 alerts
Dashboard
Services
Hosts 1
Alerts
Admin
admin
Hive
Query
Saved Queries
History
UDFs
Database Explorer
default
Search tables...
Databases
default
hockey_master
temp_master
xademo
Query Editor
Worksheet
create table hockey_master (playerID STRING, coachID STRING,hofID STRING,firstName STRING,
lastName STRING,nameNote STRING,nameGiven STRING,nameNick STRING,
height INT,weight INT, shootCatch STRING, legendsID INT,
ihdbID INT, hrefID STRING, firstNHL INT, lastNHL INT,
firstWHA INT, lastWHA INT, pos STRING,
birthYear INT, birthMon INT, birthDay INT, birthCountry STRING,
birthState STRING, birthCity STRING, deathYear INT, deathMon INT
deathDay INT, deathCountry STRING, deathState STRING,
deathCity STRING);
SQL
TEZ
Execute
Explain
Save as...
Kill Session
New Worksheet
Query Process Results (Status: Succeeded)
Save results...
Logs
Results

Ambari Sandbox 0 ops 2 alerts Dashboard Services Hosts 1 Alerts Admin admin

Hive Query Saved Queries History UDFs

Database Explorer

default

Search tables...

Databases

- default
  - hockey_master
  - temp_master
- xademo

Query Editor

Worksheet *

```
insert overwrite table hockey_master
SELECT
regexp_extract(col_value, '^(?:([^,]*)\,?){1}', 1) playerID,
regexp_extract(col_value, '^(?:([^,]*)\,?){2}', 1) coachID,
regexp_extract(col_value, '^(?:([^,]*)\,?){3}', 1) hofID,
regexp_extract(col_value, '^(?:([^,]*)\,?){4}', 1) firstName,
regexp_extract(col_value, '^(?:([^,]*)\,?){5}', 1) lastName,
regexp_extract(col_value, '^(?:([^,]*)\,?){6}', 1) nameNote,
regexp_extract(col_value, '^(?:([^,]*)\,?){7}', 1) nameGiven,
regexp_extract(col_value, '^(?:([^,]*)\,?){8}', 1) nameNick,
regexp_extract(col_value, '^(?:([^,]*)\,?){9}', 1) height,
regexp_extract(col_value, '^(?:([^,]*)\,?){10}', 1) weight,
regexp_extract(col_value, '^(?:([^,]*)\,?){11}', 1) shootCatch,
regexp_extract(col_value, '^(?:([^,]*)\,?){12}', 1) legendsID,
regexp_extract(col_value, '^(?:([^,]*)\,?){13}', 1) ihdbID,
regexp_extract(col_value, '^(?:([^,]*)\,?){14}', 1) hrefID,
regexp_extract(col_value, '^(?:([^,]*)\,?){15}', 1) firstNHL,
regexp_extract(col_value, '^(?:([^,]*)\,?){16}', 1) lastNHL,
regexp_extract(col_value, '^(?:([^,]*)\,?){17}', 1) firstWHA,
regexp_extract(col_value, '^(?:([^,]*)\,?){18}', 1) lastWHA,
regexp_extract(col_value, '^(?:([^,]*)\,?){19}', 1) pos,
regexp_extract(col_value, '^(?:([^,]*)\,?){20}', 1) birthYear,
regexp_extract(col_value, '^(?:([^,]*)\,?){21}', 1) birthMon,
regexp_extract(col_value, '^(?:([^,]*)\,?){22}', 1) birthDay,
regexp_extract(col_value, '^(?:([^,]*)\,?){23}', 1) birthCountry,
regexp_extract(col_value, '^(?:([^,]*)\,?){24}', 1) birthState,
regexp_extract(col_value, '^(?:([^,]*)\,?){25}', 1) birthCity,
regexp_extract(col_value, '^(?:([^,]*)\,?){26}', 1) deathYear,
regexp_extract(col_value, '^(?:([^,]*)\,?){27}', 1) deathMon,
regexp_extract(col_value, '^(?:([^,]*)\,?){28}', 1) deathDay,
regexp_extract(col_value, '^(?:([^,]*)\,?){29}', 1) deathCountry,
regexp_extract(col_value, '^(?:([^,]*)\,?){30}', 1) deathState,
regexp_extract(col_value, '^(?:([^,]*)\,?){31}', 1) deathCity
from temp_master;
```

Execute Explain Save as... Kill Session New Worksheet

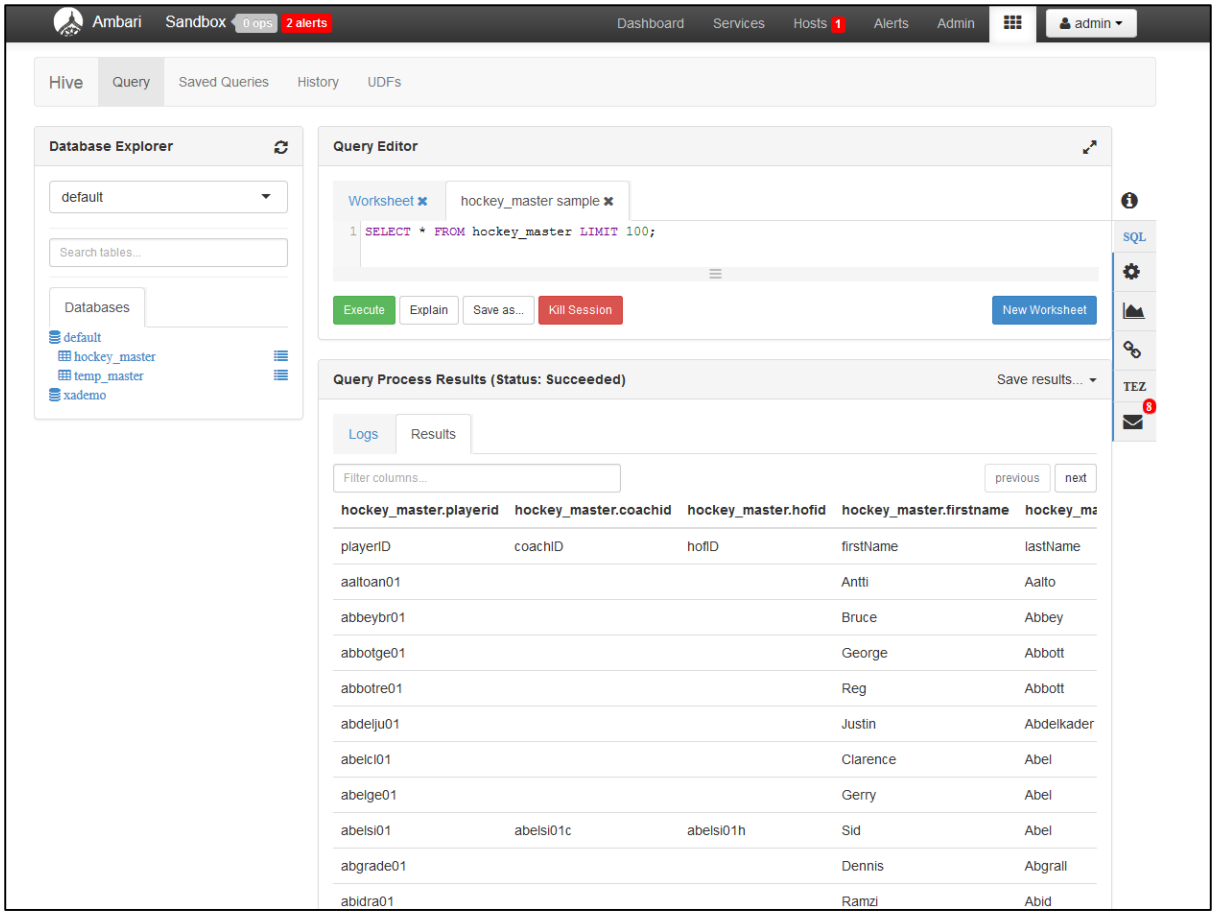
Query Process Results (Status: Succeeded) Save results...

Logs Results

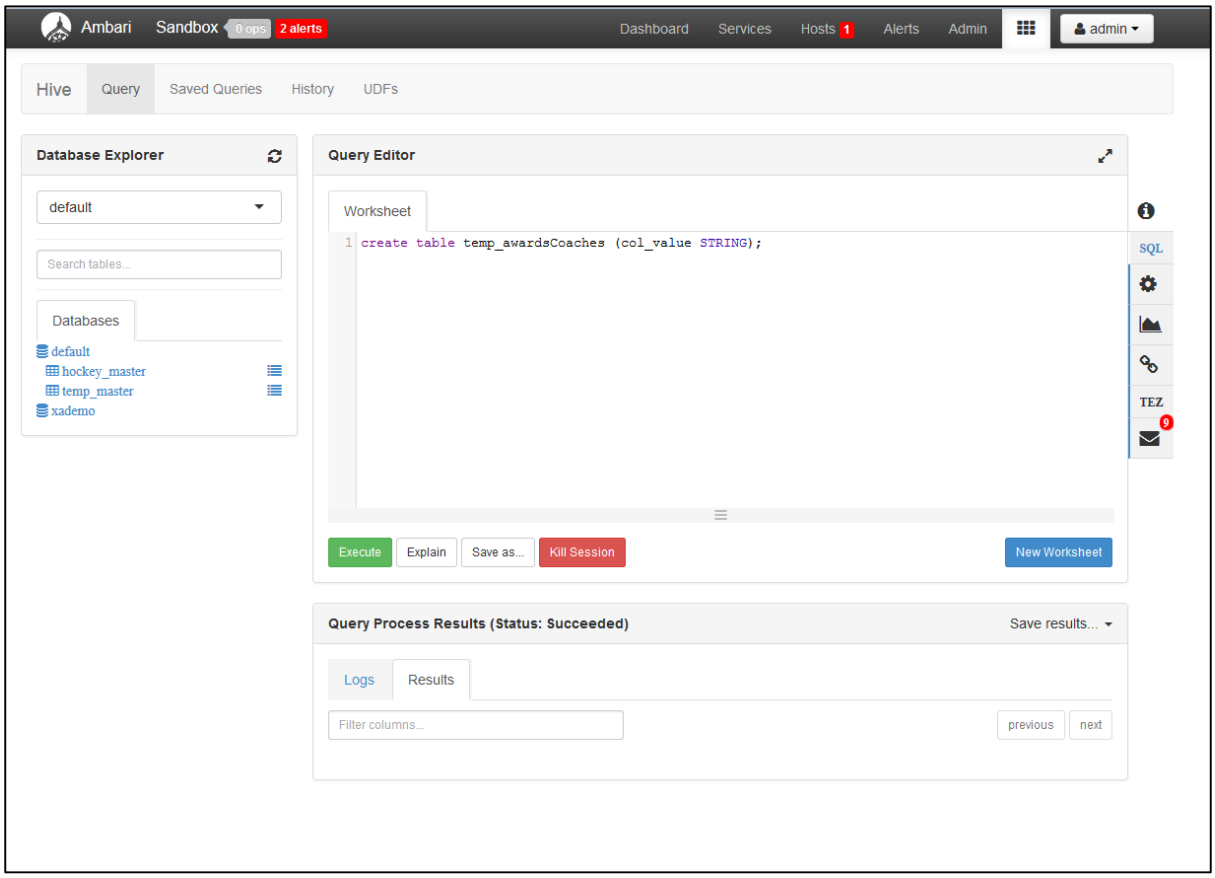
Query Process Results (Status: SUCCEEDED) Save results...

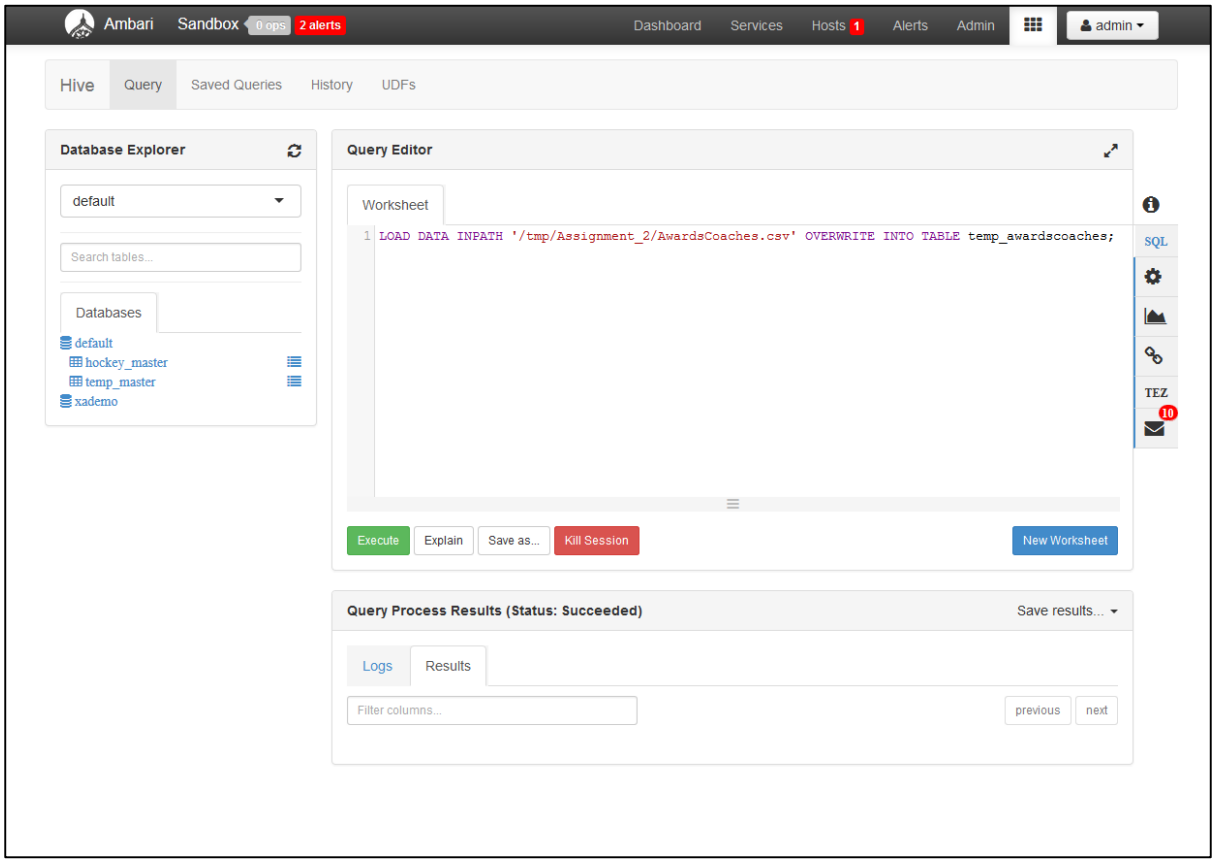
Logs Results

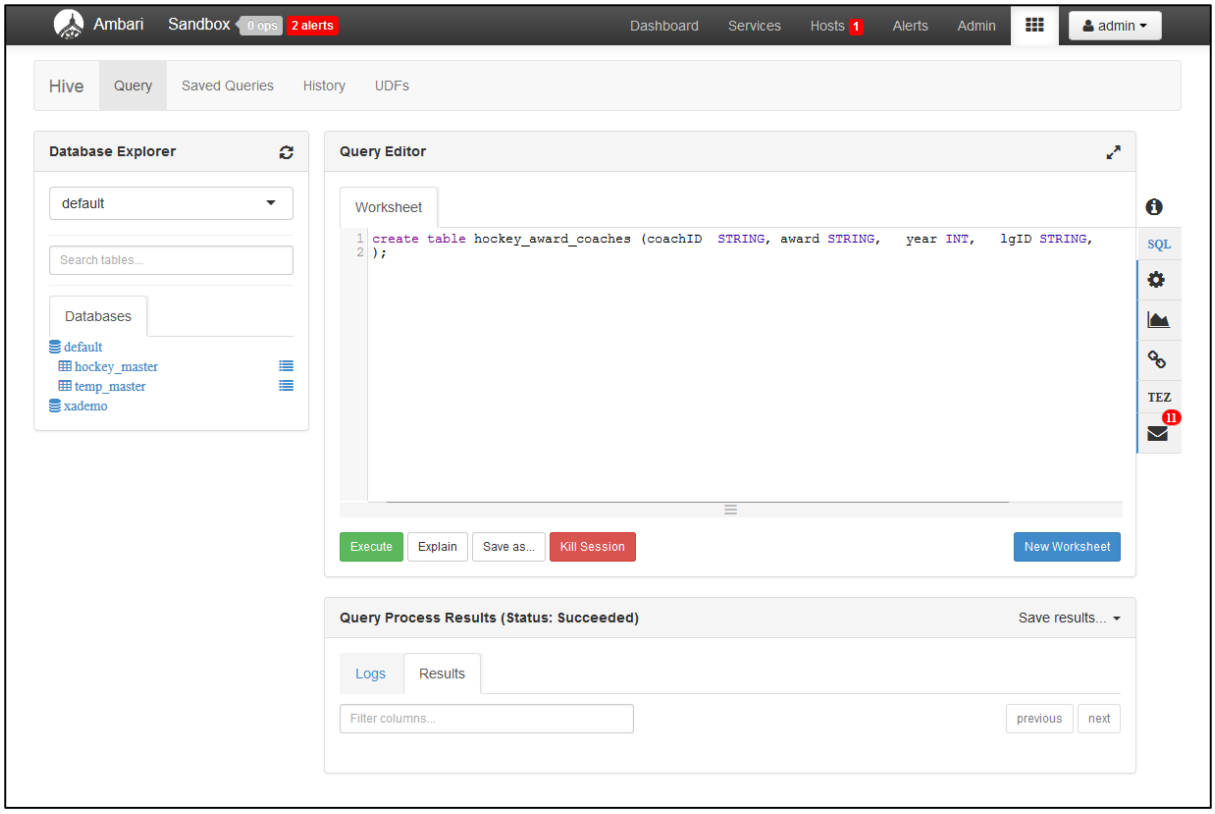
```
INFO : Session is already open
INFO : Tez session was closed. Reopening...
INFO : Session re-established.
INFO :

INFO : Status: Running (Executing on YARN cluster with App id application_1464020964330_0002)

INFO : Map 1: -/-
INFO : Map 1: 0/1
INFO : Map 1: 0(+1)/1
INFO : Map 1: 1/1
INFO : Loading data to table default.hockey_master from hdfs://sandbox.hortonworks.com:8020/apps/hive/warehouse
/hockey_master/.hive-staging_hive_2016-05-23_17-06-23_364_5602784475350367082-1/-ext-10000
INFO : Table default.hockey_master stats: [numFiles=1, numRows=7770, totalSize=983699, rawDataSize=975929]
```

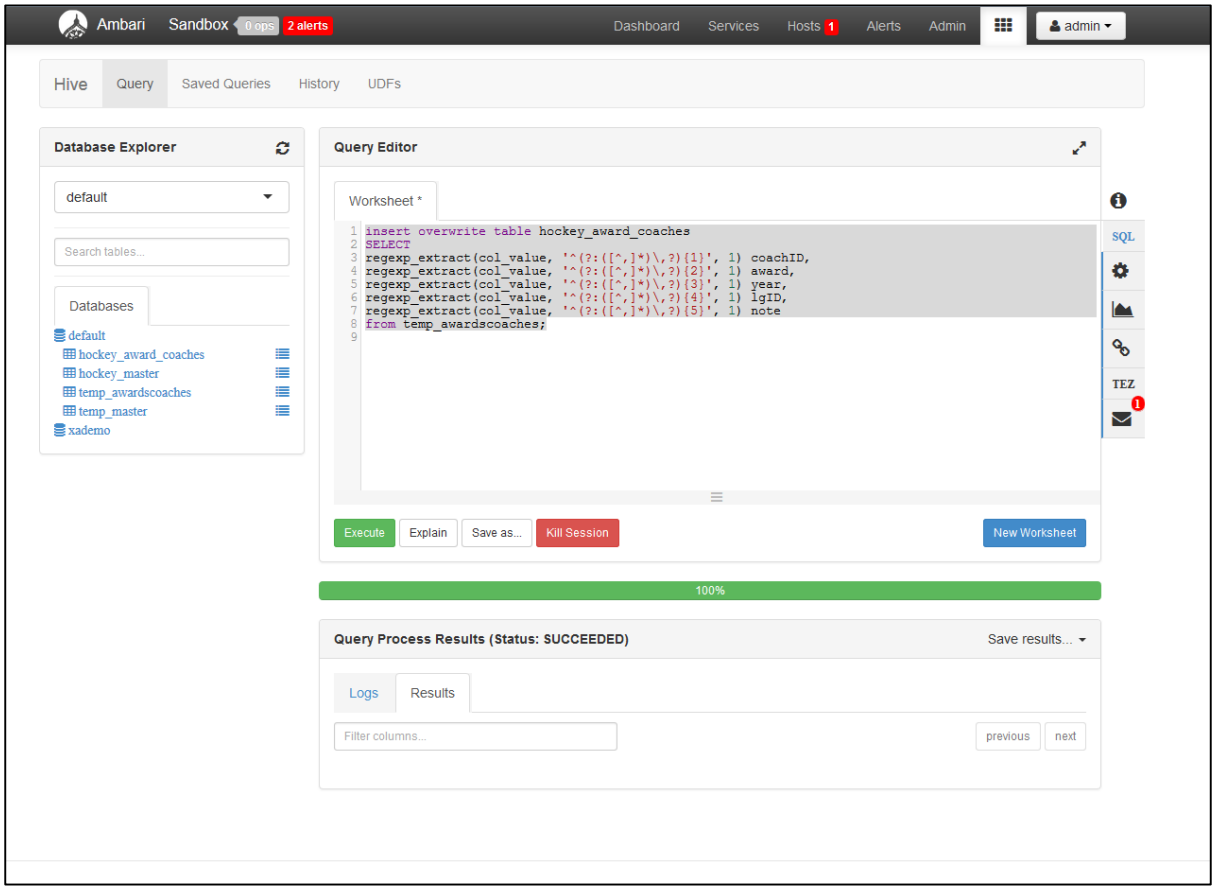

Ambari
Sandbox
0 ops
2 alerts
Dashboard
Services
Hosts 1
Alerts
Admin
admin
Hive
Query
Saved Queries
History
UDFs
Database Explorer
default
Search tables...
Databases
default
hockey_master
temp_master
xademo
Query Editor
Worksheet
hockey_master sample
1 SELECT * FROM hockey_master LIMIT 100;
Execute
Explain
Save as...
Kill Session
New Worksheet
SQL
TEZ
Query Process Results (Status: Succeeded)
Save results...
Logs
Results
Filter columns...
previous
next
hockey_master.playerid
hockey_master.coachid
hockey_master.hofid
hockey_master.firstname
hockey_ma
playerID
coachID
hofID
firstName
lastName
aaltoan01
Antti
Aalto
abbeybr01
Bruce
Abbey
abbotge01
George
Abbott
abbotre01
Reg
Abbott
abdelju01
Justin
Abdelkader
abelcl01
Clarence
Abel
abelge01
Gerry
Abel
abelsi01
abelsi01c
abelsi01h
Sid
Abel
abgrade01
Dennis
Abgrall
abidra01
Ramzi
Abid

1.2.2 Create AwardsCoaches table






Ambari
Sandbox
0 ops
2 alerts
Dashboard
Services
Hosts 1
Alerts
Admin
admin
Hive
Query
Saved Queries
History
UDFs
Database Explorer
default
Search tables...
Databases
default
hockey_master
temp_master
xademo
Query Editor
Worksheet
create table hockey_award_coaches (coachID STRING, award STRING, year INT, lgID STRING,
);
SQL
TEZ
Execute
Explain
Save as...
Kill Session
New Worksheet
Query Process Results (Status: Succeeded)
Save results...
Logs
Results
Filter columns...
previous
next


Ambari
Sandbox
0 ops
2 alerts
Dashboard
Services
Hosts 1
Alerts
Admin
admin
Hive
Query
Saved Queries
History
UDFs
Database Explorer
default
Search tables...
Databases
default
hockey_award_coaches
hockey_master
temp_awardscoaches
temp_master
xademo
Query Editor
Worksheet *
insert overwrite table hockey_award_coaches
SELECT
regexp_extract(col_value, '^(?:([^,]*)\,?){1}', 1) coachID,
regexp_extract(col_value, '^(?:([^,]*)\,?){2}', 1) award,
regexp_extract(col_value, '^(?:([^,]*)\,?){3}', 1) year,
regexp_extract(col_value, '^(?:([^,]*)\,?){4}', 1) lgID,
regexp_extract(col_value, '^(?:([^,]*)\,?){5}', 1) note
from temp_awardscoaches;
SQL
TEZ
Execute
Explain
Save as...
Kill Session
New Worksheet
100%
Query Process Results (Status: SUCCEEDED)
Save results...
Logs
Results
Filter columns...
previous
next

Query Process Results (Status: SUCCEEDED) Save results...

Logs Results

```
INFO : Tez session hasn't been created yet. Opening session
INFO :

INFO : Status: Running (Executing on YARN cluster with App id application_1464020964330_0003)

INFO : Map 1: -/-
INFO : Map 1: 0/1
INFO : Map 1: 0(+1)/1
INFO : Map 1: 1/1
INFO : Loading data to table default.hockey_award_coaches from hdfs://sandbox.hortonworks.com:8020/apps/hive/warehouse
/hockey_award_coaches/.hive-staging_hive_2016-05-23_17-13-51_529_7810236180340934160-1/-ext-10000
INFO : Table default.hockey_award_coaches stats: [numFiles=1, numRows=88, totalSize=3073, rawDataSize=2985]
```

Ambari Sandbox 0 ops 2 alerts Dashboard Services Hosts 1 Alerts Admin admin

Hive Query Saved Queries History UDFs

Database Explorer

default

Search tables...

Databases

- default
  - hockey_award_coaches
  - hockey_master
  - temp_awardscoaches
  - temp_master
- xademo

Query Editor

Worksheet * hockey_award_coaches sample

```
1 SELECT * FROM hockey_award_coaches LIMIT 100;
```

Execute Explain Save as... Kill Session New Worksheet

SQL TEZ

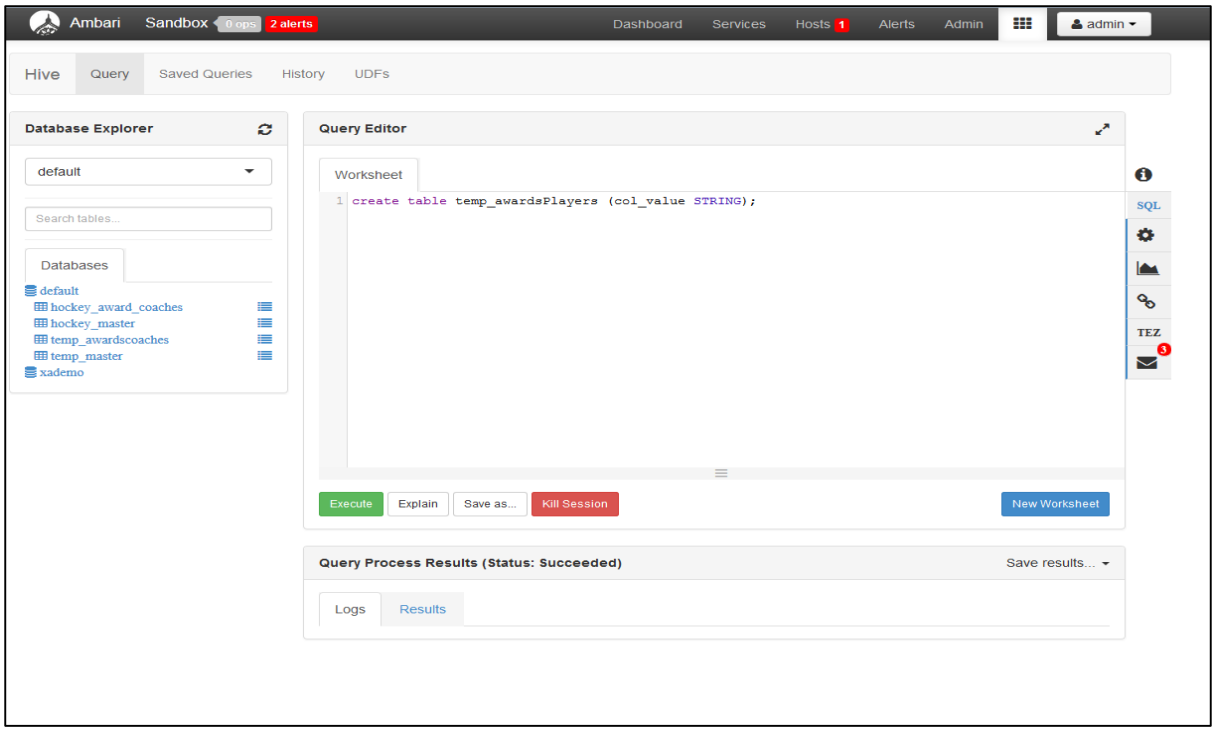
Query Process Results (Status: Succeeded) Save results...

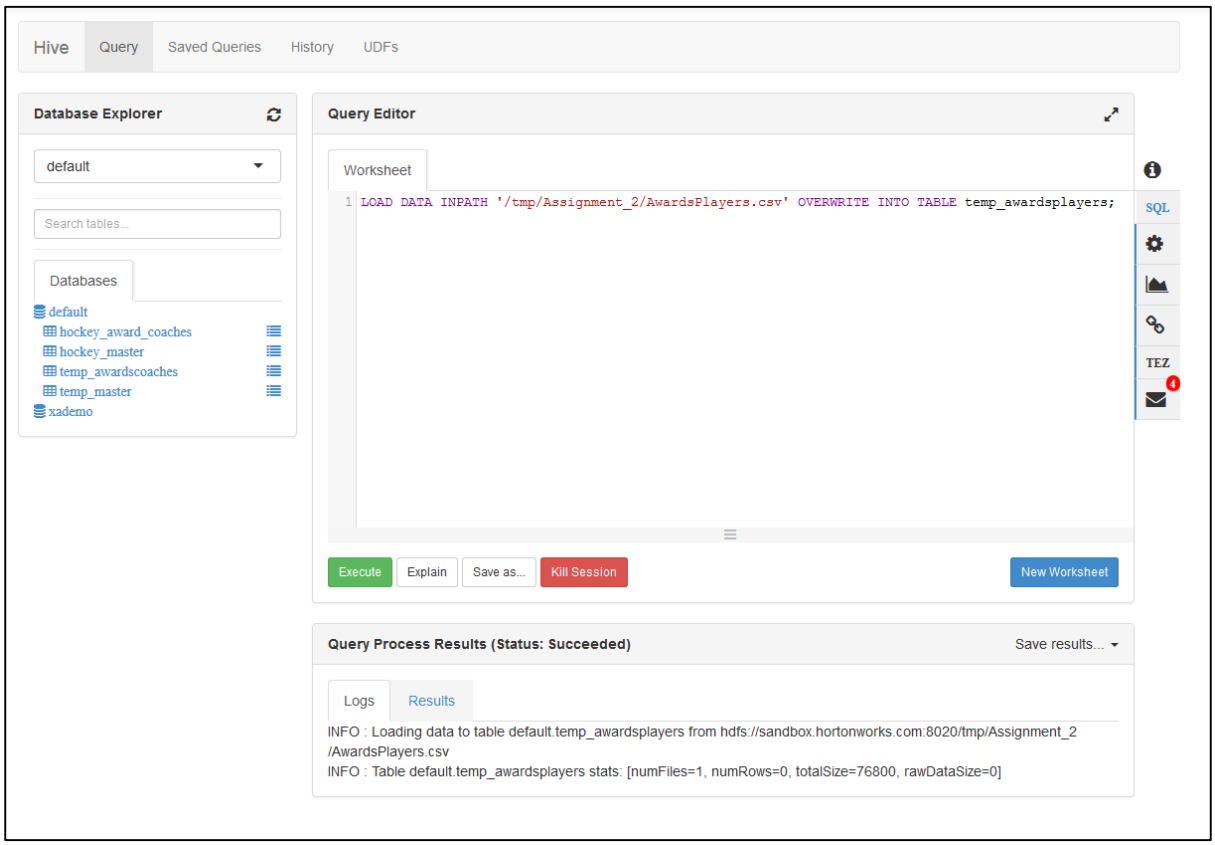
Logs Results

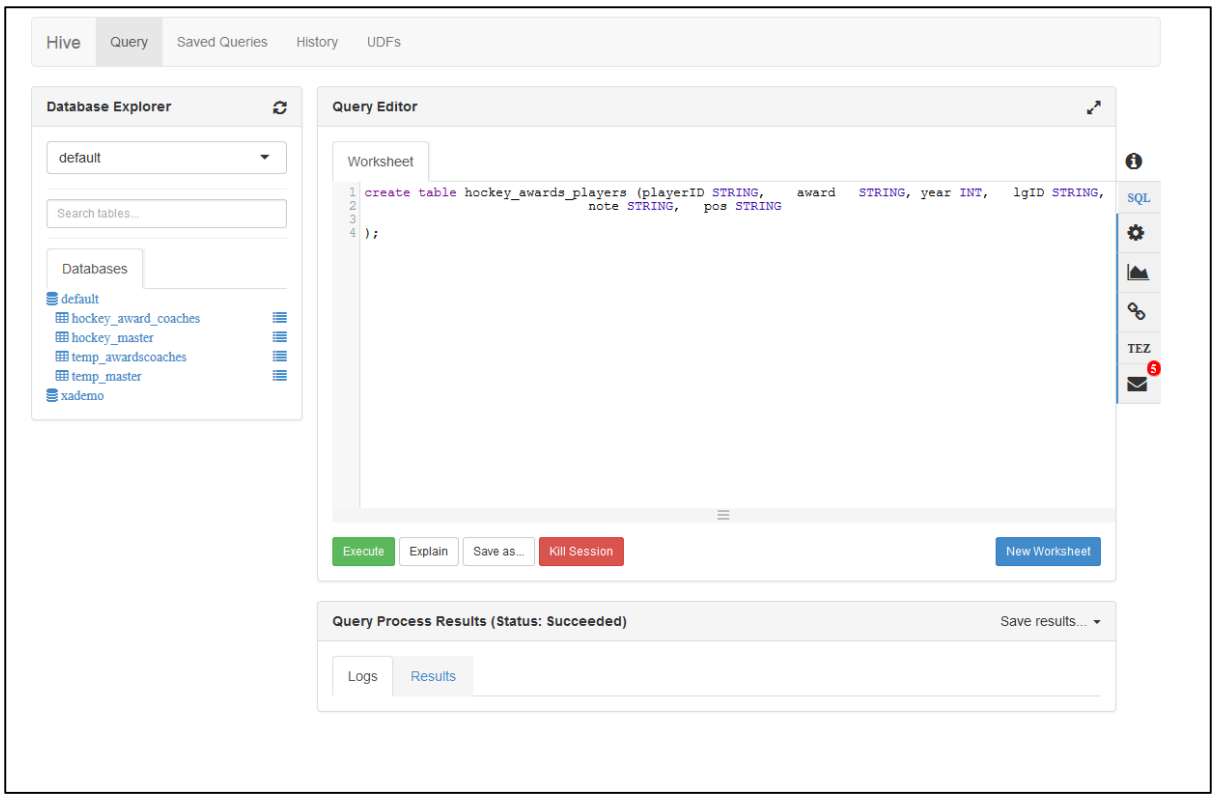
Filter columns... previous next

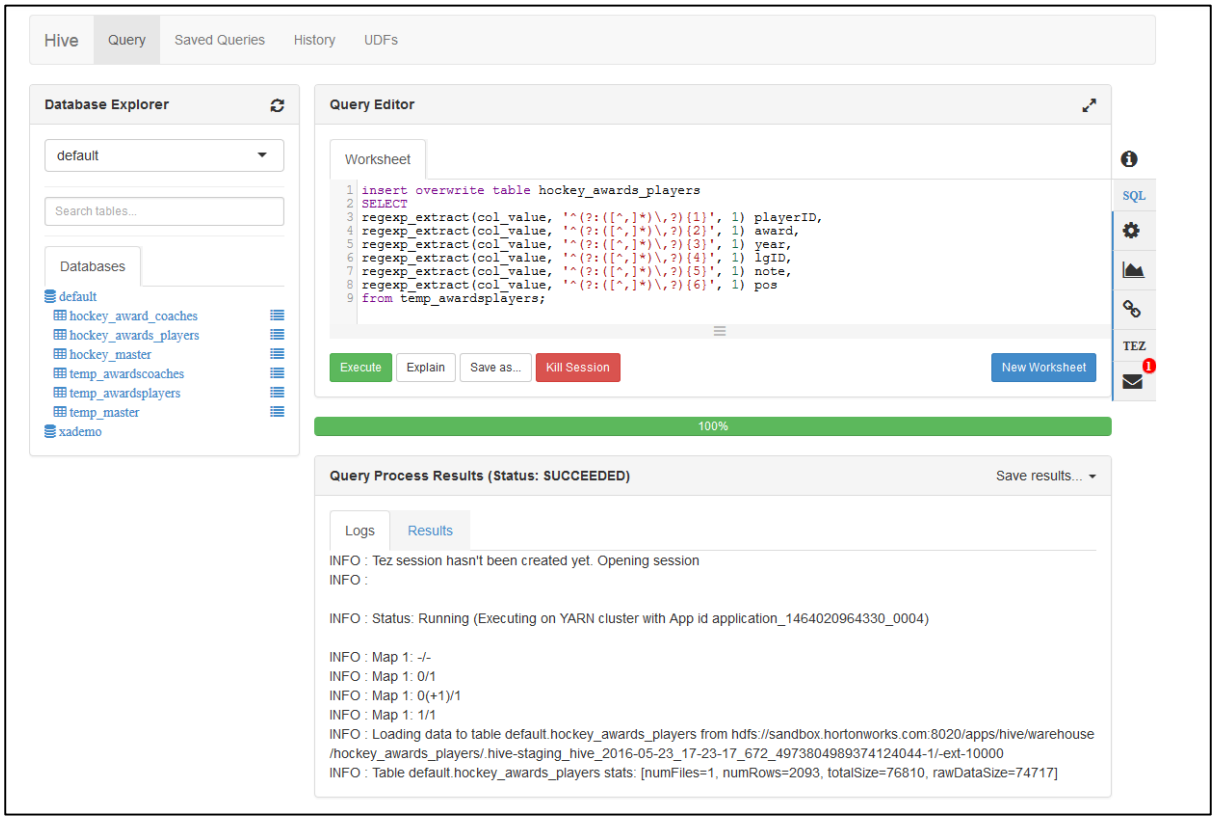
hockey_award_coaches.coachid	hockey_award_coaches.award	hockey_award_coaches.year	hockey_award
coachID	award		lgID
patrile01c	First Team All-Star	1930	NHL
irvindi01c	Second Team All-Star	1930	NHL
patrile01c	First Team All-Star	1931	NHL
irvindi01c	Second Team All-Star	1931	NHL
patrile01c	First Team All-Star	1932	NHL
irvindi01c	Second Team All-Star	1932	NHL
patrile01c	First Team All-Star	1933	NHL
irvindi01c	Second Team All-Star	1933	NHL
patrile01c	First Team All-Star	1934	NHL
irvindi01c	Second Team All-Star	1934	NHL

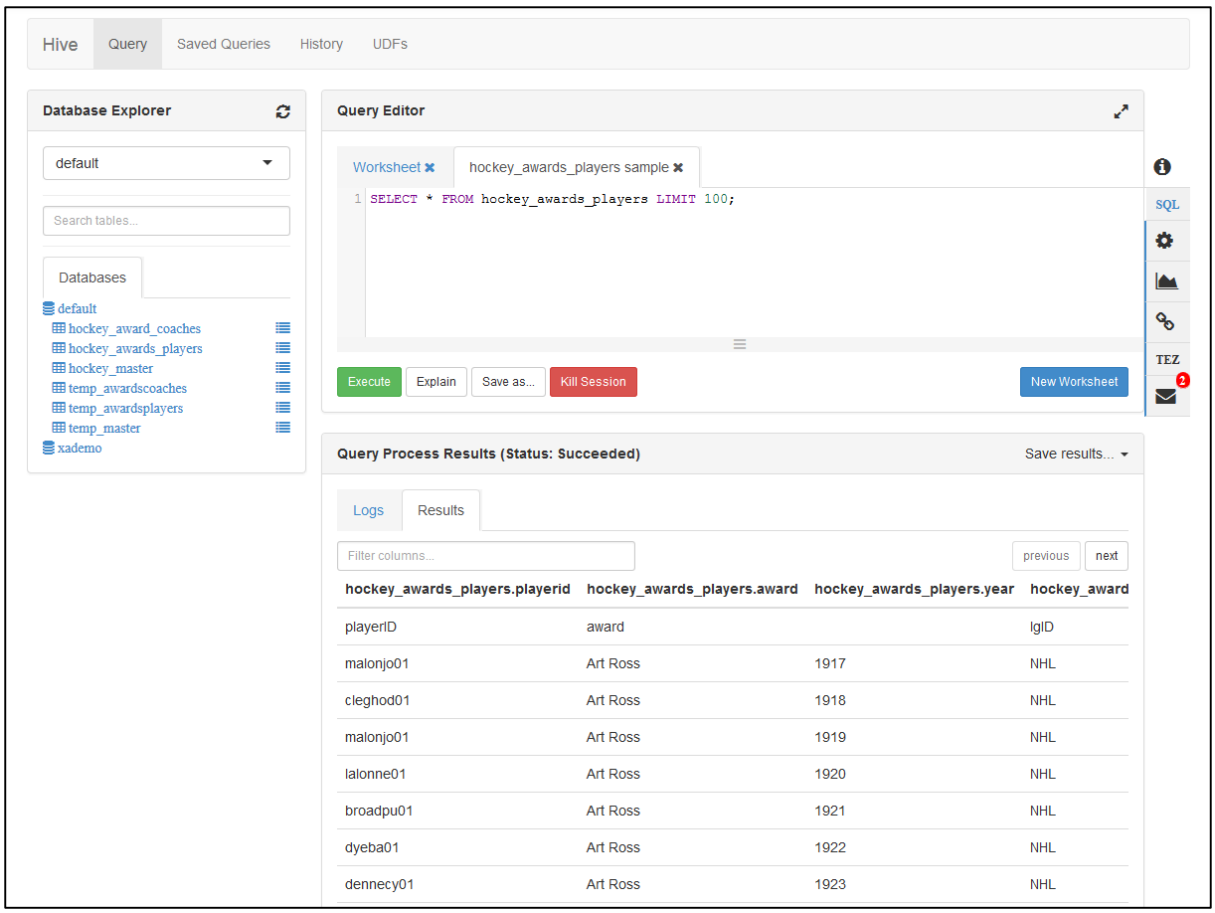
1.2.3 Create Award Player



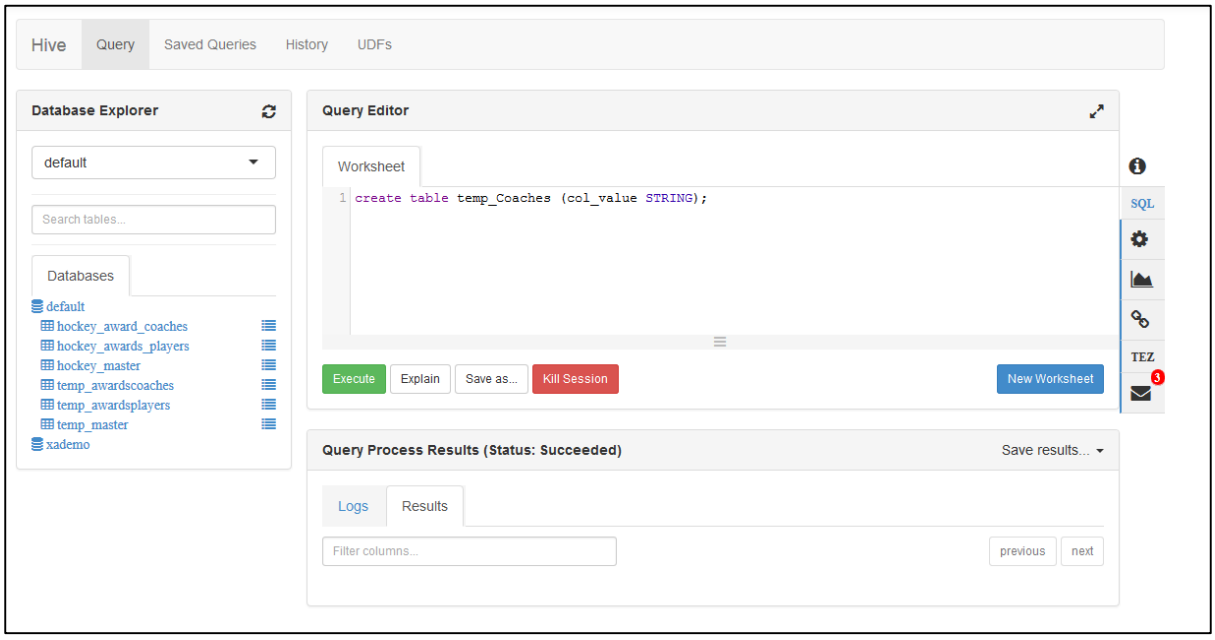


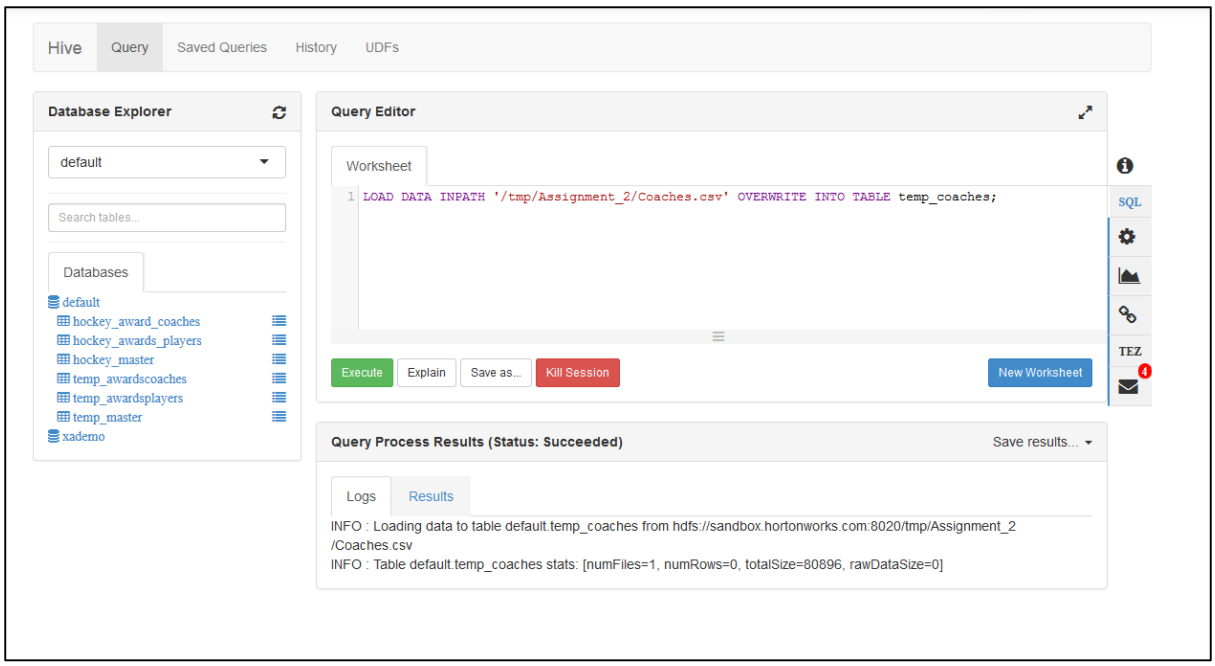

Hive
Query
Saved Queries
History
UDFs
Database Explorer
default
Search tables...
Databases
default
hockey_award_coaches
hockey_master
temp_awardscoaches
temp_master
xademo
Query Editor
Worksheet
create table hockey_awards_players (playerID STRING, award STRING, year INT, lgID STRING,
note STRING, pos STRING
);
SQL
TEZ
Execute
Explain
Save as...
Kill Session
New Worksheet
Query Process Results (Status: Succeeded)
Save results...
Logs
Results

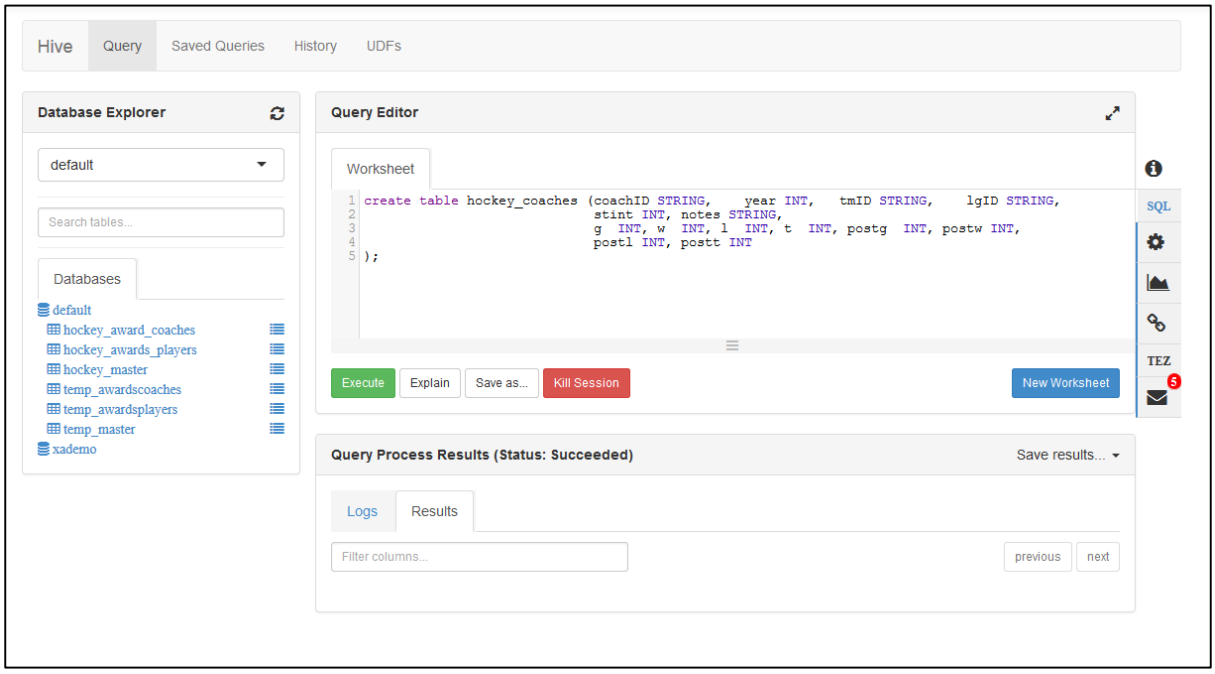

Hive
Query
Saved Queries
History
UDFs
Database Explorer
default
Search tables...
Databases
default
hockey_award_coaches
hockey_awards_players
hockey_master
temp_awardscoaches
temp_awardsplayers
temp_master
xademo
Query Editor
Worksheet
insert overwrite table hockey_awards_players
SELECT
regexp_extract(col_value, '^(?:([^,]*)\,?){1}', 1) playerID,
regexp_extract(col_value, '^(?:([^,]*)\,?){2}', 1) award,
regexp_extract(col_value, '^(?:([^,]*)\,?){3}', 1) year,
regexp_extract(col_value, '^(?:([^,]*)\,?){4}', 1) lgID,
regexp_extract(col_value, '^(?:([^,]*)\,?){5}', 1) note,
regexp_extract(col_value, '^(?:([^,]*)\,?){6}', 1) pos
from temp_awardsplayers;
SQL
TEZ
Execute
Explain
Save as...
Kill Session
New Worksheet
100%
Query Process Results (Status: SUCCEEDED)
Save results...
Logs
Results
INFO : Tez session hasn't been created yet. Opening session
INFO :
INFO : Status: Running (Executing on YARN cluster with App id application_1464020964330_0004)
INFO : Map 1: -/-
INFO : Map 1: 0/1
INFO : Map 1: 0(+1)/1
INFO : Map 1: 1/1
INFO : Loading data to table default.hockey_awards_players from hdfs://sandbox.hortonworks.com:8020/apps/hive/warehouse
/hockey_awards_players/.hive-staging_hive_2016-05-23_17-23-17_672_4973804989374124044-1/-ext-10000
INFO : Table default.hockey_awards_players stats: [numFiles=1, numRows=2093, totalSize=76810, rawDataSize=74717]



1.2.4 Create Coaches Table




Hive
Query
Saved Queries
History
UDFs
Database Explorer
default
Search tables...
Databases
default
hockey_award_coaches
hockey_awards_players
hockey_master
temp_awardscoaches
temp_awardsplayers
temp_master
xademo
Query Editor
Worksheet
LOAD DATA INPATH '/tmp/Assignment_2/Coaches.csv' OVERWRITE INTO TABLE temp_coaches;
SQL
TEZ
Execute
Explain
Save as...
Kill Session
New Worksheet
Query Process Results (Status: Succeeded)
Save results...
Logs
Results
INFO : Loading data to table default.temp_coaches from hdfs://sandbox.hortonworks.com:8020/tmp/Assignment_2/Coaches.csv
INFO : Table default.temp_coaches stats: [numFiles=1, numRows=0, totalSize=80896, rawDataSize=0]


Hive
Query
Saved Queries
History
UDFs
Database Explorer
default
Search tables...
Databases
default
hockey_award_coaches
hockey_awards_players
hockey_master
temp_awardscoaches
temp_awardsplayers
temp_master
xademo
Query Editor
Worksheet
create table hockey_coaches (coachID STRING, year INT, tmID STRING, lgID STRING,
stint INT, notes STRING,
g INT, w INT, l INT, t INT, postg INT, postw INT,
postl INT, postt INT
);
SQL
TEZ
Execute
Explain
Save as...
Kill Session
New Worksheet
Query Process Results (Status: Succeeded)
Save results...
Logs
Results
Filter columns...
previous
next

Hive | Query | Saved Queries | History | UDFs

Database Explorer

default

Search tables...

Databases

- default
  - hockey_award_coaches
  - hockey_awards_players
  - hockey_master
  - temp_awardscoaches
  - temp_awardsplayers
  - temp_master
- xademo

Query Editor

Worksheet

```
insert overwrite table hockey_coaches
SELECT
regexp_extract(col_value, '^(?:([^,]*)\,?){1}', 1) coachID,
regexp_extract(col_value, '^(?:([^,]*)\,?){2}', 1) year,
regexp_extract(col_value, '^(?:([^,]*)\,?){3}', 1) tmID,
regexp_extract(col_value, '^(?:([^,]*)\,?){4}', 1) lgID,
regexp_extract(col_value, '^(?:([^,]*)\,?){5}', 1) stint,
regexp_extract(col_value, '^(?:([^,]*)\,?){6}', 1) notes,
regexp_extract(col_value, '^(?:([^,]*)\,?){7}', 1) g,
regexp_extract(col_value, '^(?:([^,]*)\,?){8}', 1) w,
regexp_extract(col_value, '^(?:([^,]*)\,?){9}', 1) l,
regexp_extract(col_value, '^(?:([^,]*)\,?){10}', 1) t,
regexp_extract(col_value, '^(?:([^,]*)\,?){11}', 1) postg,
regexp_extract(col_value, '^(?:([^,]*)\,?){12}', 1) postw,
regexp_extract(col_value, '^(?:([^,]*)\,?){13}', 1) postl,
regexp_extract(col_value, '^(?:([^,]*)\,?){14}', 1) postt
from temp_coaches;
```

SQL | TEZ

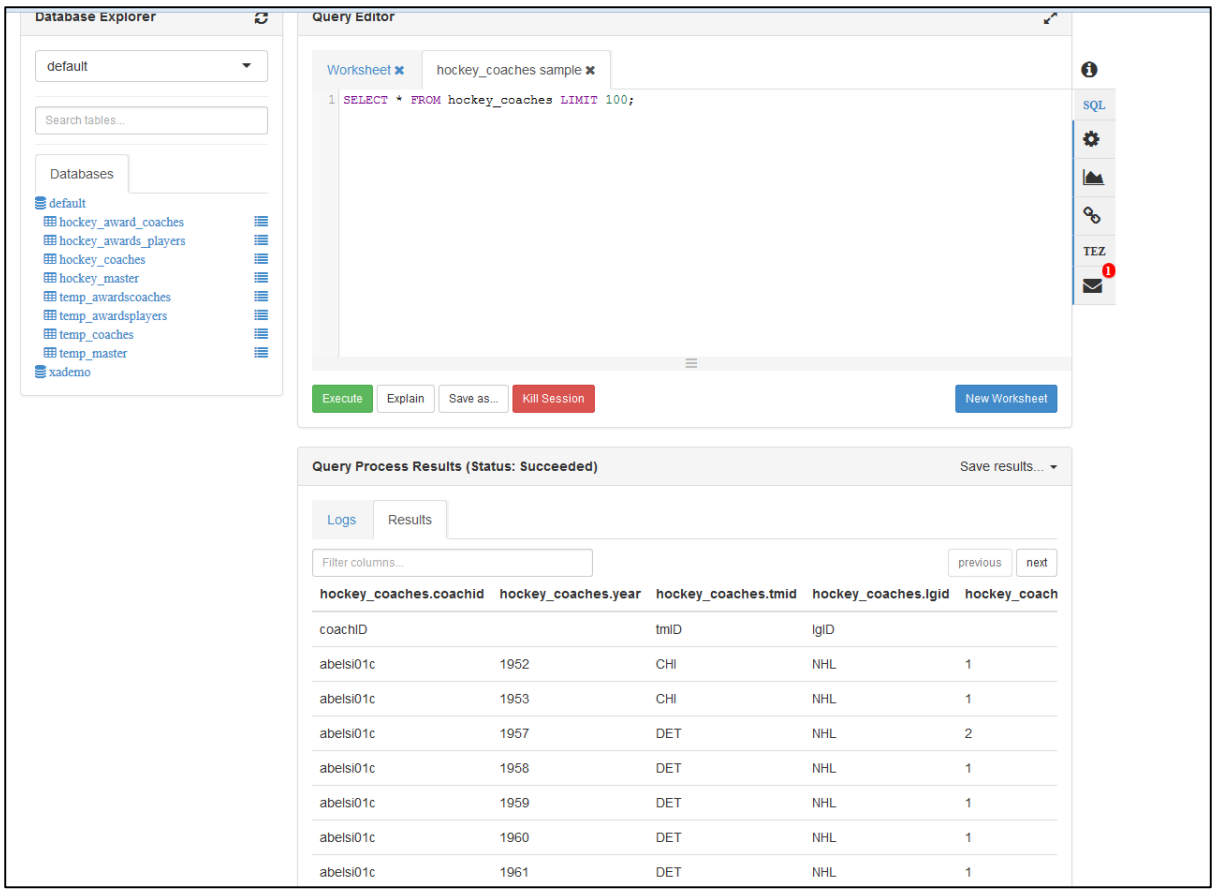
Execute | Explain | Save as... | Kill Session | New Worksheet

100%

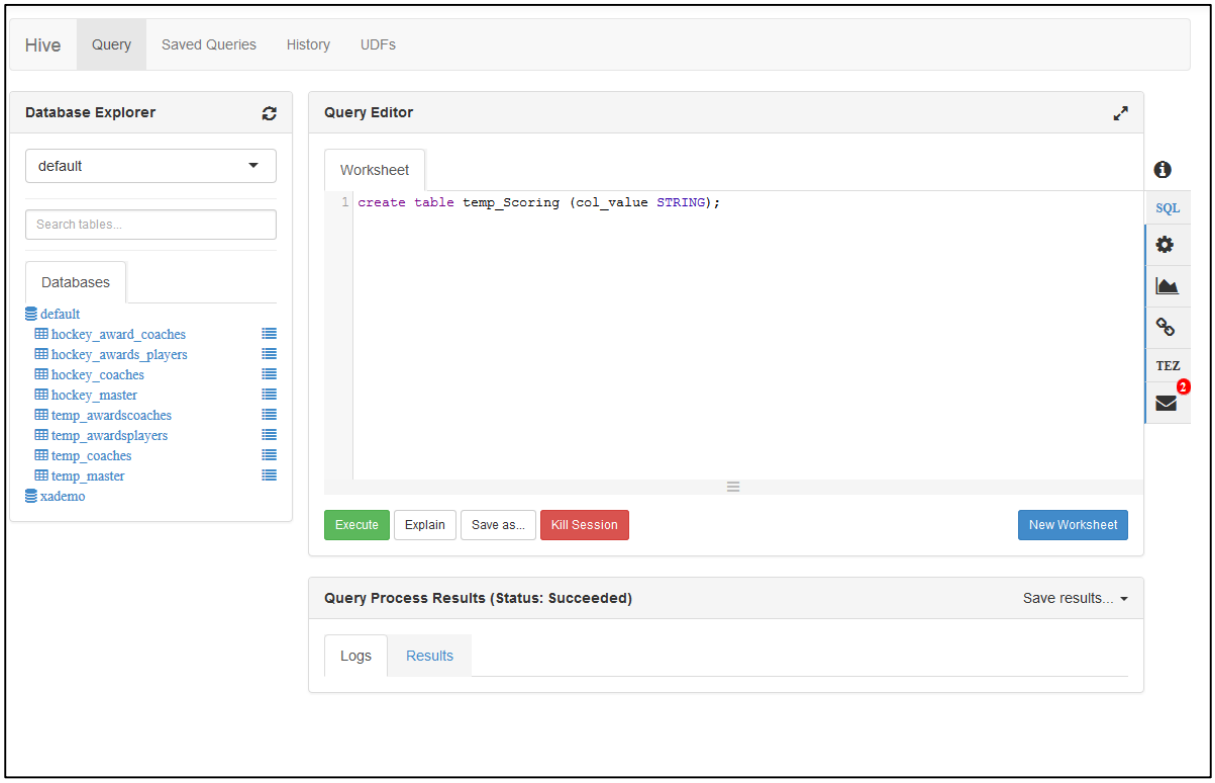
Query Process Results (Status: SUCCEEDED) Save results...

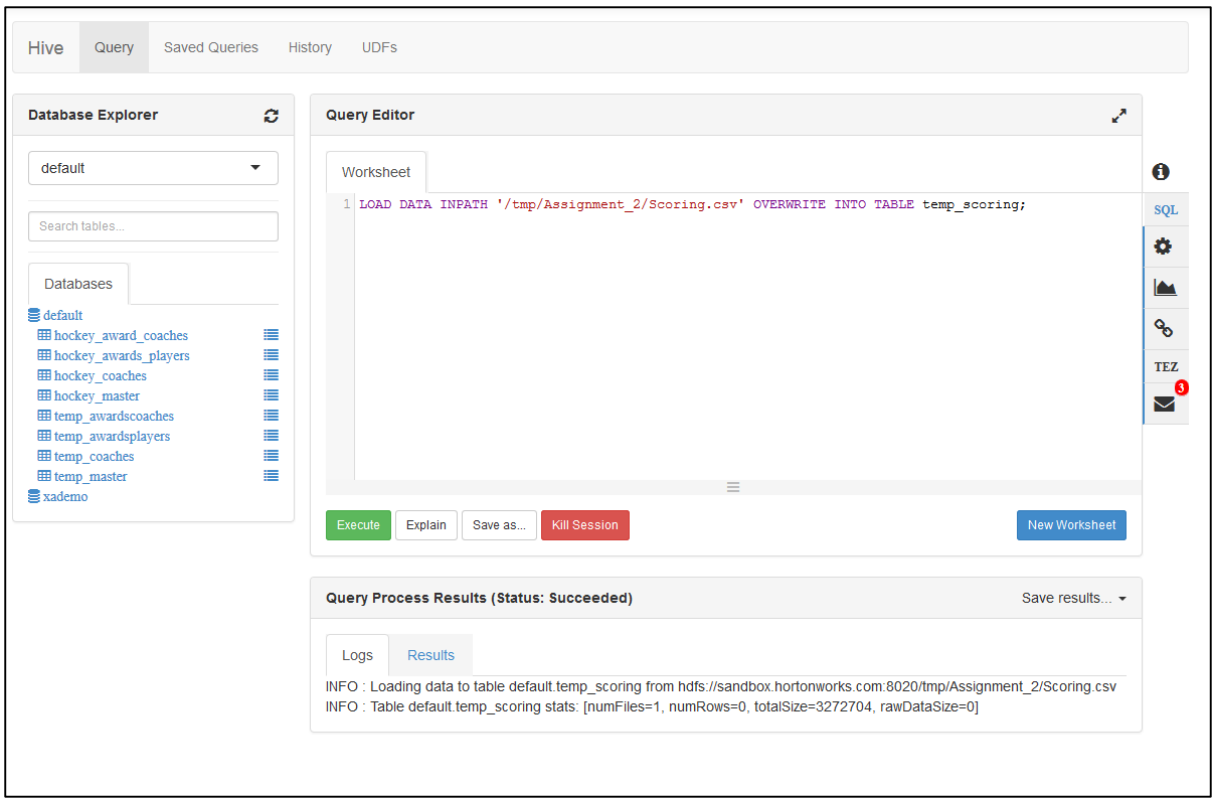
Logs | Results

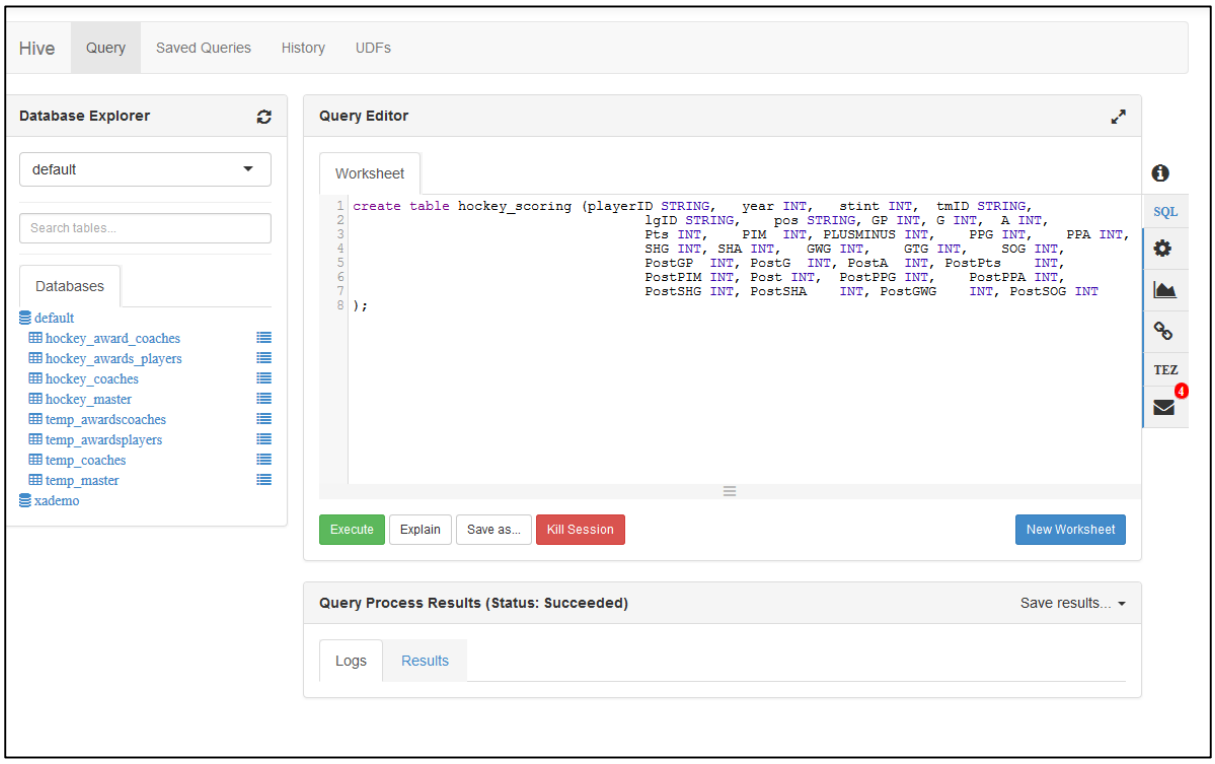
```
INFO : Session is already open
INFO :

INFO : Status: Running (Executing on YARN cluster with App id application_1464020964330_0004)

INFO : Map 1: 0/1
INFO : Map 1: 0(+1)/1
INFO : Map 1: 1/1
INFO : Loading data to table default.hockey_coaches from hdfs://sandbox.hortonworks.com:8020/apps/hive/warehouse
/hockey_coaches/.hive-staging_hive_2016-05-23_17-27-21_450_4568274584518999282-1/-ext-10000
INFO : Table default.hockey_coaches stats: [numFiles=1, numRows=1824, totalSize=88058, rawDataSize=86234]
```



1.2.5 Create Scoring Table




Hive
Query
Saved Queries
History
UDFs
Database Explorer
default
Search tables...
Databases
default
hockey_award_coaches
hockey_awards_players
hockey_coaches
hockey_master
temp_awardscoaches
temp_awardsplayers
temp_coaches
temp_master
xademo
Query Editor
Worksheet
LOAD DATA INPATH '/tmp/Assignment_2/Scoring.csv' OVERWRITE INTO TABLE temp_scoring;
SQL
TEZ
Execute
Explain
Save as...
Kill Session
New Worksheet
Query Process Results (Status: Succeeded)
Save results...
Logs
Results
INFO : Loading data to table default.temp_scoring from hdfs://sandbox.hortonworks.com:8020/tmp/Assignment_2/Scoring.csv
INFO : Table default.temp_scoring stats: [numFiles=1, numRows=0, totalSize=3272704, rawDataSize=0]


Hive
Query
Saved Queries
History
UDFs
Database Explorer
default
Search tables...
Databases
default
hockey_award_coaches
hockey_awards_players
hockey_coaches
hockey_master
temp_awardscoaches
temp_awardsplayers
temp_coaches
temp_master
xademo
Query Editor
Worksheet
create table hockey_scoring (playerID STRING, year INT, stint INT, tmID STRING,
lgID STRING, pos STRING, GP INT, G INT, A INT,
Pts INT, PIM INT, PLUSMINUS INT, PPG INT, PPA INT,
SHG INT, SHA INT, GWG INT, GTG INT, SOG INT,
PostGP INT, PostG INT, PostA INT, PostPts INT,
PostPIM INT, Post INT, PostPPG INT, PostPPA INT,
PostSHG INT, PostSHA INT, PostGWG INT, PostSOG INT
);
SQL
TEZ
Execute
Explain
Save as...
Kill Session
New Worksheet
Query Process Results (Status: Succeeded)
Save results...
Logs
Results

Hive | Query | Saved Queries | History | UDFs

Database Explorer

default

Search tables...

Databases

- default
  - hockey_award_coaches
  - hockey_awards_players
  - hockey_coaches
  - hockey_master
  - temp_awardscoaches
  - temp_awardsplayers
  - temp_coaches
  - temp_master
- xademo

Query Editor

Worksheet

```
insert overwrite table hockey_scoring
SELECT
regexp_extract(col_value, '^(?:([^,]*)\,?){1}', 1) playerID,
regexp_extract(col_value, '^(?:([^,]*)\,?){2}', 1) year,
regexp_extract(col_value, '^(?:([^,]*)\,?){3}', 1) stint,
regexp_extract(col_value, '^(?:([^,]*)\,?){4}', 1) tmID,
regexp_extract(col_value, '^(?:([^,]*)\,?){5}', 1) lgID,
regexp_extract(col_value, '^(?:([^,]*)\,?){6}', 1) pos,
regexp_extract(col_value, '^(?:([^,]*)\,?){7}', 1) GP,
regexp_extract(col_value, '^(?:([^,]*)\,?){8}', 1) G,
regexp_extract(col_value, '^(?:([^,]*)\,?){9}', 1) A,
regexp_extract(col_value, '^(?:([^,]*)\,?){10}', 1) Pts,
regexp_extract(col_value, '^(?:([^,]*)\,?){11}', 1) PIM,
regexp_extract(col_value, '^(?:([^,]*)\,?){12}', 1) PLUSMINUS,
regexp_extract(col_value, '^(?:([^,]*)\,?){13}', 1) PPG,
regexp_extract(col_value, '^(?:([^,]*)\,?){14}', 1) PPA,
regexp_extract(col_value, '^(?:([^,]*)\,?){15}', 1) SHG,
regexp_extract(col_value, '^(?:([^,]*)\,?){16}', 1) SHA,
regexp_extract(col_value, '^(?:([^,]*)\,?){17}', 1) GWG,
regexp_extract(col_value, '^(?:([^,]*)\,?){18}', 1) GWG,
regexp_extract(col_value, '^(?:([^,]*)\,?){19}', 1) SOG,
regexp_extract(col_value, '^(?:([^,]*)\,?){20}', 1) PostGP,
regexp_extract(col_value, '^(?:([^,]*)\,?){21}', 1) PostG,
regexp_extract(col_value, '^(?:([^,]*)\,?){22}', 1) PostA,
regexp_extract(col_value, '^(?:([^,]*)\,?){23}', 1) PostPts,
regexp_extract(col_value, '^(?:([^,]*)\,?){24}', 1) PostPIM,
regexp_extract(col_value, '^(?:([^,]*)\,?){25}', 1) Post,
regexp_extract(col_value, '^(?:([^,]*)\,?){26}', 1) PostPPG,
regexp_extract(col_value, '^(?:([^,]*)\,?){27}', 1) PostPPA,
regexp_extract(col_value, '^(?:([^,]*)\,?){28}', 1) PostSHG,
regexp_extract(col_value, '^(?:([^,]*)\,?){29}', 1) PostSHA,
regexp_extract(col_value, '^(?:([^,]*)\,?){30}', 1) PostGWG,
regexp_extract(col_value, '^(?:([^,]*)\,?){31}', 1) PostSOG
from temp_scoring;
```

SQL | TEZ

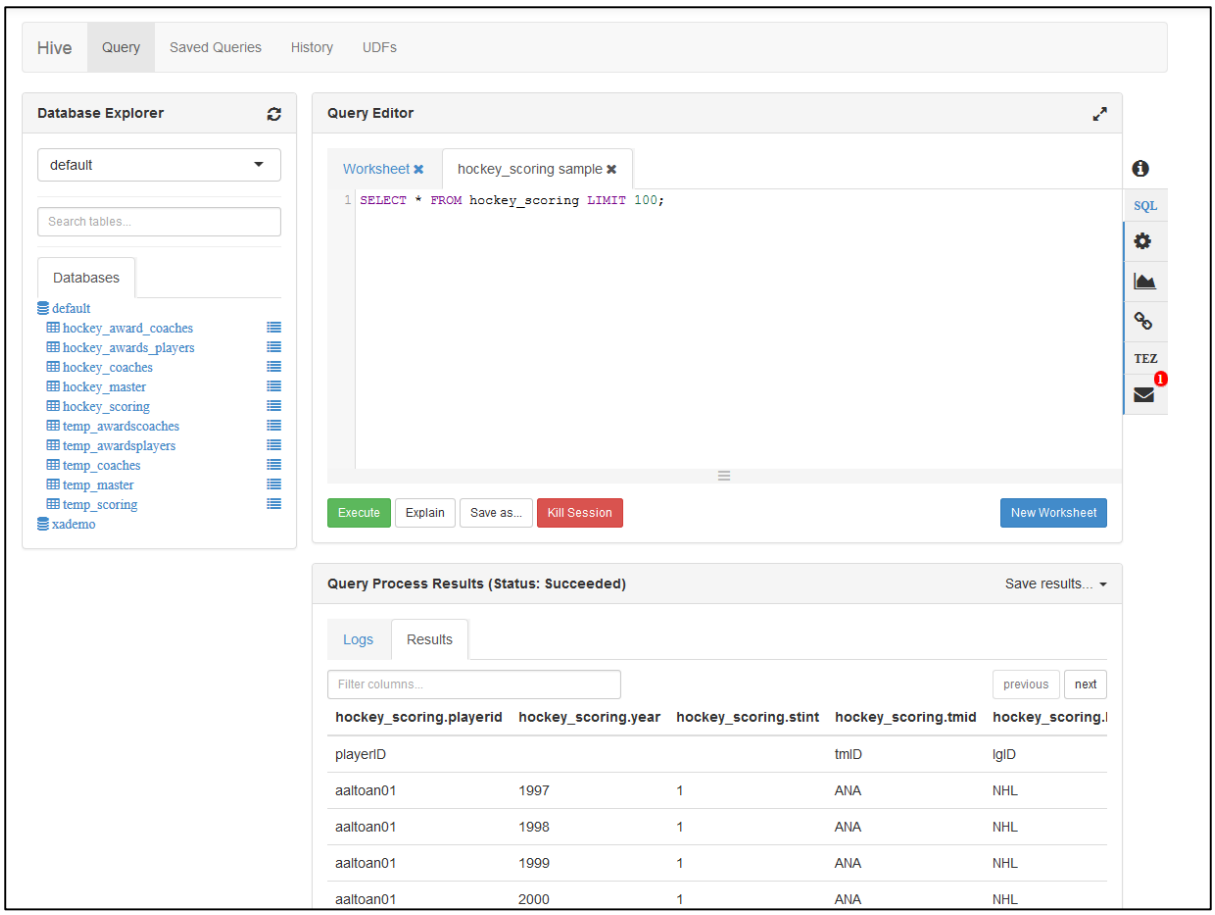
Execute | Explain | Save as... | Kill Session | New Worksheet

100%

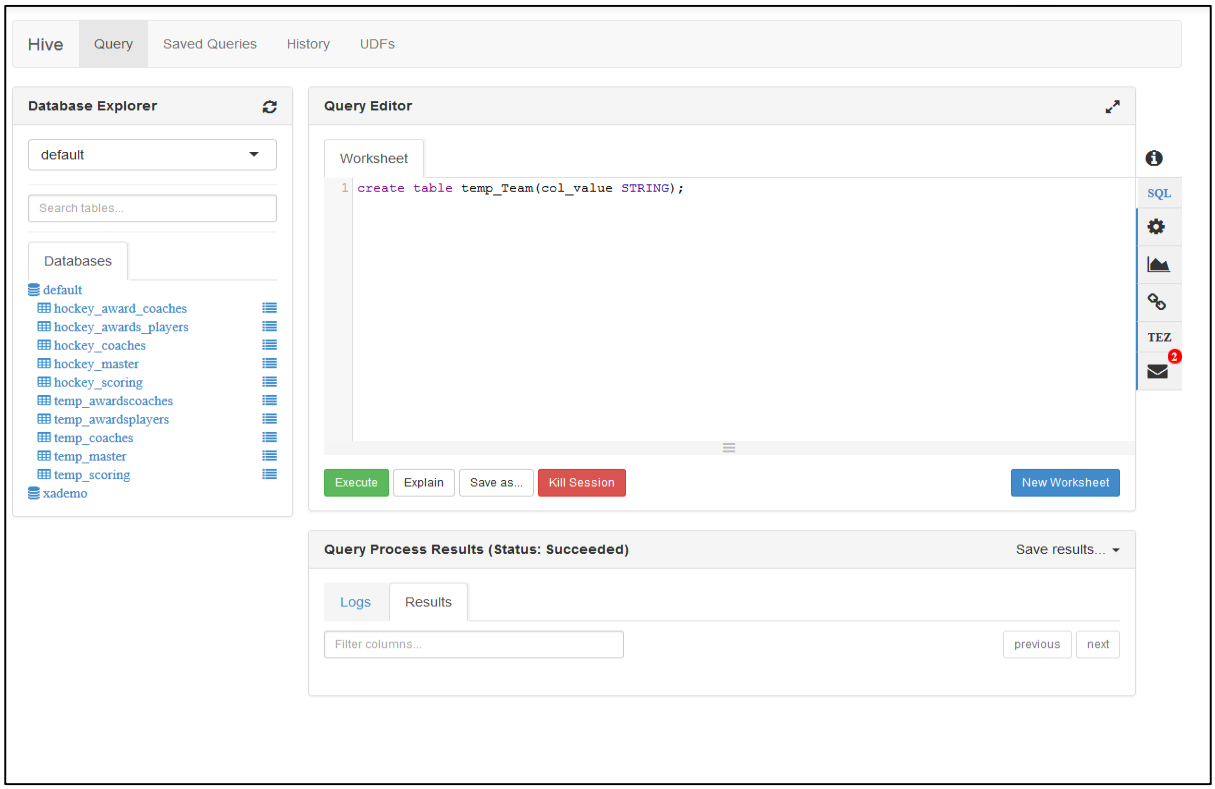
Query Process Results (Status: SUCCEEDED) Save results...

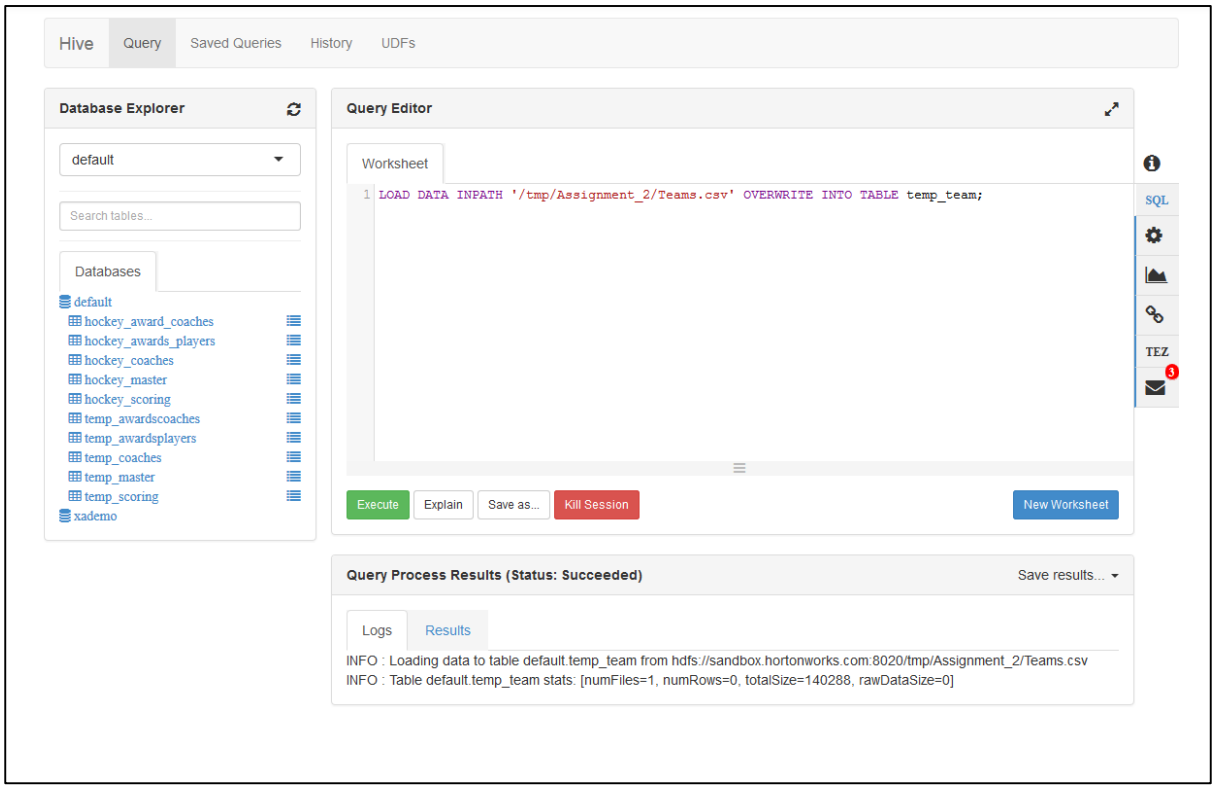
Logs | Results

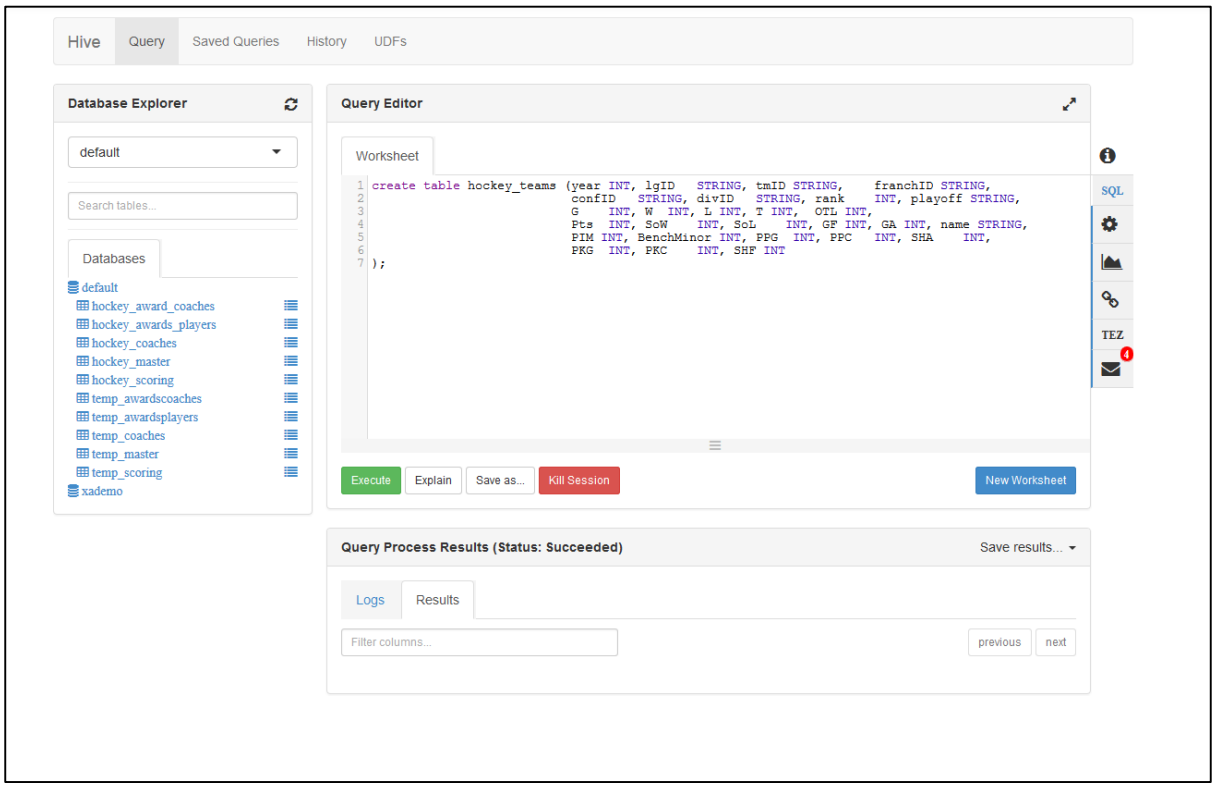
```
INFO : Tez session hasn't been created yet. Opening session
INFO :

INFO : Status: Running (Executing on YARN cluster with App id application_1464020964330_0005)

INFO : Map 1: -/-
INFO : Map 1: 0/1
INFO : Map 1: 0(+1)/1
INFO : Map 1: 0(+1)/1
INFO : Map 1: 1/1
INFO : Loading data to table default.hockey_scoring from hdfs://sandbox.hortonworks.com:8020/apps/hive/warehouse
/hockey_scoring/.hive-staging_hive_2016-05-23_17-31-21_447_7225111650302003273-1/-ext-10000
INFO : Table default.hockey_scoring stats: [numFiles=1, numRows=45975, totalSize=4237449, rawDataSize=4191474]
```



1.2.6 Create Team Table




Hive
Query
Saved Queries
History
UDFs
Database Explorer
default
Search tables...
Databases
default
hockey_award_coaches
hockey_awards_players
hockey_coaches
hockey_master
hockey_scoring
temp_awardscoaches
temp_awardsplayers
temp_coaches
temp_master
temp_scoring
xademo
Query Editor
Worksheet
LOAD DATA INPATH '/tmp/Assignment_2/Teams.csv' OVERWRITE INTO TABLE temp_team;
SQL
TEZ
Execute
Explain
Save as...
Kill Session
New Worksheet
Query Process Results (Status: Succeeded)
Save results...
Logs
Results
INFO : Loading data to table default.temp_team from hdfs://sandbox.hortonworks.com:8020/tmp/Assignment_2/Teams.csv
INFO : Table default.temp_team stats: [numFiles=1, numRows=0, totalSize=140288, rawDataSize=0]


Hive
Query
Saved Queries
History
UDFs
Database Explorer
default
Search tables...
Databases
default
hockey_award_coaches
hockey_awards_players
hockey_coaches
hockey_master
hockey_scoring
temp_awardscoaches
temp_awardsplayers
temp_coaches
temp_master
temp_scoring
xademo
Query Editor
Worksheet
create table hockey_teams (year INT, lgID STRING, tmID STRING, franchID STRING,
confID STRING, divID STRING, rank INT, playoff STRING,
G INT, W INT, L INT, T INT, OTL INT,
Pts INT, SoW INT, SoL INT, GF INT, GA INT, name STRING,
PIM INT, BenchMinor INT, PPG INT, PPC INT, SHA INT,
PKG INT, PKC INT, SHF INT
);
SQL
TEZ
Execute
Explain
Save as...
Kill Session
New Worksheet
Query Process Results (Status: Succeeded)
Save results...
Logs
Results
Filter columns...
previous
next

Hive | Query | Saved Queries | History | UDFs

Database Explorer

default

Search tables...

Databases

- default
  - hockey_award_coaches
  - hockey_awards_players
  - hockey_coaches
  - hockey_master
  - hockey_scoring
  - temp_awardscoaches
  - temp_awardsplayers
  - temp_coaches
  - temp_master
  - temp_scoring
- xademo

Query Editor

Worksheet

```
insert overwrite table hockey_teams
SELECT
regexp_extract(col_value, '^(?:([^,]*)\,?){1}', 1) year,
regexp_extract(col_value, '^(?:([^,]*)\,?){2}', 1) lgID,
regexp_extract(col_value, '^(?:([^,]*)\,?){3}', 1) tmID,
regexp_extract(col_value, '^(?:([^,]*)\,?){4}', 1) franchID,
regexp_extract(col_value, '^(?:([^,]*)\,?){5}', 1) confID,
regexp_extract(col_value, '^(?:([^,]*)\,?){6}', 1) divID,
regexp_extract(col_value, '^(?:([^,]*)\,?){7}', 1) rank,
regexp_extract(col_value, '^(?:([^,]*)\,?){8}', 1) playoff,
regexp_extract(col_value, '^(?:([^,]*)\,?){9}', 1) G,
regexp_extract(col_value, '^(?:([^,]*)\,?){10}', 1) W,
regexp_extract(col_value, '^(?:([^,]*)\,?){11}', 1) L,
regexp_extract(col_value, '^(?:([^,]*)\,?){12}', 1) T,
regexp_extract(col_value, '^(?:([^,]*)\,?){13}', 1) OLT,
regexp_extract(col_value, '^(?:([^,]*)\,?){14}', 1) Pts,
regexp_extract(col_value, '^(?:([^,]*)\,?){15}', 1) SoW,
regexp_extract(col_value, '^(?:([^,]*)\,?){16}', 1) SoL,
regexp_extract(col_value, '^(?:([^,]*)\,?){17}', 1) GF,
regexp_extract(col_value, '^(?:([^,]*)\,?){18}', 1) GA,
regexp_extract(col_value, '^(?:([^,]*)\,?){19}', 1) name,
regexp_extract(col_value, '^(?:([^,]*)\,?){20}', 1) PIM,
regexp_extract(col_value, '^(?:([^,]*)\,?){21}', 1) BrenchMin,
regexp_extract(col_value, '^(?:([^,]*)\,?){22}', 1) PPG,
regexp_extract(col_value, '^(?:([^,]*)\,?){23}', 1) PPC,
regexp_extract(col_value, '^(?:([^,]*)\,?){24}', 1) SHA,
regexp_extract(col_value, '^(?:([^,]*)\,?){25}', 1) PKG,
regexp_extract(col_value, '^(?:([^,]*)\,?){26}', 1) PKC,
regexp_extract(col_value, '^(?:([^,]*)\,?){27}', 1) SHF
from temp_team;
```

Stop execution | Explain | Save as... | Kill Session | New Worksheet

100%

Query Process Results (Status: RUNNING)

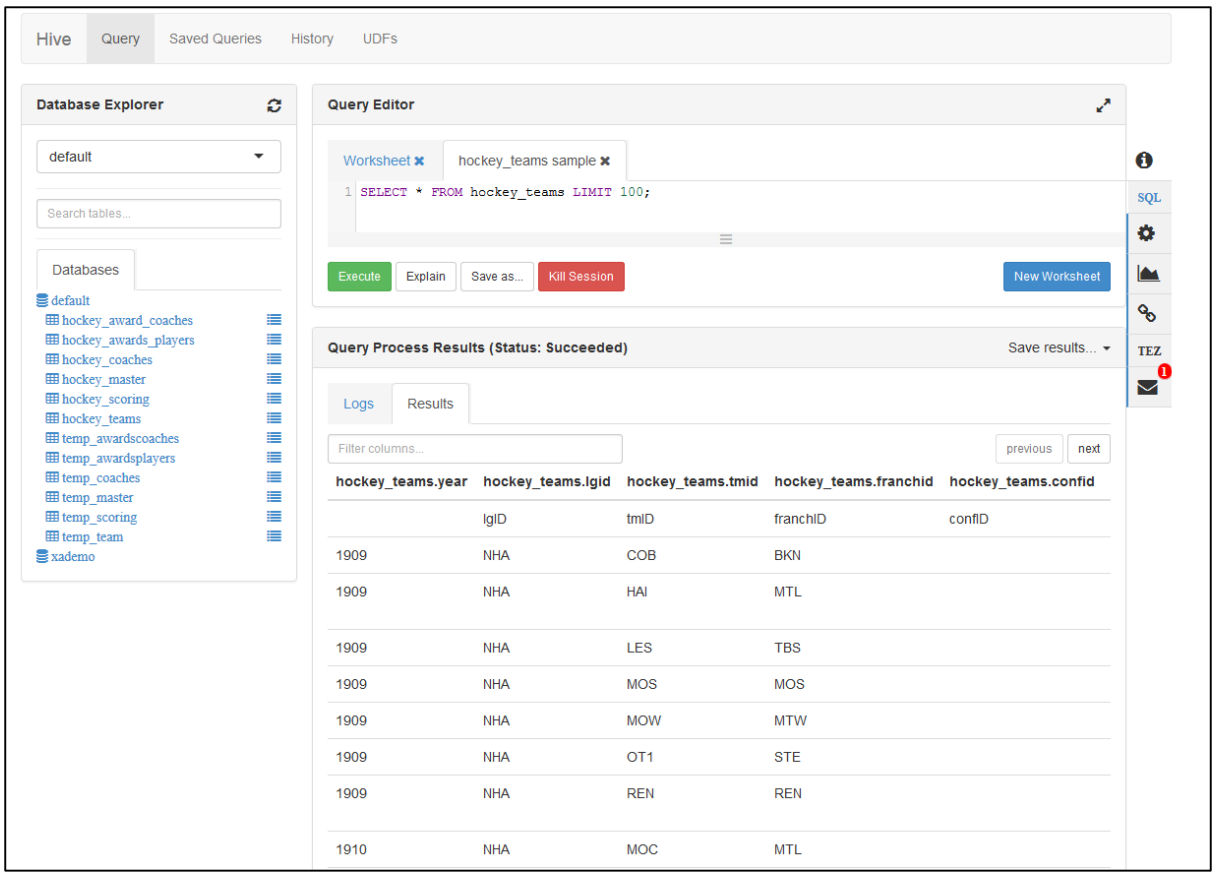
Logs | Results

INFO : Tez session hasn't been created yet. Opening session

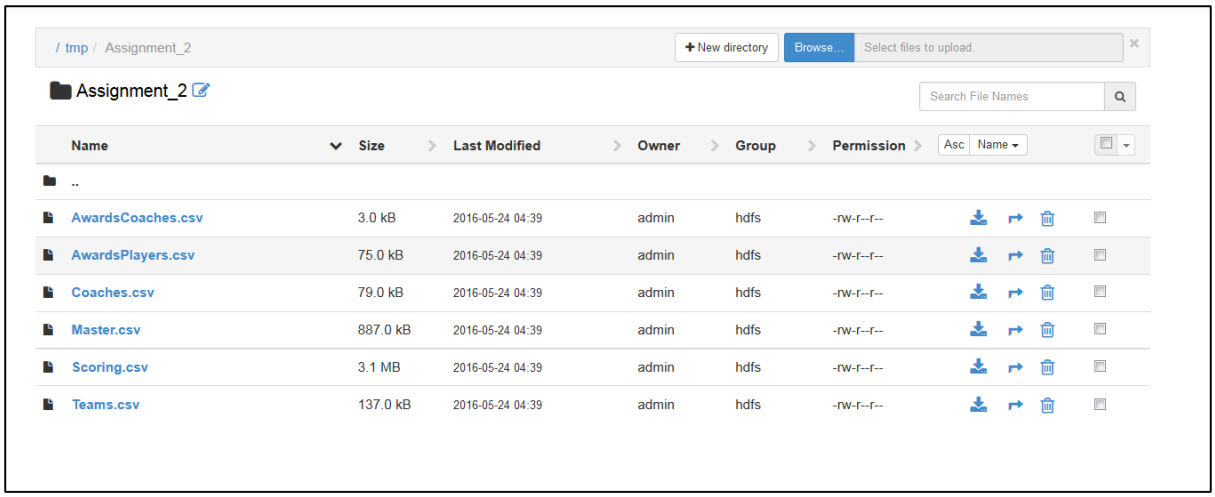
Query Process Results (Status: SUCCEEDED) Save results...

Logs | Results

```
INFO : Tez session hasn't been created yet. Opening session
INFO :

INFO : Status: Running (Executing on YARN cluster with App id application_1464020964330_0006)

INFO : Map 1: -/-
INFO : Map 1: 0/1
INFO : Map 1: 0(+1)/1
INFO : Map 1: 0/1
INFO : Map 1: 1/1
INFO : Loading data to table default.hockey_teams from hdfs://sandbox.hortonworks.com:8020/apps/hive/warehouse
/hockey_teams/.hive-staging_hive_2016-05-23_17-35-11_267_7083463340662463749-1/-ext-10000
INFO : Table default.hockey_teams stats: [numFiles=1, numRows=1529, totalSize=154564, rawDataSize=153035]
```



1.3 CSV Files Uploaded to HDFS Files

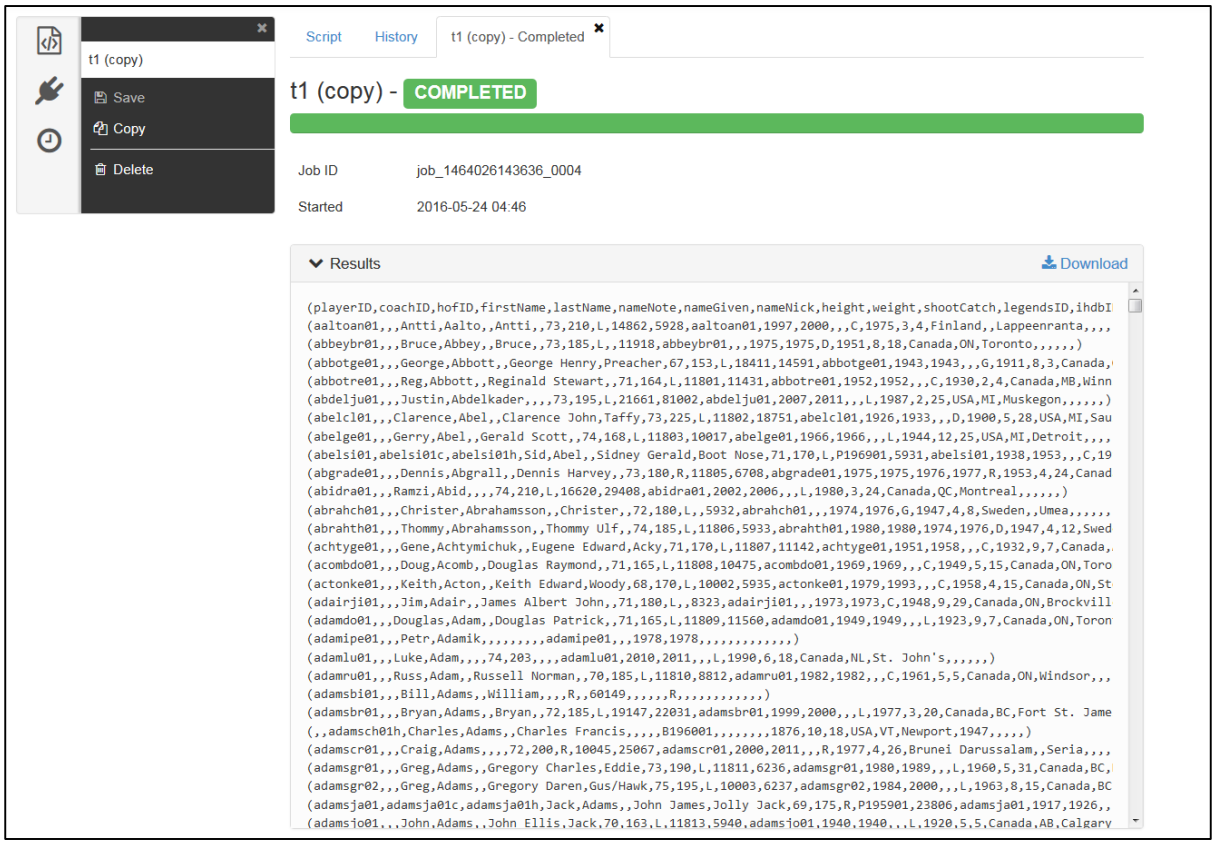


1.4 Pig Tables

1.4.1 Master table

Masters = LOAD '/tmp/Assignment_2/Master.csv' using PigStorage(',');

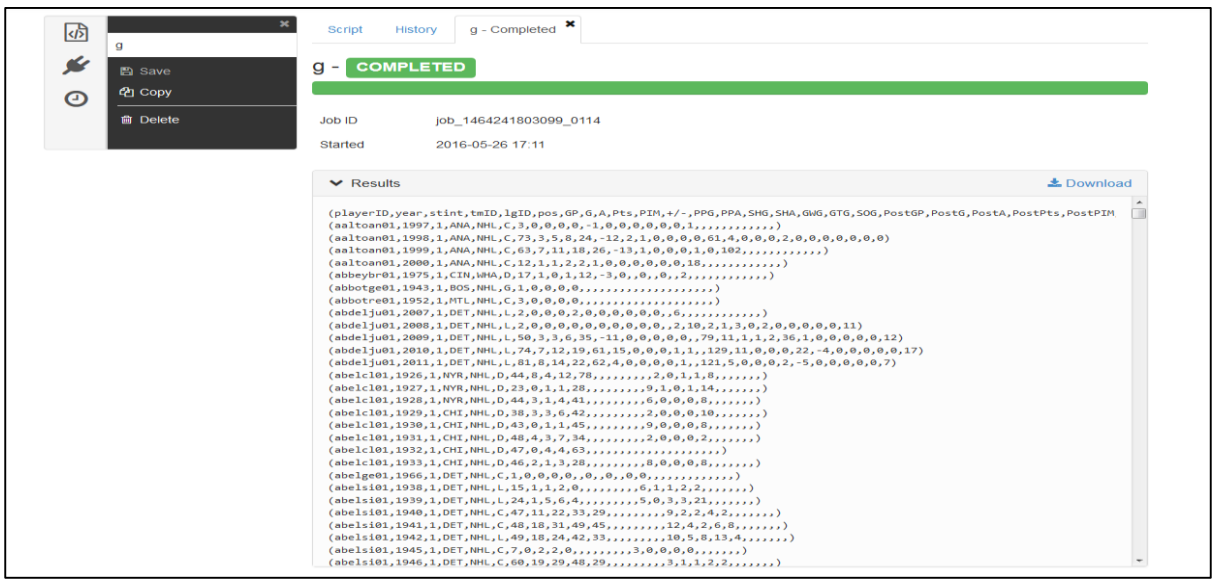
Dump Master;



1.4.2 Scoring Table

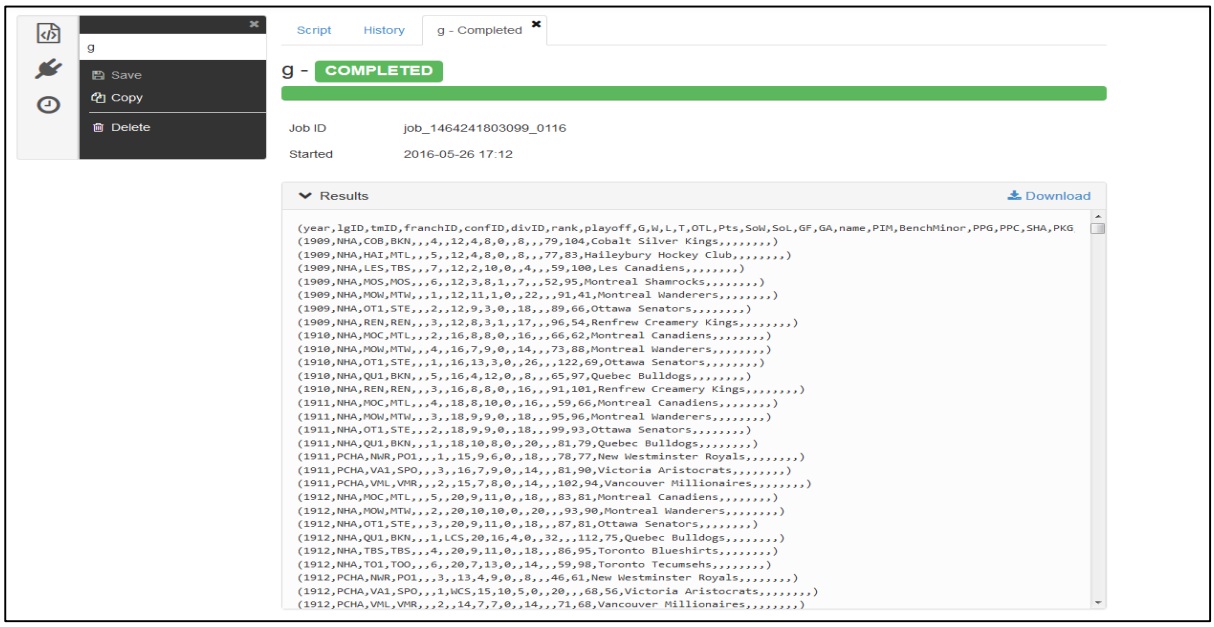
Scoring = LOAD '/tmp/Assignment_2/Scoring.csv' using PigStorage(',');

Dump Scoring;

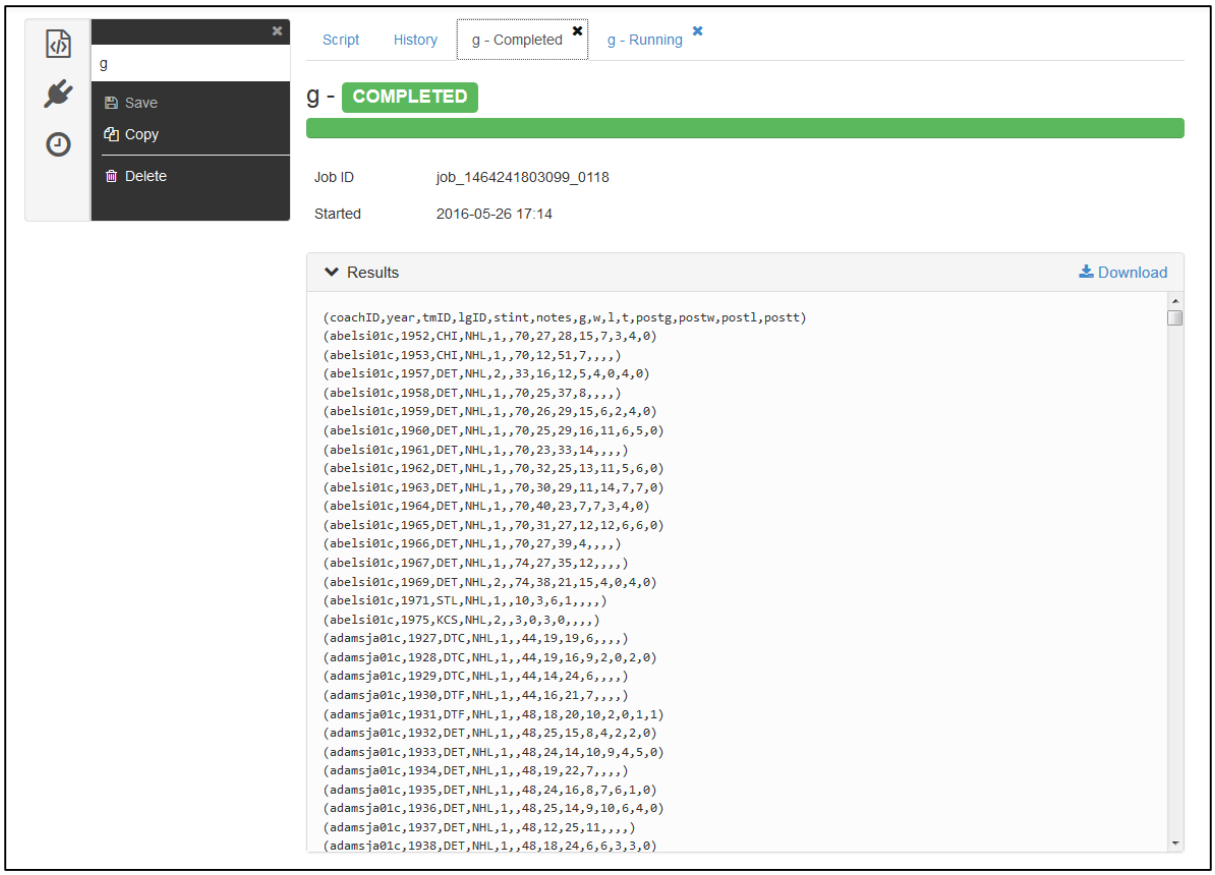


1.4.3 Team Table

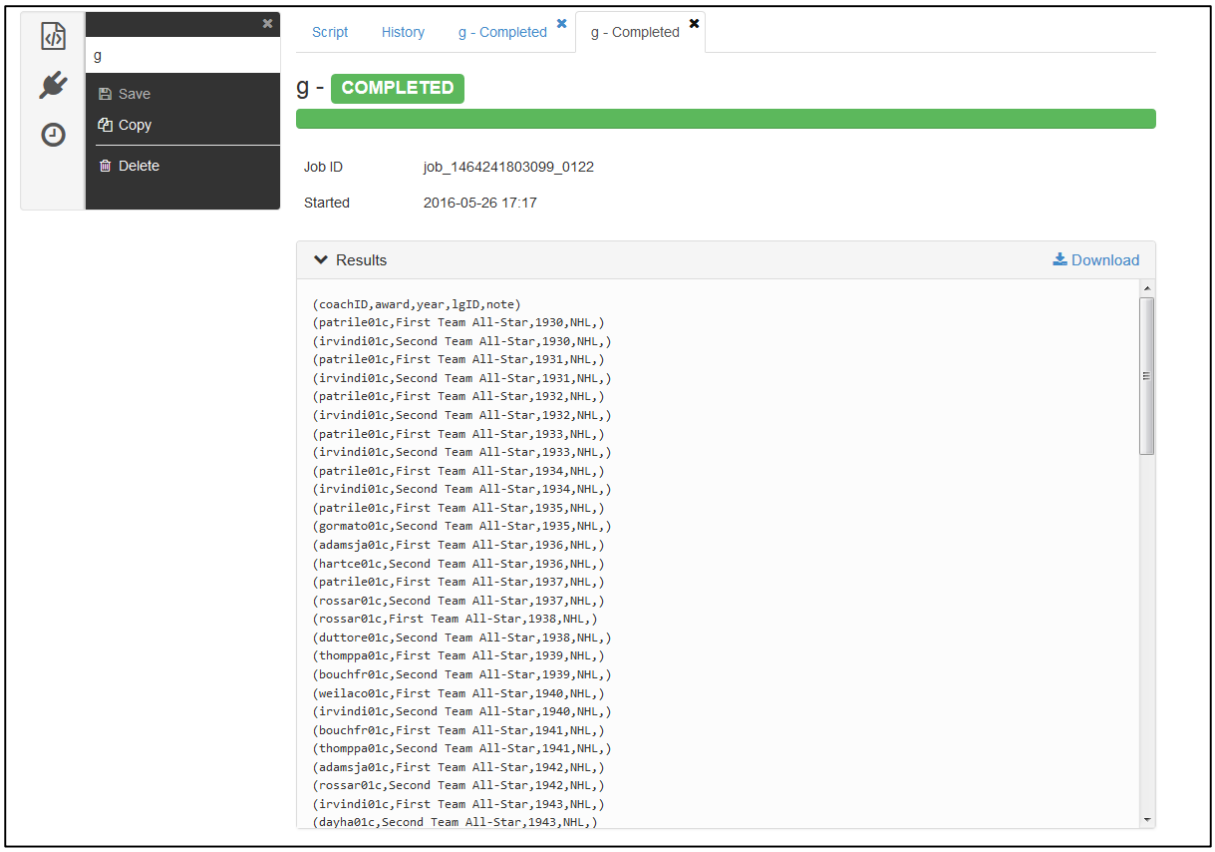
Team = LOAD '/tmp/Assignment_2/Teams.csv' using PigStorage(',');
Dump Team;



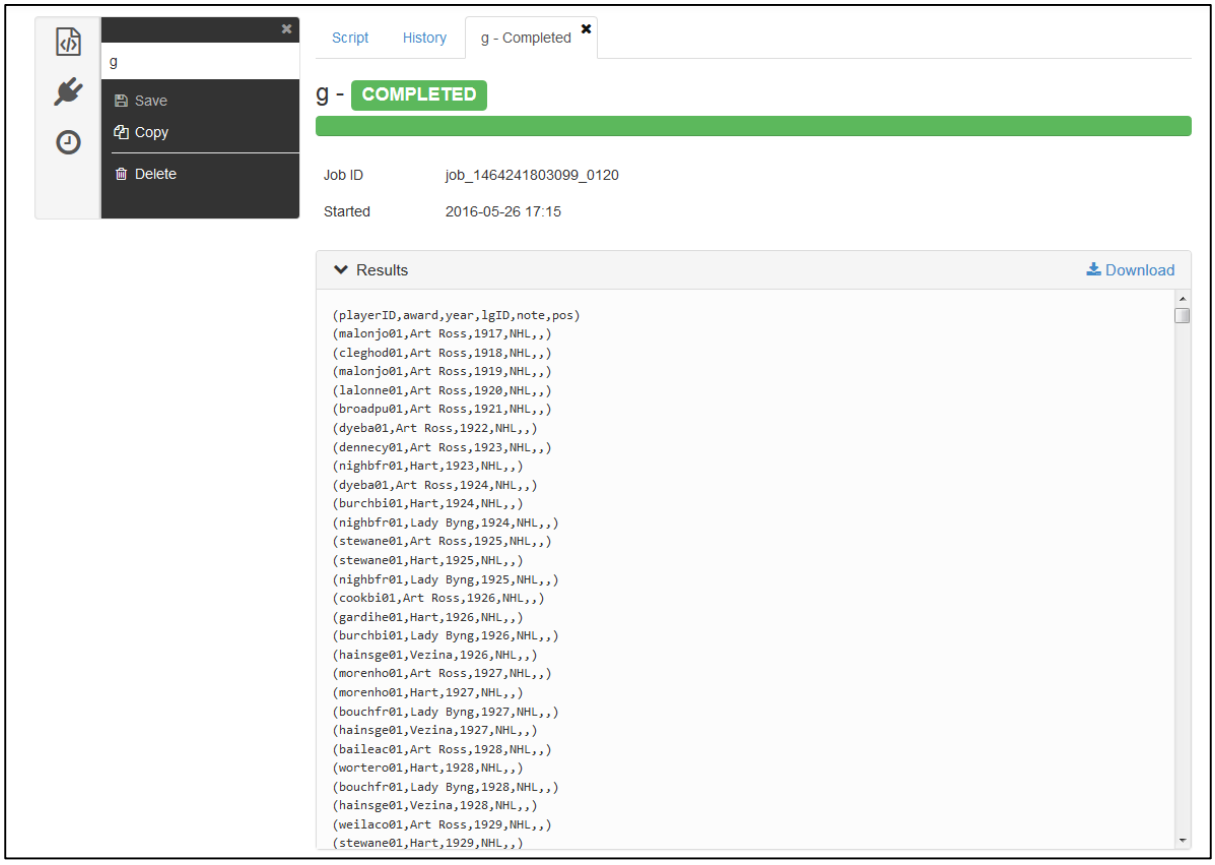
1.4.4 Coach Table



1.4.5 AwardCoach Table



1.4.6 AwardPlayer Table



2 Hive and Pig Queries

2.1 Task 2

2.1.1 Hive Query 2A

```
SELECT s.year AS YEAR,
    m.firstname AS First_Name,
    m.lastname AS Last_Name,
    CONCAT(m.birthday,'/',m.birthmon,'/',m.BirthYear) AS Birth_Date,
    m.birthcountry AS Birth_Country,
    t.name AS Team_Name,
    s.Lgid AS League_ID,
    s.pos AS POSITION,
    s.gwg AS Game_Winning_Goals
FROM
 (SELECT playerid,
      gwg,
      YEAR,
      tmid,
      lgid,
      pos
  FROM hockey_scoring
  WHERE gwg IN
    (SELECT max(gwg)
     FROM hockey_scoring)) s
JOIN hockey_master m ON (s.playerid = m.playerid)
JOIN hockey_teams t ON (t.tmid = s.tmid
                AND t.YEAR = s.YEAR);
```

2.1.1.1 Output

100%

Query Process Results (Status: SUCCEEDED) Save results...

Logs Results

Filter columns... previous next

year	first_name	last_name	birth_date	birth_country	team_name	league_id	position	game_winning_
1970	Phil	Esposito	20/2/1942	Canada	Boston Bruins	NHL	C	16
1971	Phil	Esposito	20/2/1942	Canada	Boston Bruins	NHL	C	16
1983	Michel	Goulet	21/4/1960	Canada	Quebec Nordiques	NHL	L	16

2.1.1.2 Log

100%

Query Process Results (Status: SUCCEEDED) Save results...

Logs Results

```
INFO : Session is already open
INFO :

INFO : Status: Running (Executing on YARN cluster with App id application_1464215212735_0132)

INFO : Map 1: -/- Map 2: 0/1 Map 4: -/- Map 5: 0/1 Reducer 3: 0/1
INFO : Map 1: 0/1 Map 2: 0/1 Map 4: 0/1 Map 5: 0/1 Reducer 3: 0/1
INFO : Map 1: 0(+1)/1 Map 2: 0(+1)/1 Map 4: 0(+1)/1 Map 5: 0/1 Reducer 3: 0/1
INFO : Map 1: 0(+1)/1 Map 2: 0(+1)/1 Map 4: 0(+1)/1 Map 5: 0(+1)/1 Reducer 3: 0/1
```

2.1.1.3 DAG Details

DAG Details

Download data

Application Id	application_1464215212735_0132
Entity Id	dag_1464215212735_0132_2
User	hive
Status	SUCCEEDED
Start Time	26 May 2016 14:26:30
End Time	26 May 2016 14:26:38
Duration	7 secs

2.1.1.4 Task Details

RegEx or Column1, Column2... :RegEx Search

First 1 Last - 1 Rows 25

Task Index	Vertex Name	Status	Progress	Start Time	End Time	Duration
02_000000	Reducer 3	SUCCEEDED	100%	26 May 2016 14:26:37	26 May 2016 14:26:37	195 ms
04_000000	Map 4	SUCCEEDED	100%	26 May 2016 14:26:31	26 May 2016 14:26:38	7 secs
03_000000	Map 1	SUCCEEDED	100%	26 May 2016 14:26:31	26 May 2016 14:26:38	7 secs
01_000000	Map 2	SUCCEEDED	100%	26 May 2016 14:26:31	26 May 2016 14:26:37	6 secs
00_000000	Map 5	SUCCEEDED	100%	26 May 2016 14:26:31	26 May 2016 14:26:37	5 secs

2.1.2 Pig Query 2A

```
Scorings = LOAD '/tmp/Assignment_2/Scoring.csv' using PigStorage(',');

Scorings_raw = FILTER Scorings BY $0 != 'playerID';

Scoring = FOREACH Scorings_raw GENERATE $0 as playerid, $1 as Year, $3 as tmID,$4 as lgID,

$5 as pos, $16 as gwg;

grp_by_year = GROUP Scoring BY (Year);

max_year_gwg = FOREACH grp_by_year GENERATE group as year_grp,

MAX(Scoring.gwg) as max_gwg;

order_max_gwg = ORDER max_year_gwg by max_gwg desc;

limit_gwg = LIMIT order_max_gwg 1;

join_Scoring = JOIN Scoring by gwg,limit_gwg by max_gwg;

sort_join_Scoring = FOREACH join_Scoring GENERATE $0 as playerID, $1 as Year,

$2 as tmID, $3 as lgID, $4 as pos, $5 as gwg;

Teams = LOAD '/tmp/Assignment_2/Teams.csv' using PigStorage(',');

Teams_raw = FILTER Teams BY $0 > 0;

Team = FOREACH Teams_raw GENERATE $0 As Year, $2 as tmID, $18 as name;

join_team = JOIN sort_join_Scoring by (Year,tmID), Team by (Year,tmID);

sort_join_team = FOREACH join_team GENERATE $0 as playerID, $1 as Year,

$3 as lgID, $4 as pos, $5 as gwg, $8 as teamNAme;

Masters = LOAD '/tmp/Assignment_2/Master.csv' using PigStorage(',');

Masters_raw = FILTER Masters BY $0 != 'playerID';

Master = FOREACH Masters_raw GENERATE $0 as playerid, $1 as coachid, $3 as firstName, $4 as
lastName, $19 as birthYear, $20 as birthMon, $21 as birthDay, $22 as birthCountry;

join_Master = JOIN sort_join_team by playerID, Master by playerid;

sort_join_Master = FOREACH join_Master GENERATE $1 as Year,

$8 as firstname, $9 as lastname, $10 as birthyear, $11 as birthmonth, $12 as birthday,

$13 as birthcountry, $5 as teamname, $2 as LgID, $3 as Pos, $4 as GWG;

dump sort_join_Master;
```

2.1.2.1 Output

Results Download

```
(1971,Phil,Esposito,1942,2,20,Canada,Boston Bruins,NHL,C,16)
(1970,Phil,Esposito,1942,2,20,Canada,Boston Bruins,NHL,C,16)
(1983,Michel,Goulet,1960,4,21,Canada,Quebec Nordiques,NHL,L,16)
```

2.1.2.2 Log

```
HadoopVersion   PigVersion      UserId  StartedAt       FinishedAt      Features
2.7.1.2.3.2.0-2950      0.15.0.2.3.2.0-2950     yarn    2016-05-26 05:56:46     2016-05-26 05:59:27     HASH_JOIN,GR

Success!

Job Stats (time in seconds):
JobId   Maps    Reduces MaxMapTime      MinMapTime      AvgMapTime      MedianMapTime   MaxReduceTime   MinReduceTim
job_1464241803099_0002  1       1       5       5       5       5       3       3       3       3       Scoring,Scor
job_1464241803099_0003  1       1       2       2       2       2       2       2       2       2       order_max_gw
job_1464241803099_0004  1       1       2       2       2       2       2       2       2       2       order_max_gw
job_1464241803099_0005  1       1       2       2       2       2       4       4       4       4       order_max_gw
job_1464241803099_0006  2       1       3       2       3       3       2       2       2       2       join_Scoring
job_1464241803099_0007  2       1       3       2       3       3       4       4       4       4       Team,Teams,T
job_1464241803099_0008  2       1       5       4       4       4       3       3       3       3       Master,Maste

Input(s):
Successfully read 45975 records (3273095 bytes) from: "/tmp/Assignment_2/Scoring.csv"
Successfully read 1529 records from: "/tmp/Assignment_2/Teams.csv"
Successfully read 7770 records from: "/tmp/Assignment_2/Master.csv"

Output(s):
Successfully stored 3 records (228 bytes) in: "hdfs://sandbox.hortonworks.com:8020/tmp/temp-83753670/tmp-1384434984"
```

```
2016-05-26 05:59:29,266 [main] INFO  org.apache.pig.Main - Pig script completed in 2 minutes, 46 seconds and 742 mil
```

2.1.3 Comparison Table for 2A

	HIVE	PIG
No of Jobs	3	7
Maps	4	2
Reduces	1	1
Total Time	7 sec	2 min 46 sec

2.1.4 Hive Query 2B

```
SELECT mas.firstname AS First_Name,
      mas.lastname AS Last_Name,
      aw.maxAwards AS Total_Awards
FROM
  (SELECT max(ap.AwardCount) AS maxAwards,
                          ap.playerid
   FROM
    ( SELECT count(playerid) AS AwardCount,
                           playerid
     FROM hockey_awards_players
     GROUP BY playerid) ap
   WHERE ap.playerid IN
      (SELECT s.playerid
       FROM
        (SELECT playerid,
               gwg,
               YEAR,
               tmid,
               lgid,
               pos
         FROM hockey_scoring
         WHERE gwg IN
            (SELECT max(gwg)
             FROM hockey_scoring)) s
      JOIN hockey_master m ON (s.playerid = m.playerid))
   GROUP BY ap.playerid
   ORDER BY maxAwards DESC ) aw
JOIN
  (SELECT firstname,
         lastname,
```

playerid

FROM hockey_master) mas ON (aw.playerid = mas.PlayerID) LIMIT 1;

2.1.4.1 Output

100%

Query Process Results (Status: SUCCEEDED) Save results...

Logs Results

Filter columns... previous next

first_name	last_name	total_awards
Phil	Esposito	17

2.1.4.2 Log

100%

Query Process Results (Status: SUCCEEDED) Save results...

Logs Results

```
INFO : Session is already open
INFO : Tez session was closed. Reopening...
INFO : Session re-established.
INFO :

INFO : Status: Running (Executing on YARN cluster with App id application_1464215212735_0133)

INFO : Map 1: 0/1 Map 5: 0/1 Map 6: 0/1 Map 8: 0/1 Map 9: 0/1 Reducer 2: 0/1 Reducer 3: 0/1 Reducer 4: 0/1 Reducer 7: 0/1
```

2.1.4.3 DAG Details

DAG Details

Download data

Application Id	application_1464215212735_0133
Entity Id	dag_1464215212735_0133_1
User	hive
Status	SUCCEEDED
Start Time	26 May 2016 14:34:29
End Time	26 May 2016 14:34:39
Duration	9 secs

2.1.4.4 Task Details

All DAGs / DAG [hive_20160526043425_b09744b2-0474-46f8-a4df-d38796b904d4:10]

DAG Details | DAG Counters | Graphical View | All Vertices | All Tasks | All TaskAttempts

Last refreshed at **26 May 2016 05:16:42** Refresh

RegEx or Column1, Column2... :RegEx Search

First 1 Last - 1 Rows 25

Task Index	Vertex Name	Status	Progress	Start Time	End Time	Duration
08_000000	Reducer 4	SUCCEEDED	100%	26 May 2016 14:34:38	26 May 2016 14:34:39	441 ms
07_000000	Reducer 3	SUCCEEDED	100%	26 May 2016 14:34:38	26 May 2016 14:34:38	304 ms
03_000000	Reducer 7	SUCCEEDED	100%	26 May 2016 14:34:37	26 May 2016 14:34:37	184 ms
06_000000	Reducer 2	SUCCEEDED	100%	26 May 2016 14:34:37	26 May 2016 14:34:38	1 secs
04_000000	Map 5	SUCCEEDED	100%	26 May 2016 14:34:30	26 May 2016 14:34:38	8 secs
00_000000	Map 8	SUCCEEDED	100%	26 May 2016 14:34:30	26 May 2016 14:34:36	6 secs
02_000000	Map 6	SUCCEEDED	100%	26 May 2016 14:34:30	26 May 2016 14:34:37	7 secs
05_000000	Map 1	SUCCEEDED	100%	26 May 2016 14:34:30	26 May 2016 14:34:37	6 secs
01_000000	Map 9	SUCCEEDED	100%	26 May 2016 14:34:30	26 May 2016 14:34:37	7 secs

2.1.5 Pig Query 2B

```
Scorings = LOAD '/tmp/Assignment_2/Scoring.csv' using PigStorage(',');

Scorings_raw = FILTER Scorings BY $0 != 'playerID';

Scoring = FOREACH Scorings_raw GENERATE $0 as playerid, $1 as Year, $3 as tmID,$4 as lgID,

$5 as pos, $16 as gwg;

grp_by_year = GROUP Scoring BY (Year);

max_year_gwg = FOREACH grp_by_year GENERATE group as year_grp,

MAX(Scoring.gwg) as max_gwg;

order_max_gwg = ORDER max_year_gwg by max_gwg desc;

limit_gwg = LIMIT order_max_gwg 1;

join_Scoring = JOIN Scoring by gwg,limit_gwg by max_gwg;

sort_join_Scoring = FOREACH join_Scoring GENERATE $0 as playerID, $1 as Year,

$2 as tmID, $3 as lgID, $4 as pos, $5 as gwg;

Teams = LOAD '/tmp/Assignment_2/Teams.csv' using PigStorage(',');

Teams_raw = FILTER Teams BY $0 > 0;

Team = FOREACH Teams_raw GENERATE $0 As Year, $2 as tmID, $18 as name;

join_team = JOIN sort_join_Scoring by (Year,tmID), Team by (Year,tmID);

sort_join_team = FOREACH join_team GENERATE $0 as playerID, $1 as Year,

$3 as lgID, $4 as pos, $5 as gwg, $8 as teamNAme;
```

```
Masters = LOAD '/tmp/Assignment_2/Master.csv' using PigStorage(',');
Masters_raw = FILTER Masters BY $0 != 'playerID';
Master = FOREACH Masters_raw GENERATE $0 as playerid, $1 as coachid, $3 as firstName,
$4 as lastName, $19 as birthYear, $20 as birthMon, $21 as birthDay, $22 as birthCountry;
join_Master = JOIN sort_join_team by playerID, Master by playerid;
sort_join_Master = FOREACH join_Master GENERATE $0 as playerid,
$8 as firstname, $9 as lastname;
awardplayers = load '/tmp/Assignment_2/AwardsPlayers.csv' using PigStorage(',');
awardplayers_raw = FILTER awardplayers BY $0 != 'playerID';
awardplayer = FOREACH awardplayers_raw GENERATE $0 as playerID, $1 as award, $2 as year;
group_awardplayer = group awardplayer by (playerID);
count_award = FOREACH group_awardplayer generate group as grp_yr ,
COUNT(awardplayer.award) as no_of_award;
award_final = FOREACH count_award GENERATE $0 as playerid , $1 as No_of_awards;
join_awardplayer = JOIN sort_join_Master by (playerid), award_final by (playerid);
final_awardplayer = FOREACH join_awardplayer GENERATE $1 as firstname, $2 as lastname,
$4 as no_of_award;
order_final_awardplayer = ORDER final_awardplayer by no_of_award desc;
limit_final_awardplayer = LIMIT order_final_awardplayer 1;
dump limit_final_awardplayer;
```

2.1.5.1 Output

2.1.5.2 Log

```
HadoopVersion   PigVersion      UserId  StartedAt       FinishedAt      Features
2.7.1.2.3.2.0-2950      0.15.0.2.3.2.0-2950     yarn    2016-05-26 06:02:39     2016-05-26 06:06:29     HASH_JOIN,GR(

Success!

Job Stats (time in seconds):
JobId   Maps    Reduces MaxMapTime      MinMapTime      AvgMapTime      MedianMapTime   MaxReduceTime   MinReduceTim
job_1464241803099_0010  1       1       3       3       3       3       2       2       2       2       award_final,
job_1464241803099_0011  1       1       4       4       4       4       2       2       2       2       Scoring,Scor
job_1464241803099_0012  1       1       2       2       2       2       2       2       2       2       order_max_gw
job_1464241803099_0013  1       1       2       2       2       2       2       2       2       2       order_max_gw
job_1464241803099_0014  1       1       2       2       2       2       2       2       2       2       order_max_gw
job_1464241803099_0015  2       1       3       2       2       2       3       3       3       3       join_Scoring
job_1464241803099_0016  2       1       3       3       3       3       2       2       2       2       Team,Teams,T
job_1464241803099_0017  2       1       3       3       3       3       2       2       2       2       Master,Maste
job_1464241803099_0018  2       1       4       3       3       3       3       3       3       3       final_awardp
job_1464241803099_0019  1       1       2       2       2       2       3       3       3       3       order_final_
job_1464241803099_0020  1       1       2       2       2       2       2       2       2       2       order_final_
job_1464241803099_0021  1       1       3       3       3       3       2       2       2       2       order_final_

Input(s):
Successfully read 45975 records (3273095 bytes) from: "/tmp/Assignment_2/Scoring.csv"
Successfully read 1529 records from: "/tmp/Assignment_2/Teams.csv"
Successfully read 7770 records from: "/tmp/Assignment_2/Master.csv"
Successfully read 2093 records (77197 bytes) from: "/tmp/Assignment_2/AwardsPlayers.csv"
```

```
2016-05-26 06:06:31,601 [main] INFO  org.apache.pig.Main - Pig script completed in 3 minutes, 54 seconds and 537 mil
```

2.1.6 Comparison table for 2B

	HIVE	PIG
No of Jobs	8	12
Maps	5	2
Reduces	4	1
Total Time	9 sec	3 min 54 sec

2.1.7 Hive Query 2 C

```
Select aw1.award as Award_Name,aw1.year as Year,s1.pts as Points
from hockey_scoring s1
join
(
select award,playerid,year
from hockey_awards_players
where playerid in (
select playerid
from hockey_master mas1
join
(
SELECT mas.firstname, mas.lastname, aw.maxAwards
from
(
select max(ap.AwardCount) as maxAwards,ap.playerid
     from
        (
         select count(playerid) as AwardCount,playerid
         from hockey_awards_players
         group by playerid) ap
         WHERE ap.playerid in
         (SELECT s.playerid
FROM (
select playerid,gwg,year,tmid,lgid,pos
from hockey_scoring
where gwg in ( select max(gwg)
            from hockey_scoring)) s
Join
hockey_master m
on ( s.playerid = m.playerid))
     group by ap.playerid
     order by maxAwards desc
  ) aw
JOIN
( SELECT firstname,lastname,playerid
  from hockey_master) mas
ON (aw.playerid = mas.PlayerID)LIMIT 1) mas2
ON ( mas1.firstname = mas2.firstname and mas1.lastname = mas2.lastname))) aw1
ON ( s1.year = aw1.year and s1.playerid = aw1.playerid)
order by points desc;
```

2.1.7.1 Output

100%

Query Process Results (Status: SUCCEEDED) Save results...

Logs Results

Filter columns... previous next

award_name	year	points
Art Ross	1970	152
Pearson	1970	152
First Team All-Star	1970	152
First Team All-Star	1973	145
Hart	1973	145
Art Ross	1973	145
Art Ross	1971	133
First Team All-Star	1971	133
Pearson	1972	130
First Team All-Star	1972	130
Art Ross	1972	130
Second Team All-Star	1974	127
First Team All-Star	1968	126
Hart	1968	126
Art Ross	1968	126
First Team All-Star	1969	99
Second Team All-Star	1967	84

2.1.7.2 Log

100%

Query Process Results (Status: SUCCEEDED) Save results...

Logs Results

INFO : Session is already open
INFO :

INFO : Status: Running (Executing on YARN cluster with App id application_1464215212735_0133)

INFO : Map 1: -/- Map 10: -/- Map 11: 0/1 Map 12: -/- Map 13: -/- Map 2: 0/1 Map 7: -/- Map 8: -/- Reducer 14: 0/1 Reducer 3: 0/1 Reducer 4: 0/1 Reducer 5: 0/1 Reducer 6: 0/1 Reducer 9: 0/1
INFO : Map 1: 0/1 Map 10: 0/1 Map 11: 0/1 Map 12: 0/1 Map 13: 0/1 Map 2: 0/1 Map 7: 0/1 Map 8: 0/1 Reducer 14: 0/1 Reducer 3: 0/1 Reducer 4: 0/1 Reducer 5: 0/1 Reducer 6: 0/1 Reducer 9: 0/1
INFO : Map 1: 0/1 Map 10: 0/1 Map 11: 0/1 Map 12: 0/1 Map 13: 0/1 Map 2: 0/1 Map 7: 0/1 Map 8: 0/1 Reducer 14: 0/1 Reducer 3: 0/1 Reducer 4: 0/1 Reducer 5: 0/1 Reducer 6: 0/1 Reducer 9: 0/1

2.1.7.3 DAG Details

DAG Details

Download data

Application Id	application_1464215212735_0133
Entity Id	dag_1464215212735_0133_2
User	hive
Status	SUCCEEDED
Start Time	26 May 2016 14:38:57
End Time	26 May 2016 14:39:12
Duration	14 secs

2.1.7.4 Task Details

All DAGs / DAG [hive_20160526043856_8998ec61-4418-4699-ae6f-909bf3ce6e7f:11]

DAG Details | DAG Counters | Graphical View | All Vertices | All Tasks | All TaskAttempts

Last refreshed at **26 May 2016 05:21:56** Refresh

RegEx or Column1, Column2... :RegEx Search

First 1 Last - 1 Rows 25

Task Index	Vertex Name	Status	Progress	Start Time	End Time	Duration
13_000000	Reducer 14	SUCCEEDED	100%	26 May 2016 14:39:11	26 May 2016 14:39:12	411 ms
09_000000	Reducer 6	SUCCEEDED	100%	26 May 2016 14:39:10	26 May 2016 14:39:10	168 ms
08_000000	Reducer 5	SUCCEEDED	100%	26 May 2016 14:39:10	26 May 2016 14:39:10	375 ms
06_000000	Reducer 4	SUCCEEDED	100%	26 May 2016 14:39:10	26 May 2016 14:39:10	142 ms
01_000000	Reducer 9	SUCCEEDED	100%	26 May 2016 14:39:08	26 May 2016 14:39:09	581 ms
05_000000	Reducer 3	SUCCEEDED	100%	26 May 2016 14:39:08	26 May 2016 14:39:10	1 secs
12_000000	Map 13	SUCCEEDED	100%	26 May 2016 14:38:58	26 May 2016 14:39:11	13 secs
11_000000	Map 1	SUCCEEDED	100%	26 May 2016 14:38:58	26 May 2016 14:39:11	13 secs
10_000000	Map 12	SUCCEEDED	100%	26 May 2016 14:38:58	26 May 2016 14:39:11	13 secs
03_000000	Map 7	SUCCEEDED	100%	26 May 2016 14:38:58	26 May 2016 14:39:10	11 secs
02_000000	Map 10	SUCCEEDED	100%	26 May 2016 14:38:58	26 May 2016 14:39:08	10 secs
04_000000	Map 2	SUCCEEDED	100%	26 May 2016 14:38:57	26 May 2016 14:39:08	10 secs
07_000000	Map 11	SUCCEEDED	100%	26 May 2016 14:38:57	26 May 2016 14:39:09	11 secs
00_000000	Map 8	SUCCEEDED	100%	26 May 2016 14:38:57	26 May 2016 14:39:08	10 secs

2.1.8 Pig Query 2c

```
Scorings = LOAD '/tmp/Assignment_2/Scoring.csv' using PigStorage(',');
Scorings_raw = FILTER Scorings BY $0 != 'playerID';
Scoring = FOREACH Scorings_raw GENERATE $0 as playerid, $1 as Year, $3 as tmID,$4
as lgID,
$5 as pos, $16 as gwg;
grp_by_year = GROUP Scoring BY (Year);
max_year_gwg = FOREACH grp_by_year GENERATE group as year_grp,
MAX(Scoring.gwg) as max_gwg;
order_max_gwg = ORDER max_year_gwg by max_gwg desc;
limit_gwg = LIMIT order_max_gwg 1;
join_Scoring = JOIN Scoring by gwg,limit_gwg by max_gwg;
sort_join_Scoring = FOREACH join_Scoring GENERATE $0 as playerID, $1 as Year,
$2 as tmID, $3 as lgID, $4 as pos, $5 as gwg;
Teams = LOAD '/tmp/Assignment_2/Teams.csv' using PigStorage(',');
Teams_raw = FILTER Teams BY $0 > 0;
Team = FOREACH Teams_raw GENERATE $0 As Year, $2 as tmID, $18 as name;
join_team = JOIN sort_join_Scoring by (Year,tmID), Team by (Year,tmID);
sort_join_team = FOREACH join_team GENERATE $0 as playerID, $1 as Year,
$3 as lgID, $4 as pos, $5 as gwg, $8 as teamNAme;
Masters = LOAD '/tmp/Assignment_2/Master.csv' using PigStorage(',');
Masters_raw = FILTER Masters BY $0 != 'playerID';
Master = FOREACH Masters_raw GENERATE $0 as playerid, $1 as coachid, $3 as
```

```
firstName,
$4 as lastName, $19 as birthYear, $20 as birthMon, $21 as birthDay, $22 as birthCountry;
join_Master = JOIN sort_join_team by playerID, Master by playerid;
sort_join_Master = FOREACH join_Master GENERATE $0 as playerid,
$8 as firstname, $9 as lastname;
awardplayers = load '/tmp/Assignment_2/AwardsPlayers.csv' using PigStorage(',');
awardplayers_raw = FILTER awardplayers BY $0 != 'playerID';
awardplayer = FOREACH awardplayers_raw GENERATE $0 as playerID, $1 as award, $2
as year;
group_awardplayer = group awardplayer by (playerID);
count_award = FOREACH group_awardplayer generate group as grp_yr ,
COUNT(awardplayer.award) as no_of_award;
award_final = FOREACH count_award GENERATE $0 as playerid , $1 as No_of_awards;
join_awardplayer = JOIN sort_join_Master by (playerid), award_final by (playerid);
final_awardplayer = FOREACH join_awardplayer GENERATE $0 as playerid, $1 as
firstname, $2 as lastname,
$4 as no_of_award;
order_final_awardplayer = ORDER final_awardplayer by no_of_award desc;
limit_final_awardplayer = LIMIT order_final_awardplayer 1;
final_solution = FOREACH limit_final_awardplayer GENERATE $0 as playerid , $1 as
firstname,
$2 as lastname;
Scoring_1 = FOREACH Scorings_raw GENERATE $0 as playerid, $1 as Year, $9 as Points;
Awardplayers = LOAD '/tmp/Assignment_2/AwardsPlayers.csv' using PigStorage(',');
Awardplayers_raw = FILTER Awardplayers BY $0 != 'playerID';
Awardplayer = FOREACH Awardplayers_raw GENERATE $0 as playerid, $1 as Award, $2
as Year;
join_scoring_awardplayer = JOIN Scoring_1 by (playerid,Year), Awardplayer by
(playerid,Year);
joint_Final = FOREACH join_scoring_awardplayer GENERATE $0 as playerid, $1 as Year,
$2 as Points,
$4 as Awardname;
join_final_answer = JOIN final_solution by (playerid),
joint_Final by (playerid);
format_join_final_1 = FOREACH join_final_answer GENERATE $6 as Awardname, $4 as
Year,
$5 as Points;
dump format_join_final_1;
```

2.1.8.1 Output

2c - COMPLETED

Job ID	job_1464220614001_0110
Started	2016-05-26 15:23

Results

```
(Art Ross,1968,126)
(Second Team All-Star,1967,84)
(Hart,1968,126)
(First Team All-Star,1968,126)
(First Team All-Star,1969,99)
(Pearson,1970,152)
(Art Ross,1970,152)
(First Team All-Star,1970,152)
(First Team All-Star,1971,133)
(Art Ross,1971,133)
(First Team All-Star,1972,130)
(Art Ross,1972,130)
(Pearson,1972,130)
(Art Ross,1973,145)
(First Team All-Star,1973,145)
(Hart,1973,145)
(Second Team All-Star,1974,127)
```

2.1.8.2 Log

```
HadoopVersion   PigVersion      UserId  StartedAt       FinishedAt      Features
2.7.1.2.3.2.0-2950      0.15.0.2.3.2.0-2950     yarn    2016-05-26 05:24:05     2016-05-26 05:29:01     HASH_JOIN,

Success!

Job Stats (time in seconds):
JobId   Maps    Reduces MaxMapTime      MinMapTime      AvgMapTime      MedianMapTime   MaxReduceTime   MinReduceT
job_1464220614001_0112  1       1       7       7       7       7       2       2       2       2       group_by_y
job_1464220614001_0114  1       1       3       3       3       3       2       2       2       2       ap,ap_raw,
job_1464220614001_0117  1       1       2       2       2       2       3       3       3       3       order_max_
job_1464220614001_0118  2       1       4       3       3       3       3       3       3       3       ap1,final_
job_1464220614001_0120  1       1       2       2       2       2       2       2       2       2       order_max_
job_1464220614001_0122  1       1       2       2       2       2       3       3       3       3       order_max_
job_1464220614001_0124  2       1       3       3       3       3       3       3       3       3       final_s_li
job_1464220614001_0126  2       1       3       3       3       3       3       3       3       3       final_join
job_1464220614001_0128  2       1       5       5       5       5       3       3       3       3       join_s_lim
job_1464220614001_0130  2       1       3       3       3       3       2       2       2       2       final_join
job_1464220614001_0132  1       1       2       2       2       2       3       3       3       3       order_fina
job_1464220614001_0134  1       1       2       2       2       2       2       2       2       2       order_fina
job_1464220614001_0136  1       1       2       2       2       2       3       3       3       3       final_limi
job_1464220614001_0138  2       1       3       3       3       3       4       4       4       4       final_answ

Input(s):
Successfully read 45975 records (3273100 bytes) from: "/tmp/FIT5148assignment/Scoring.csv"
Successfully read 2093 records (77202 bytes) from: "/tmp/FIT5148assignment/AwardsPlayers.csv"
Successfully read 1529 records from: "/tmp/FIT5148assignment/Teams.csv"
Successfully read 7770 records from: "/tmp/FIT5148assignment/Master.csv"
```

```
.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MapReduceLauncher - Encountered Warning FIELD_DISCARDED_
.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MapReduceLauncher - Encountered Warning ACCESSING_NON_EX
.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MapReduceLauncher - Success!
.apache.pig.data.SchemaTupleBackend - Key [pig.schematuple] was not set... will not generate code.
.apache.hadoop.mapreduce.lib.input.FileInputFormat - Total input paths to process : 1
.apache.pig.backend.hadoop.executionengine.util.MapRedUtil - Total input paths to process : 1
.apache.pig.Main - Pig script completed in 4 minutes, 16 seconds and 467 milliseconds (256467 ms)
```

2.1.9 Comparison Table for 2c

	HIVE	PIG
No of Jobs	11	14
Maps	10	2
Reduces	6	1
Total Time	14sec	4 min 16 sec

2.2 Task 3

2.2.1 Hive Query 3 A

```
SELECT firstname AS First_Name,
    lastname AS Last_Name,
    concat(birthday,'/',birthmon,'/',birthyear) AS DOB,
    birthcountry AS Birth_Country,
    COUNT(award)AS Award_No
FROM hockey_award_coaches ac,
   hockey_master m
WHERE ac.coachid = m.coachid
GROUP BY firstname,
     lastname,
     concat(birthday,'/',birthmon,'/',birthyear),
     birthcountry
ORDER BY award_no DESC LIMIT 1;
```

2.2.1.1 Output

first_name	last_name	dob	birth_country	award_no
Dick	Irvin	19/7/1892	Canada	9

2.2.1.2 Log

100%

Query Process Results (Status: SUCCEEDED) Save results...

Logs Results

```
INFO : Session is already open
INFO :

INFO : Status: Running (Executing on YARN cluster with App id application_1464215212735_0133)

INFO : Map 1: 0/1 Map 2: 0/1 Reducer 3: 0/1 Reducer 4: 0/1
INFO : Map 1: 0(+1)/1 Map 2: 0/1 Reducer 3: 0/1 Reducer 4: 0/1
INFO : Map 1: 0(+1)/1 Map 2: 0(+1)/1 Reducer 3: 0/1 Reducer 4: 0/1
INFO : Map 1: 1/1 Map 2: 0(+1)/1 Reducer 3: 0/1 Reducer 4: 0/1
INFO : Map 1: 1/1 Map 2: 1/1 Reducer 3: 0(+1)/1 Reducer 4: 0/1
INFO : Map 1: 1/1 Map 2: 1/1 Reducer 3: 1/1 Reducer 4: 0(+1)/1
INFO : Map 1: 1/1 Map 2: 1/1 Reducer 3: 1/1 Reducer 4: 1/1
```

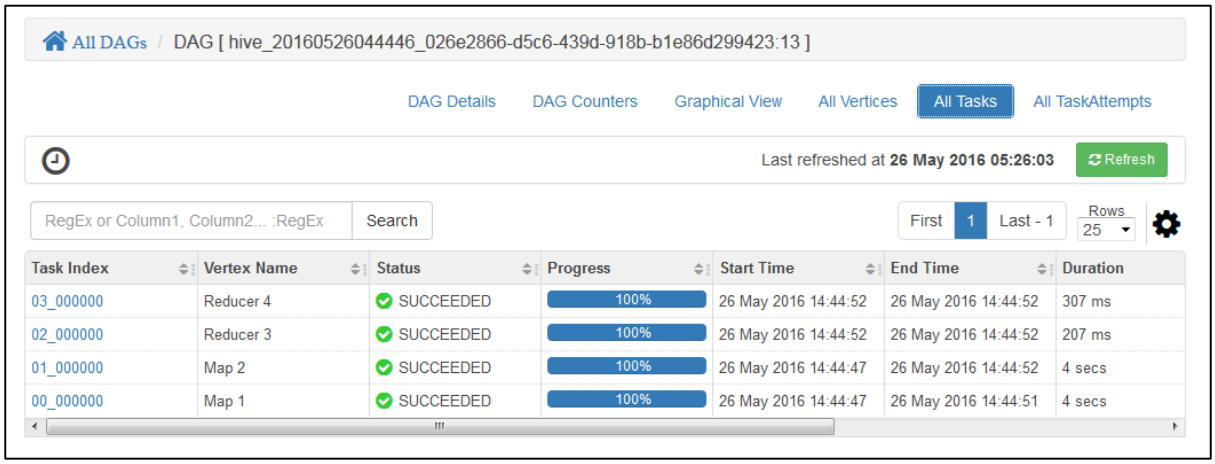
2.2.1.3 DAG Details

DAG Details

Download data

Application Id	application_1464215212735_0133
Entity Id	dag_1464215212735_0133_4
User	hive
Status	SUCCEEDED
Start Time	26 May 2016 14:44:47
End Time	26 May 2016 14:44:52
Duration	5 secs

2.2.1.4 Task Details



Task Index	Vertex Name	Status	Progress	Start Time	End Time	Duration
03_000000	Reducer 4	SUCCEEDED	100%	26 May 2016 14:44:52	26 May 2016 14:44:52	307 ms
02_000000	Reducer 3	SUCCEEDED	100%	26 May 2016 14:44:52	26 May 2016 14:44:52	207 ms
01_000000	Map 2	SUCCEEDED	100%	26 May 2016 14:44:47	26 May 2016 14:44:52	4 secs
00_000000	Map 1	SUCCEEDED	100%	26 May 2016 14:44:47	26 May 2016 14:44:51	4 secs

2.2.2 Pig Query 3A

```
Masters = LOAD '/tmp/Assignment_2/Master.csv' using PigStorage(',');

Masters_raw = FILTER Masters BY $0 != 'playerID';

Master = FOREACH Masters_raw GENERATE $1 as coachid, $3 as firstName, $4 as lastName, $19 as birthYear,

$20 as birthMon, $21 as birthDay, $22 as birthCountry;

AwardCoaches = LOAD '/tmp/Assignment_2/AwardsCoaches.csv' using PigStorage(',');

AwardCoaches_raw = FILTER AwardCoaches BY $0 != 'coachID';

AwardCoach = FOREACH AwardCoaches_raw GENERATE $0 as coachid, $1 as award;

grp_by_coachid = GROUP AwardCoach BY (coachid);

count_award = FOREACH grp_by_coachid GENERATE group as coachid_grp,

COUNT(AwardCoach.award) as award;

join_AwardCoach = JOIN count_award BY (coachid_grp), Master BY (coachid);

filter_join_AwardCoach = FOREACH join_AwardCoach GENERATE $3 as firstname,

$4 as lastname, $5 as birthyear, $6 as birthmonth, $7 as birthday, $8 as birthCountry,

$1 as awardcount;

order_answer = ORDER filter_join_AwardCoach by awardcount desc;

order_limit = LIMIT order_answer 1;

DUMP order_limit;
```

2.2.2.1 Output

Results Download

```
(Dick,Irvin,1892,7,19,Canada,9)
```

2.2.2.2 Log

```
2016-05-26 06:20:21,398 [main] INFO  org.apache.pig.tools.pigstats.mapreduce.SimplePigStats - Script Statistics:

HadoopVersion   PigVersion      UserId  StartedAt       FinishedAt      Features
2.7.1.2.3.2.0-2950      0.15.0.2.3.2.0-2950     yarn    2016-05-26 06:18:43     2016-05-26 06:20:21     HASH_JOIN,GR

Success!

Job Stats (time in seconds):
JobId   Maps    Reduces MaxMapTime      MinMapTime      AvgMapTime      MedianMapTime   MaxReduceTime   MinReduceTim
job_1464241803099_0036  1       1       2       2       2       2       2       2       2       2       AwardCoach,A
job_1464241803099_0037  2       1       4       4       4       4       5       5       5       5       Master,Maste
job_1464241803099_0038  1       1       2       2       2       2       2       2       2       2       order_answer
job_1464241803099_0039  1       1       2       2       2       2       2       2       2       2       order_answer
job_1464241803099_0040  1       1       2       2       2       2       4       4       4       4       order_answer

Input(s):
Successfully read 88 records (3469 bytes) from: "/tmp/Assignment_2/AwardsCoaches.csv"
Successfully read 7770 records from: "/tmp/Assignment_2/Master.csv"

Output(s):
Successfully stored 1 records (40 bytes) in: "hdfs://sandbox.hortonworks.com:8020/tmp/temp1798016033/tmp-1221639234"

Counters:
Total records written : 1
Total bytes written : 40
Spillable Memory Manager spill count : 0
Total bags proactively spilled: 0
Total records proactively spilled: 0
```

```
2016-05-26 06:20:22,578 [main] INFO  org.apache.pig.Main - Pig script completed in 1 minute, 41 seconds and 927 mill
```

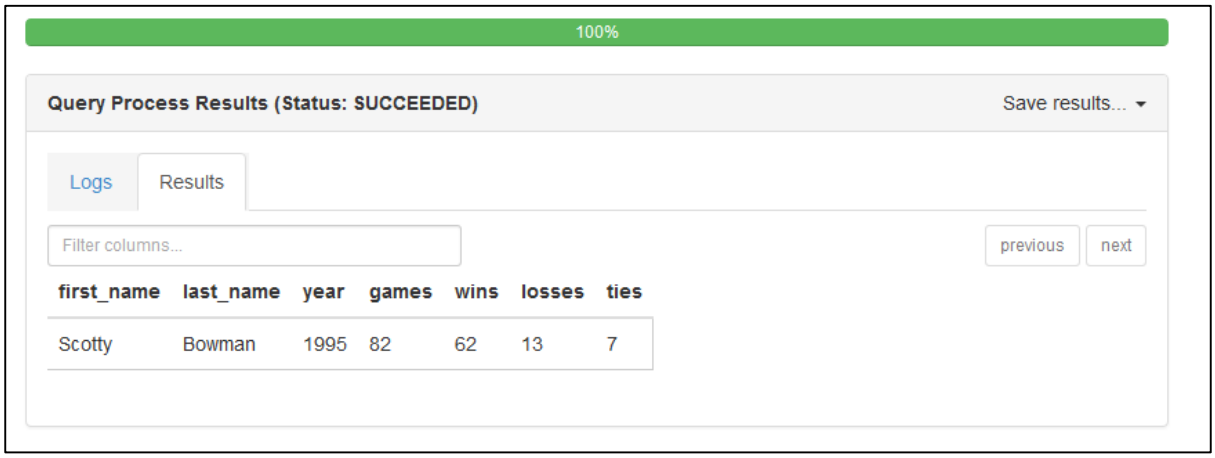
2.2.3 Comparison table for 3A

	HIVE	PIG
No of Jobs	2	5
Maps	2	2
Reduces	2	1
Total Time	5sec	1min 41 sec

2.2.4 Hive Query 3B

```
SELECT firstname AS First_Name,
      lastname AS Last_Name,
      c.year AS YEAR,
      c.g AS Games,
      c.w AS Wins,
      c.l AS losses,
      c.t AS Ties
FROM hockey_coaches c,
    hockey_master m
WHERE c.coachid=m.coachid
  AND c.w IN
    (SELECT max(w)
     FROM hockey_coaches);
```

2.2.4.1 Output



first_name	last_name	year	games	wins	losses	ties
Scotty	Bowman	1995	82	62	13	7

2.2.4.2 Log

100%

Query Process Results (Status: SUCCEEDED) Save results...

Logs Results

```
INFO : Session is already open
INFO :

INFO : Status: Running (Executing on YARN cluster with App id application_1464215212735_0133)

INFO : Map 1: 0/1 Map 2: 0/1 Map 3: 0/1 Reducer 4: 0/1
INFO : Map 1: 0(+1)/1 Map 2: 0/1 Map 3: 0/1 Reducer 4: 0/1
INFO : Map 1: 0(+1)/1 Map 2: 0/1 Map 3: 0(+1)/1 Reducer 4: 0/1
INFO : Map 1: 0(+1)/1 Map 2: 0(+1)/1 Map 3: 0(+1)/1 Reducer 4: 0/1
INFO : Map 1: 1/1 Map 2: 0(+1)/1 Map 3: 0(+1)/1 Reducer 4: 0/1
INFO : Map 1: 1/1 Map 2: 0(+1)/1 Map 3: 1/1 Reducer 4: 0/1
INFO : Map 1: 1/1 Map 2: 0(+1)/1 Map 3: 1/1 Reducer 4: 0(+1)/1
INFO : Map 1: 1/1 Map 2: 0(+1)/1 Map 3: 1/1 Reducer 4: 1/1
INFO : Map 1: 1/1 Map 2: 1/1 Map 3: 1/1 Reducer 4: 1/1
```

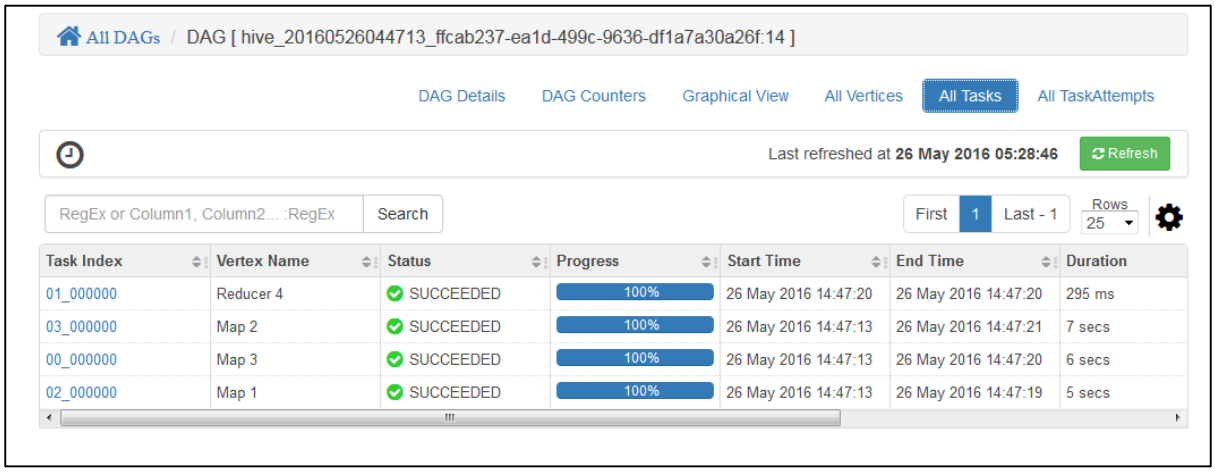
2.2.4.3 DAG Detail

DAG Details

Download data

Application Id	application_1464215212735_0133
Entity Id	dag_1464215212735_0133_5
User	hive
Status	SUCCEEDED
Start Time	26 May 2016 14:47:13
End Time	26 May 2016 14:47:21
Duration	7 secs

2.2.4.4 Task Details



2.2.5 Pig Query 3B

```
Coaches = LOAD '/tmp/Assignment_2/Coaches.csv' using PigStorage(',');

Coaches_raw = FILTER Coaches BY $0 != 'coachID';

Coach = FOREACH Coaches_raw GENERATE $0 as coachid, $1 as Year, $6 as Games, $7 as Wins,

$8 as Losses, $9 as Ties;

grp_by_year = GROUP Coach BY (Year);

max_points = FOREACH grp_by_year GENERATE group as year_grp,

MAX(Coach.Wins) as max_Wins;

join_max_points = JOIN max_points by (year_grp,max_Wins), Coach by (Year, Wins);

max_player_points = FOREACH join_max_points GENERATE $0 as Year, $1 as Wins,

$2 as coachid, $4 as Games, $6 as Losses, $7 as Ties;

Masters = LOAD '/tmp/Assignment_2/Master.csv' using PigStorage(',');

Masters_raw = FILTER Masters BY $1 != 'coachID';

Master = FOREACH Masters_raw GENERATE $1 as coachid, $3 as firstName, $4 as lastName;

join_coach_master = JOIN max_player_points by coachid, Master by coachid;

max_player_info = FOREACH join_coach_master GENERATE $0 as year, $7 as firstname,

$8 as lastname, $3 as Games, $1 as Wins, $4 as Loses, $5 as Ties;

order_scoring = ORDER max_player_info by Wins desc;

order_limit = LIMIT order_scoring 1;

dump order_limit;
```

2.2.5.1 Output

Results Download

```
(1995,Scotty,Bowman,82,62.0,13,7)
```

2.2.5.2 Log

```
HadoopVersion   PigVersion      UserId  StartedAt       FinishedAt      Features
2.7.1.2.3.2.0-2950      0.15.0.2.3.2.0-2950     yarn    2016-05-26 06:24:58     2016-05-26 06:27:02     HASH_JOIN,GR

Success!

Job Stats (time in seconds):
JobId   Maps    Reduces MaxMapTime      MinMapTime      AvgMapTime      MedianMapTime   MaxReduceTime   MinReduceTim
job_1464241803099_0043  1       1       3       3       3       3       3       3       3       3       Coach,Coache
job_1464241803099_0044  2       1       3       3       3       3       2       2       2       2       join_max_poi
job_1464241803099_0045  2       1       3       3       3       3       3       3       3       3       Master,Maste
job_1464241803099_0046  1       1       3       3       3       3       3       3       3       3       order_scorin
job_1464241803099_0047  1       1       2       2       2       2       2       2       2       2       order_scorin
job_1464241803099_0048  1       1       2       2       2       2       2       2       2       2       order_scorin

Input(s):
Successfully read 1824 records (81287 bytes) from: "/tmp/Assignment_2/Coaches.csv"
Successfully read 7770 records from: "/tmp/Assignment_2/Master.csv"

Output(s):
Successfully stored 1 records (46 bytes) in: "hdfs://sandbox.hortonworks.com:8020/tmp/temp330812894/tmp2112797200"

Counters:
Total records written : 1
Total bytes written : 46
Spillable Memory Manager spill count : 0
Total bags proactively spilled: 0
Total records proactively spilled: 0
```

```
2016-05-26 06:27:03,640 [main] INFO  org.apache.pig.Main - Pig script completed in 2 minutes, 8 seconds and 263 mill
```

2.2.6 Comparison Table for 3B

	HIVE	PIG
No of Jobs	3	6
Maps	3	1
Reduces	1	2
Total Time	7sec	2min 8 sec

2.2.7 Hive Query 3C

```
SELECT firstname AS First_Name,
      lastname AS Last_Name,
      c.year AS YEAR,
      c.g AS Games,
      c.w AS Wins,
      c.l AS losses,
      c.t AS Ties,
      count(ac.award) AS COUNT_AWARDS
FROM hockey_coaches c,
    hockey_master m,
    hockey_award_coaches ac
WHERE c.coachid=m.coachid
  AND c.coachid=ac.coachid
  AND c.w IN
   (SELECT max(w)
    FROM hockey_coaches)
GROUP BY firstname,
        lastname,
        c.year,
        c.g,
        c.w,
        c.l,
        c.t;
```

2.2.7.1 Output

100%

Query Process Results (Status: SUCCEEDED) Save results...

Logs Results

Filter columns... previous next

first_name	last_name	year	games	wins	losses	ties	count_awards
Scotty	Bowman	1995	82	62	13	7	2

2.2.7.2 Log

100%

Query Process Results (Status: SUCCEEDED) Save results...

Logs Results

```
INFO : Session is already open
INFO :

INFO : Status: Running (Executing on YARN cluster with App id application_1464215212735_0133)

INFO : Map 1: 0/1 Map 2: 0/1 Map 4: 0/1 Map 5: 0/1 Reducer 3: 0/1 Reducer 6: 0/1
INFO : Map 1: 0(+1)/1 Map 2: 0/1 Map 4: 0/1 Map 5: 0/1 Reducer 3: 0/1 Reducer 6: 0/1
INFO : Map 1: 0(+1)/1 Map 2: 0/1 Map 4: 0(+1)/1 Map 5: 0/1 Reducer 3: 0/1 Reducer 6: 0/1
INFO : Map 1: 0(+1)/1 Map 2: 0(+1)/1 Map 4: 0(+1)/1 Map 5: 0/1 Reducer 3: 0/1 Reducer 6: 0/1
INFO : Map 1: 0(+1)/1 Map 2: 0(+1)/1 Map 4: 0(+1)/1 Map 5: 0(+1)/1 Reducer 3: 0/1 Reducer 6: 0/1
```

2.2.7.3 DAG Details

DAG Details

Download data

Application Id	application_1464215212735_0133
Entity Id	dag_1464215212735_0133_6
User	hive
Status	SUCCEEDED
Start Time	26 May 2016 14:50:17
End Time	26 May 2016 14:50:26
Duration	9 secs

2.2.7.4 Task Details

All DAGs / DAG [hive_20160526045016_3579d709-88c3-4571-ae01-7298b5c56189:15]

DAG Details | DAG Counters | Graphical View | All Vertices | All Tasks | All TaskAttempts

Last refreshed at **26 May 2016 05:31:55** Refresh

RegEx or Column1, Column2... :RegEx Search

First 1 Last - 1 Rows 25

Task Index	Vertex Name	Status	Progress	Start Time	End Time	Duration
05_000000	Reducer 3	SUCCEEDED	100%	26 May 2016 14:50:26	26 May 2016 14:50:26	432 ms
02_000000	Reducer 6	SUCCEEDED	100%	26 May 2016 14:50:24	26 May 2016 14:50:24	361 ms
04_000000	Map 2	SUCCEEDED	100%	26 May 2016 14:50:17	26 May 2016 14:50:26	8 secs
01_000000	Map 5	SUCCEEDED	100%	26 May 2016 14:50:17	26 May 2016 14:50:24	6 secs
00_000000	Map 4	SUCCEEDED	100%	26 May 2016 14:50:17	26 May 2016 14:50:22	5 secs
03_000000	Map 1	SUCCEEDED	100%	26 May 2016 14:50:17	26 May 2016 14:50:22	4 secs

2.2.8 Pig Query 3C

```
Coaches = LOAD '/tmp/Assignment_2/Coaches.csv' using PigStorage(',');

Coaches_raw = FILTER Coaches BY $0 != 'coachID';

Coach = FOREACH Coaches_raw GENERATE $0 as coachid, $1 as Year, $6 as Games, (int) $7 as Wins,
$8 as Losses, $9 as Ties;

grp_by_year = GROUP Coach BY (Year);

max_points = FOREACH grp_by_year GENERATE group as year_grp,

MAX(Coach.Wins) as max_Wins;

join_max_points = JOIN max_points by (year_grp,max_Wins), Coach by (Year, Wins);

max_player_points = FOREACH join_max_points GENERATE $0 as Year, $1 as Wins,

$2 as coachid, $4 as Games, $6 as Losses, $7 as Ties;

Masters = LOAD '/tmp/Assignment_2/Master.csv' using PigStorage(',');

Masters_raw = FILTER Masters BY $1 != 'coachID';

Master = FOREACH Masters_raw GENERATE $1 as coachid, $3 as firstName, $4 as lastName;

join_coach_master = JOIN max_player_points by coachid, Master by coachid;

max_player_info = FOREACH join_coach_master GENERATE $0 as year, $2 as coachid, $7 as
firstname,

$8 as lastname, $3 as Games, $1 as Wins, $4 as Loses, $5 as Ties;

AwardCoaches = LOAD '/tmp/Assignment_2/AwardsCoaches.csv' using PigStorage(',');

AwardCoaches_raw = FILTER AwardCoaches BY $0 != 'coachID';

AwardCoach = FOREACH AwardCoaches_raw GENERATE $0 as coachid;

grp_by_AwardCoach = GROUP AwardCoach BY (coachid);

Grp_count_award = FOREACH grp_by_AwardCoach GENERATE group as coachid_grp,

COUNT(AwardCoach.coachid) as Count_Award;

join_coach_master_award = JOIN max_player_info by coachid, Grp_count_award by coachid_grp;

join_coach_master_award_1 = FOREACH join_coach_master_award GENERATE $0 as year,

$2 as firstname, $3 as lastname, $4 as Games, $5 as Wins, $6 as Loses, $7 as Ties, $9 as Awards;

order_join_coach_master_award = ORDER join_coach_master_award_1 by Wins desc;

order_limit = LIMIT order_join_coach_master_award 1;

Dump order_limit;
```

2.2.8.1 Output

Results Download

```
(1995,Scotty,Bowman,82,62,13,7,2)
```

2.2.8.2 Log

```
HadoopVersion   PigVersion      UserId  StartedAt       FinishedAt      Features
2.7.1.2.3.2.0-2950      0.15.0.2.3.2.0-2950     yarn    2016-05-26 06:29:50     2016-05-26 06:32:22     HASH_JOIN,GR

Success!

Job Stats (time in seconds):
JobId   Maps    Reduces MaxMapTime      MinMapTime      AvgMapTime      MedianMapTime   MaxReduceTime   MinReduceTim
job_1464241803099_0050  1       1       3       3       3       3       3       3       3       3       AwardCoach,A
job_1464241803099_0051  1       1       4       4       4       4       3       3       3       3       Coach,Coache
job_1464241803099_0052  2       1       3       3       3       3       2       2       2       2       join_max_poi
job_1464241803099_0053  2       1       3       2       3       3       2       2       2       2       Master,Maste
job_1464241803099_0054  2       1       3       2       3       3       4       4       4       4       join_coach_m
job_1464241803099_0055  1       1       2       2       2       2       2       2       2       2       order_join_c
job_1464241803099_0056  1       1       2       2       2       2       2       2       2       2       order_join_c
job_1464241803099_0057  1       1       2       2       2       2       3       3       3       3       order_join_c

Input(s):
Successfully read 88 records (3469 bytes) from: "/tmp/Assignment_2/AwardsCoaches.csv"
Successfully read 1824 records (81287 bytes) from: "/tmp/Assignment_2/Coaches.csv"
Successfully read 7770 records from: "/tmp/Assignment_2/Master.csv"

Output(s):
Successfully stored 1 records (41 bytes) in: "hdfs://sandbox.hortonworks.com:8020/tmp/temp748822897/tmp-421113721"
```

```
2016-05-26 06:32:24,132 [main] INFO  org.apache.pig.Main - Pig script completed in 2 minutes, 36 seconds and 168 mil
```

2.2.9 Comparison table for 3C

	HIVE	PIG
No of Jobs	4	8
Maps	4	1
Reduces	2	2
Total Time	9 sec	2min 36 sec

2.3 Task 4

2.3.1 Hive Query 4A

```
SELECT t.name AS Teamname,
    sum(s.pts) AS Points,
    sum(s.g) AS Goals,
    sum(s.a) AS assists
FROM hockey_scoring s
JOIN hockey_teams t ON (s.tmid = t.tmid
            AND s.year = t.year
            AND s.lgid = t.lgid)
GROUP BY t.name
ORDER BY Points DESC;
```

2.3.1.1 Output

100%

Query Process Results (Status: SUCCEEDED) Save results...

Logs Results

Filter columns... previous next

teamname	points	goals	assists
Montreal Canadiens	50813	20447	30366
Boston Bruins	48677	19067	29610
New York Rangers	46805	18031	28774
Toronto Maple Leafs	46515	18154	28361
Detroit Red Wings	46253	17798	28455
Pittsburgh Penguins	32257	11969	20288
Philadelphia Flyers	32012	12020	19992

100%

Query Process Results (Status: SUCCEEDED) Save results...

Logs Results

Filter columns... previous next

teamname	points	goals	assists
Les Canadiens	59	59	0
Toronto Tecumsehs	59	59	0
Montreal Shamrocks	52	52	0
Finland	9	4	5

2.3.1.2 Log

100%

Query Process Results (Status: SUCCEEDED) Save results...

Logs Results

```
INFO : Session is already open
INFO :

INFO : Status: Running (Executing on YARN cluster with App id application_1464215212735_0133)

INFO : Map 1: 0/1 Map 4: 0/1 Reducer 2: 0/1 Reducer 3: 0/1
INFO : Map 1: 0(+1)/1 Map 4: 0/1 Reducer 2: 0/1 Reducer 3: 0/1
INFO : Map 1: 0(+1)/1 Map 4: 0(+1)/1 Reducer 2: 0/1 Reducer 3: 0/1
INFO : Map 1: 0(+1)/1 Map 4: 1/1 Reducer 2: 0/1 Reducer 3: 0/1
INFO : Map 1: 1/1 Map 4: 1/1 Reducer 2: 0(+1)/1 Reducer 3: 0/1
INFO : Map 1: 1/1 Map 4: 1/1 Reducer 2: 1/1 Reducer 3: 0(+1)/1
INFO : Map 1: 1/1 Map 4: 1/1 Reducer 2: 1/1 Reducer 3: 1/1
```

2.3.1.3 DAG Details

DAG Details

Download data

Application Id	application_1464215212735_0133
Entity Id	dag_1464215212735_0133_7
User	hive
Status	SUCCEEDED
Start Time	26 May 2016 14:52:46
End Time	26 May 2016 14:52:51
Duration	5 secs

2.3.1.4 Task Details

All DAGs / DAG [hive_20160526045245_a29ca826-e00e-4116-a865-9c51eabea80f:16]

DAG Details | DAG Counters | Graphical View | All Vertices | All Tasks | All TaskAttempts

Last refreshed at **26 May 2016 05:34:48** Refresh

RegEx or Column1, Column2... :RegEx Search

First 1 Last - 1 Rows 25

Task Index	Vertex Name	Status	Progress	Start Time	End Time	Duration
03_000000	Reducer 3	SUCCEEDED	100%	26 May 2016 14:52:51	26 May 2016 14:52:51	352 ms
02_000000	Reducer 2	SUCCEEDED	100%	26 May 2016 14:52:51	26 May 2016 14:52:51	205 ms
01_000000	Map 1	SUCCEEDED	100%	26 May 2016 14:52:46	26 May 2016 14:52:51	4 secs
00_000000	Map 4	SUCCEEDED	100%	26 May 2016 14:52:46	26 May 2016 14:52:50	3 secs

2.3.2 Pig Query 4A

```
Scorings = LOAD '/tmp/Assignment_2/Scoring.csv' using PigStorage(',');

Scorings_raw = FILTER Scorings BY $0 != 'playerID';

Scoring = FOREACH Scorings_raw GENERATE $1 as Year, $3 as tmID,$4 as lgID, $7 as g, $8 as a, $9 as Pts;

Teams = LOAD '/tmp/Assignment_2/Teams.csv' using PigStorage(',');

Teams_raw = FILTER Teams BY $0 > 0;

Team = FOREACH Teams_raw GENERATE $0 as Year, $1 as lgID, $2 as tmID, $18 as name;

team_scoring = JOIN Scoring BY (lgID,tmID,Year), Team BY (lgID,tmID,Year);

team_final = FOREACH team_scoring GENERATE $3 as G,$4 as A,$5 as Pts, $9 as team_name;

grp_team_final = GROUP team_final BY (team_name);

total_scoring = FOREACH grp_team_final GENERATE group as team_name, SUM(team_final.Pts) as Pts,

SUM(team_final.G) as G, SUM(team_final.A) as A;

order_total_scoring = ORDER total_scoring by Pts desc;

dump order_total_scoring;
```

2.3.2.1 Output

Results Download

```
(Montreal Canadiens,50813.0,20447.0,30366.0)
(Boston Bruins,48677.0,19067.0,29610.0)
(New York Rangers,46805.0,18031.0,28774.0)
(Toronto Maple Leafs,46515.0,18154.0,28361.0)
(Detroit Red Wings,46253.0,17798.0,28455.0)
(Pittsburgh Penguins,32257.0,11969.0,20288.0)
(Philadelphia Flyers,32012.0,12020.0,19992.0)
(Los Angeles Kings,30148.0,11260.0,18888.0)
(St. Louis Blues,29500.0,11048.0,18452.0)
(Chicago Black Hawks,29495.0,11473.0,18022.0)
(Buffalo Sabres,28723.0,10825.0,17898.0)
(Edmonton Oilers,28347.0,10587.0,17760.0)
(Vancouver Canucks,27573.0,10344.0,17229.0)
(New York Islanders,26846.0,10072.0,16774.0)
(Washington Capitals,24982.0,9377.0,15605.0)
(Calgary Flames,22221.0,8323.0,13898.0)
(Winnipeg Jets,19330.0,7253.0,12077.0)
(New Jersey Devils,19130.0,7077.0,12053.0)
(Quebec Nordiques,18576.0,6899.0,11677.0)
(Minnesota North Stars,17745.0,6690.0,11055.0)
(Chicago Blackhawks,16246.0,6023.0,10223.0)
(Ottawa Senators,14962.0,6567.0,8395.0)
(San Jose Sharks,12813.0,4745.0,8068.0)
(Hartford Whalers,12515.0,4704.0,7811.0)
(Tampa Bay Lightning,11489.0,4262.0,7227.0)
(Dallas Stars,11085.0,4072.0,7013.0)
(Colorado Avalanche,10659.0,3893.0,6766.0)
(Florida Panthers,10029.0,3737.0,6292.0)
(Phoenix Coyotes,9433.0,3459.0,5974.0)
```

2.3.2.2 Log

```
HadoopVersion   PigVersion      UserId  StartedAt       FinishedAt      Features
2.7.1.2.3.2.0-2950      0.15.0.2.3.2.0-2950     yarn    2016-05-26 06:34:28     2016-05-26 06:35:49     HASH_JOIN,GR(

Success!

Job Stats (time in seconds):
JobId   Maps    Reduces MaxMapTime      MinMapTime      AvgMapTime      MedianMapTime   MaxReduceTime   MinReduceTim
job_1464241803099_0059  2       1       3       3       3       3       3       3       3       3       Scoring,Scor
job_1464241803099_0060  1       1       3       3       3       3       2       2       2       2       grp_team_fin
job_1464241803099_0061  1       1       2       2       2       2       2       2       2       2       order_total_
job_1464241803099_0062  1       1       2       2       2       2       2       2       2       2       order_total_

Input(s):
Successfully read 1529 records from: "/tmp/Assignment_2/Teams.csv"
Successfully read 45975 records from: "/tmp/Assignment_2/Scoring.csv"

Output(s):
Successfully stored 104 records (5255 bytes) in: "hdfs://sandbox.hortonworks.com:8020/tmp/temp-1973846067/tmp-682756

Counters:
Total records written : 104
Total bytes written : 5255
Spillable Memory Manager spill count : 0
Total bags proactively spilled: 0
Total records proactively spilled: 0
```

```
2016-05-26 06:35:50,615 [main] INFO  org.apache.pig.Main - Pig script completed in 1 minute, 24 seconds and 701 mill
```

2.3.3 Comparison Table for 4a

	HIVE	PIG
No of Jobs	2	4
Maps	2	1
Reduces	2	2
Total Time	5sec	1min 24 sec

2.3.4 Hive Query 4 B

```
SELECT t.name AS Team_name,
      m.firstname AS First_Name,
      m.lastname AS Last_Name,
      s.year AS YEAR,
      s.pts AS Points,
      s.g AS Goals,
      s.a AS Assist
FROM hockey_scoring s
JOIN
  (SELECT tmid,
         max(pts) pts
   FROM hockey_scoring
   GROUP BY tmid) b ON (s.tmid = b.tmid
                    AND s.pts = b.pts)
JOIN hockey_master m ON (m.playerid = s.playerid)
JOIN hockey_teams t ON (t.tmid = s.tmid
                    AND t.year = s.year)
ORDER BY Team_name;
```

2.3.4.1 Output

100%

Query Process Results (Status: SUCCEEDED) Save results...

Logs Results

Filter columns... previous next

team_name	first_name	last_name	year	points	goals	assist
228th Battalion	Eddie	Oatman	1916	22	17	5
Alberta Oilers	Jim	Harrison	1972	86	39	47
Anaheim Ducks	Corey	Perry	2010	98	50	48
Atlanta Flames	Bob	MacMillan	1978	108	37	71
Atlanta Thrashers	Marian	Hossa	2006	100	43	57
Birmingham Bulls	Mark	Napier	1976	96	60	36
Boston Bruins	Phil	Esposito	1970	152	76	76
Brooklyn Americans	Tom	Anderson	1941	41	12	29
Buffalo Sabres	Pat	LaFontaine	1992	148	53	95
Calgary Cowboys	Danny	Lawson	1975	96	44	52
Calgary Flames	Kent	Nilsson	1980	131	49	82
Calgary Tigers	Harry	Oliver	1923	34	22	12
California Golden Seals	Joey	Johnston	1973	67	27	40
Carolina Hurricanes	Eric	Staal	2005	100	45	55

Toronto Blueshirts	Jack	Walker	1913	36	20	16
Toronto Maple Leafs	Doug	Gilmour	1992	127	32	95
Toronto Ontarios	Jack	McDonald	1913	35	27	8
Toronto St. Patricks	Babe	Dye	1924	46	38	8
Toronto Tecumsehs	Harry	Smith	1912	14	14	0
Toronto Toros	Vaclav	Nedomansky	1975	98	56	42
Vancouver Blazers	Bryan	Campbell	1973	89	27	62
Vancouver Canucks	Henrik	Sedin	2009	112	29	83
Vancouver Maroons	Mickey	MacKay	1922	40	28	12
Vancouver Maroons	Mickey	MacKay	1924	33	27	6
Vancouver Millionaires	Gord	Roberts	1916	53	43	10
Victoria Aristocrats	Albert	Kerr	1913	31	20	11
Victoria Aristocrats	Tommy	Dunderdale	1919	33	26	7
Victoria Cougars	Frank	Fredrickson	1924	30	22	8
Victoria Cougars	Frank	Fredrickson	1922	55	39	16
Washington Capitals	Dennis	Maruk	1981	136	60	76
Winnipeg Jets	Bobby	Hull	1974	142	77	65
Winnipeg Jets	Teemu	Selanne	1992	132	76	56
Winnipeg Jets	Blake	Wheeler	2011	64	17	47

2.3.4.2 Log

100%

Query Process Results (Status: SUCCEEDED) Save results...

Logs Results

```
INFO : Session is already open
INFO :

INFO : Status: Running (Executing on YARN cluster with App id application_1464215212735_0133)

INFO : Map 1: 0/1 Map 4: 0/1 Map 5: 0/1 Map 6: 0/1 Reducer 2: 0/1 Reducer 3: 0/1
INFO : Map 1: 0/1 Map 4: 0/1 Map 5: 0/1 Map 6: 0(+1)/1 Reducer 2: 0/1 Reducer 3: 0/1
INFO : Map 1: 0/1 Map 4: 0(+1)/1 Map 5: 0/1 Map 6: 0(+1)/1 Reducer 2: 0/1 Reducer 3: 0/1
INFO : Map 1: 0(+1)/1 Map 4: 0(+1)/1 Map 5: 0(+1)/1 Map 6: 0(+1)/1 Reducer 2: 0/1 Reducer 3: 0/1
INFO : Map 1: 0(+1)/1 Map 4: 0(+1)/1 Map 5: 0(+1)/1 Map 6: 1/1 Reducer 2: 0/1 Reducer 3: 0/1
INFO : Map 1: 0(+1)/1 Map 4: 0(+1)/1 Map 5: 1/1 Map 6: 1/1 Reducer 2: 0/1 Reducer 3: 0/1
INFO : Map 1: 1/1 Map 4: 1/1 Map 5: 1/1 Map 6: 1/1 Reducer 2: 0/1 Reducer 3: 0/1
INFO : Map 1: 1/1 Map 4: 1/1 Map 5: 1/1 Map 6: 1/1 Reducer 2: 0(+1)/1 Reducer 3: 0/1
INFO : Map 1: 1/1 Map 4: 1/1 Map 5: 1/1 Map 6: 1/1 Reducer 2: 1/1 Reducer 3: 0/1
INFO : Map 1: 1/1 Map 4: 1/1 Map 5: 1/1 Map 6: 1/1 Reducer 2: 1/1 Reducer 3: 0(+1)/1
INFO : Map 1: 1/1 Map 4: 1/1 Map 5: 1/1 Map 6: 1/1 Reducer 2: 1/1 Reducer 3: 1/1
```

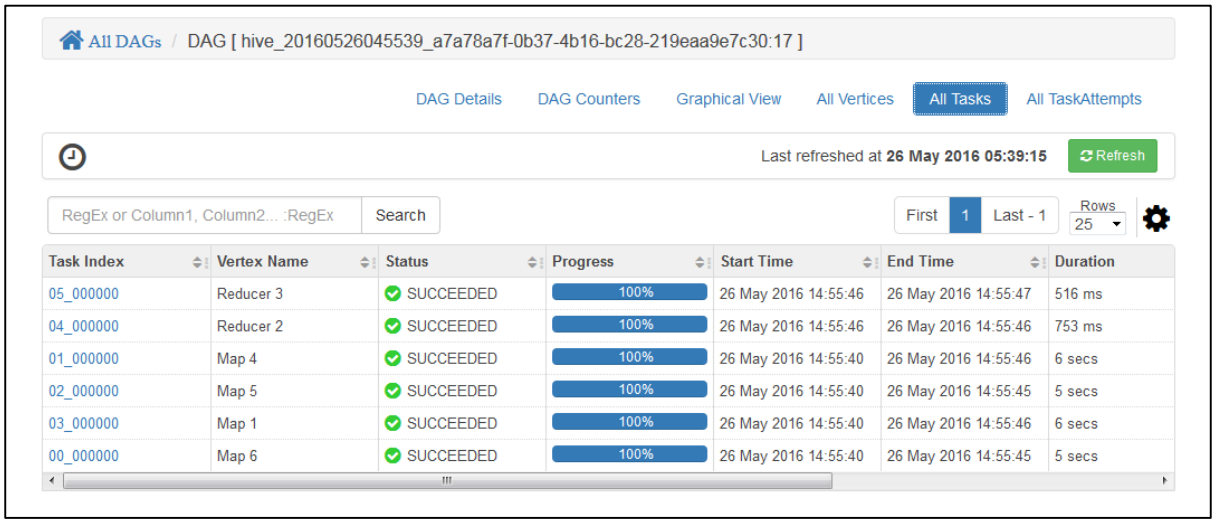
2.3.4.3 DAG Details

DAG Details

Download data

Application Id	application_1464215212735_0133
Entity Id	dag_1464215212735_0133_8
User	hive
Status	SUCCEEDED
Start Time	26 May 2016 14:55:39
End Time	26 May 2016 14:55:47
Duration	7 secs

2.3.4.4 Task Detail



Task Index	Vertex Name	Status	Progress	Start Time	End Time	Duration
05_000000	Reducer 3	SUCCEEDED	100%	26 May 2016 14:55:46	26 May 2016 14:55:47	516 ms
04_000000	Reducer 2	SUCCEEDED	100%	26 May 2016 14:55:46	26 May 2016 14:55:46	753 ms
01_000000	Map 4	SUCCEEDED	100%	26 May 2016 14:55:40	26 May 2016 14:55:46	6 secs
02_000000	Map 5	SUCCEEDED	100%	26 May 2016 14:55:40	26 May 2016 14:55:45	5 secs
03_000000	Map 1	SUCCEEDED	100%	26 May 2016 14:55:40	26 May 2016 14:55:46	6 secs
00_000000	Map 6	SUCCEEDED	100%	26 May 2016 14:55:40	26 May 2016 14:55:45	5 secs

2.3.5 Pig Query 4B

```
Scorings = LOAD '/tmp/Assignment_2/Scoring.csv' using PigStorage(',');

Scorings_raw = FILTER Scorings BY $0 != 'playerID';

Scoring = FOREACH Scorings_raw GENERATE $0 as playerid, $1 as Year, $3 as tmID, $7 as g,

$8 as a, $9 as Pts;

grp_by_tmID = GROUP Scoring BY (tmID);

sum_points = FOREACH grp_by_tmID  GENERATE group as tmID_grp,

MAX(Scoring.Pts) as max_points;

join_max_points = JOIN sum_points by (tmID_grp, max_points), Scoring by (tmID, Pts);

max_player_points = FOREACH join_max_points GENERATE $0 as tmID, $1 as Points,

$2 as playerid, $3 as Year, $5 as Goals, $6 as Assists;

Teams = LOAD '/tmp/Assignment_2/Teams.csv' using PigStorage(',');

Teams_raw = FILTER Teams BY $0 > 0;

Team = FOREACH Teams_raw GENERATE $0 As Year, $2 as tmID, $18 as name;

join_player = JOIN max_player_points by (Year,tmID), Team by (Year,tmID);

join_team_Scoring = FOREACH join_player GENERATE $0 as tmID, $1 as Points,

$2 as playerid, $3 as Year, $4 as Goals, $5 as Assists, $8 as TeamName;

Masters = LOAD '/tmp/Assignment_2/Master.csv' using PigStorage(',');

Masters_raw = FILTER Masters BY $0 != 'playerID';

Master = FOREACH Masters_raw GENERATE $0 as playerid, $3 as firstName, $4 as lastName;
```

Final_answer = JOIN join_team_Scoring by playerid, Master by playerid;

Formatted_Final_Answer = FOREACH Final_answer GENERATE $6 as TeamName, $8 as FirstName, $9 as LastName,

$3 as Year, $1 as Points, $4 as Goals, $5 as Assists;

order_Formatted_Final_Answer = ORDER Formatted_Final_Answer by TeamName;

Dump order_Formatted_Final_Answer;

2.3.5.1 Output

Results Download

```
(228th Battalion,Eddie,Oatman,1916,22.0,17,5)
(Alberta Oilers,Jim,Harrison,1972,86.0,39,47)
(Anaheim Ducks,Corey,Perry,2010,98.0,50,48)
(Atlanta Flames,Bob,MacMillan,1978,108.0,37,71)
(Atlanta Thrashers,Marian,Hossa,2006,100.0,43,57)
(Birmingham Bulls,Mark,Napier,1976,96.0,60,36)
(Boston Bruins,Phil,Esposito,1970,152.0,76,76)
(Brooklyn Americans,Tom,Anderson,1941,41.0,12,29)
(Buffalo Sabres,Pat,LaFontaine,1992,148.0,53,95)
(Calgary Cowboys,Danny,Lawson,1975,96.0,44,52)
(Calgary Flames,Kent,Nilsson,1980,131.0,49,82)
(Calgary Tigers,Harry,Oliver,1923,34.0,22,12)
(California Golden Seals,Joey,Johnston,1973,67.0,27,40)
(Carolina Hurricanes,Eric,Staal,2005,100.0,45,55)
(Chicago Blackhawks,Denis,Savard,1987,131.0,44,87)
(Chicago Cougars,Bob,Sicinski,1972,88.0,25,63)
(Cincinnati Stingers,Robbie,Ftorek,1978,116.0,39,77)
(Cleveland Barons,Dennis,Maruk,1976,78.0,28,50)
(Cleveland Crusaders,Ron,Ward,1975,82.0,32,50)
(Cobalt Silver Kings,Harry,Smith,1909,28.0,28,0)
(Colorado Avalanche,Joe,Sakic,1995,120.0,51,69)
(Colorado Rockies,Wilf,Paiement,1977,87.0,31,56)
(Columbus Blue Jackets,Rick,Nash,2008,79.0,40,39)
(Czechoslovakia,Vladislav,Vlcek,1977,9.0,2,7)
(Dallas Stars,Mike,Modano,1993,93.0,50,43)
(Denver Spurs/Ottawa Civics,Ralph,Backstrom,1975,50.0,21,29)
(Detroit Cougars,Carson,Cooper,1929,36.0,18,18)
(Detroit Falcons,Ebbie,Goodfellow,1930,48.0,25,23)
(Detroit Red Wings,Steve,Yzerman,1988,155.0,65,90)
```

2.3.5.2

2.3.5.3 Log

```
HadoopVersion   PigVersion      UserId  StartedAt       FinishedAt      Features
2.7.1.2.3.2.0-2950      0.15.0.2.3.2.0-2950     yarn    2016-05-26 06:38:14     2016-05-26 06:40:25     HASH_JOIN,GR

Success!

Job Stats (time in seconds):
JobId   Maps    Reduces MaxMapTime      MinMapTime      AvgMapTime      MedianMapTime   MaxReduceTime   MinReduceTim
job_1464241803099_0064  1       1       3       3       3       3       2       2       2       2       Scoring,Scor
job_1464241803099_0065  2       1       3       2       3       3       3       3       3       3       join_max_poi
job_1464241803099_0066  2       1       4       3       3       3       4       4       4       4       Team,Teams,T
job_1464241803099_0067  2       1       4       3       3       3       3       3       3       3       Final_answer
job_1464241803099_0068  1       1       2       2       2       2       2       2       2       2       order_Format
job_1464241803099_0069  1       1       3       3       3       3       2       2       2       2       order_Format

Input(s):
Successfully read 45975 records (3273095 bytes) from: "/tmp/Assignment_2/Scoring.csv"
Successfully read 1529 records from: "/tmp/Assignment_2/Teams.csv"
Successfully read 7770 records from: "/tmp/Assignment_2/Master.csv"

Output(s):
Successfully stored 123 records (7522 bytes) in: "hdfs://sandbox.hortonworks.com:8020/tmp/temp1840634538/tmp-1065571
```

```
2016-05-26 06:40:26,744 [main] INFO  org.apache.pig.Main - Pig script completed in 2 minutes, 16 seconds and 236 mil
```

2.3.6 Comparison Table For 4B

	HIVE	PIG
No of Jobs	2	6
Maps	4	2
Reduces	2	1
Total Time	7sec	2min 16 sec

3 Task 5:

3.1.1.1 Hortonworks shell

```
EgzTFVSS0U -O Query.pig
--2016-05-26 11:36:20--  https://drive.google.com/drive/folders/0B1mL7jdRfAbaZF9
aeEgzTFVSS0U
Resolving drive.google.com... 216.58.220.110, 2404:6800:4006:801::200e
Connecting to drive.google.com|216.58.220.110|:443... connected.
HTTP request sent, awaiting response... 302 Moved Temporarily
Location: https://accounts.google.com/ServiceLogin?service=wise&passive=1209600&
continue=https://drive.google.com/drive/folders/0B1mL7jdRfAbaZF9aeEgzTFVSS0U&fol
lowup=https://drive.google.com/drive/folders/0B1mL7jdRfAbaZF9aeEgzTFVSS0U [follo
wing]
--2016-05-26 11:36:20--  https://accounts.google.com/ServiceLogin?service=wise&p
assive=1209600&continue=https://drive.google.com/drive/folders/0B1mL7jdRfAbaZF9a
eEgzTFVSS0U&followup=https://drive.google.com/drive/folders/0B1mL7jdRfAbaZF9aeEg
zTFVSS0U
Resolving accounts.google.com... 216.58.220.109, 2404:6800:4006:801::200d
Connecting to accounts.google.com|216.58.220.109|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: unspecified [text/html]
Saving to: "Query.pig"

    [ <=>                                   ] 55,479      --.-K/s    in 0.03s

2016-05-26 11:36:21 (2.11 MB/s) - "Query.pig" saved [55479]

[hdfs@sandbox ~]$ _
```

3.1.1.1.1 Without Tez

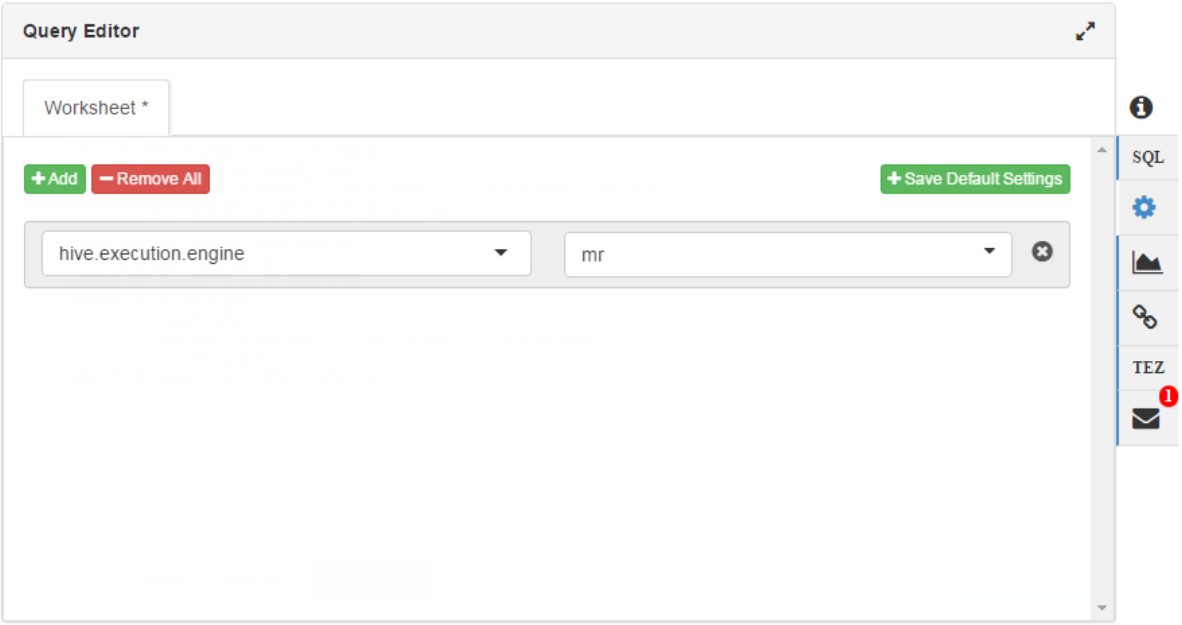
```
    [ <=>                                   ] 55,479      --.-K/s    in 0.03s

2016-05-26 11:36:21 (2.11 MB/s) - "Query.pig" saved [55479]

[hdfs@sandbox ~]$ pig Query.pig
WARNING: Use "yarn jar" to launch YARN applications.
16/05/26 11:37:47 INFO pig.ExecTypeProvider: Trying ExecType : LOCAL
16/05/26 11:37:47 INFO pig.ExecTypeProvider: Trying ExecType : MAPREDUCE
16/05/26 11:37:47 INFO pig.ExecTypeProvider: Picked MAPREDUCE as the ExecType
2016-05-26 11:37:47,666 [main] INFO  org.apache.pig.Main - Apache Pig version 0.
15.0.2.3.2.0-2950 (rexported) compiled Sep 30 2015, 19:39:20
2016-05-26 11:37:47,667 [main] INFO  org.apache.pig.Main - Logging error message
s to: /home/hdfs/pig_1464262667665.log
2016-05-26 11:37:48,217 [main] INFO  org.apache.pig.impl.util.Utils - Default bo
otup file /home/hdfs/.pigbootup not found
2016-05-26 11:37:48,317 [main] ERROR org.apache.pig.impl.PigContext - Undefined
parameter : p
2016-05-26 11:37:48,331 [main] ERROR org.apache.pig.Main - ERROR 2997: Encounter
ed IOException. org.apache.pig.tools.parameters.ParameterSubstitutionException:
Undefined parameter : p
Details at logfile: /home/hdfs/pig_1464262667665.log
2016-05-26 11:37:48,347 [main] INFO  org.apache.pig.Main - Pig script completed
in 799 milliseconds (799 ms)
[hdfs@sandbox ~]$ _
```

With Tez

```
Details at logfile: /home/hdfs/pig_1464262667665.log
2016-05-26 11:37:48,347 [main] INFO  org.apache.pig.Main - Pig script completed
in 799 milliseconds (799 ms)
[hdfs@sandbox ~]$ pig -x tez Query.pig
WARNING: Use "yarn jar" to launch YARN applications.
16/05/26 11:38:49 INFO pig.ExecTypeProvider: Trying ExecType : LOCAL
16/05/26 11:38:49 INFO pig.ExecTypeProvider: Trying ExecType : MAPREDUCE
16/05/26 11:38:49 INFO pig.ExecTypeProvider: Trying ExecType : TEZ_LOCAL
16/05/26 11:38:49 INFO pig.ExecTypeProvider: Trying ExecType : TEZ
16/05/26 11:38:49 INFO pig.ExecTypeProvider: Picked TEZ as the ExecType
2016-05-26 11:38:50,009 [main] INFO  org.apache.pig.Main - Apache Pig version 0.
15.0.2.3.2.0-2950 (rexported) compiled Sep 30 2015, 19:39:20
2016-05-26 11:38:50,010 [main] INFO  org.apache.pig.Main - Logging error message
s to: /home/hdfs/pig_1464262730008.log
2016-05-26 11:38:50,543 [main] INFO  org.apache.pig.impl.util.Utils - Default bo
otup file /home/hdfs/.pigbootup not found
2016-05-26 11:38:50,666 [main] ERROR org.apache.pig.impl.PigContext - Undefined
parameter : p
2016-05-26 11:38:50,683 [main] ERROR org.apache.pig.Main - ERROR 2997: Encounter
ed IOException. org.apache.pig.tools.parameters.ParameterSubstitutionException:
Undefined parameter : p
Details at logfile: /home/hdfs/pig_1464262730008.log
2016-05-26 11:38:50,699 [main] INFO  org.apache.pig.Main - Pig script completed
in 813 milliseconds (813 ms)
[hdfs@sandbox ~]$ _
```

3.1.1.2 Ambari For Hive

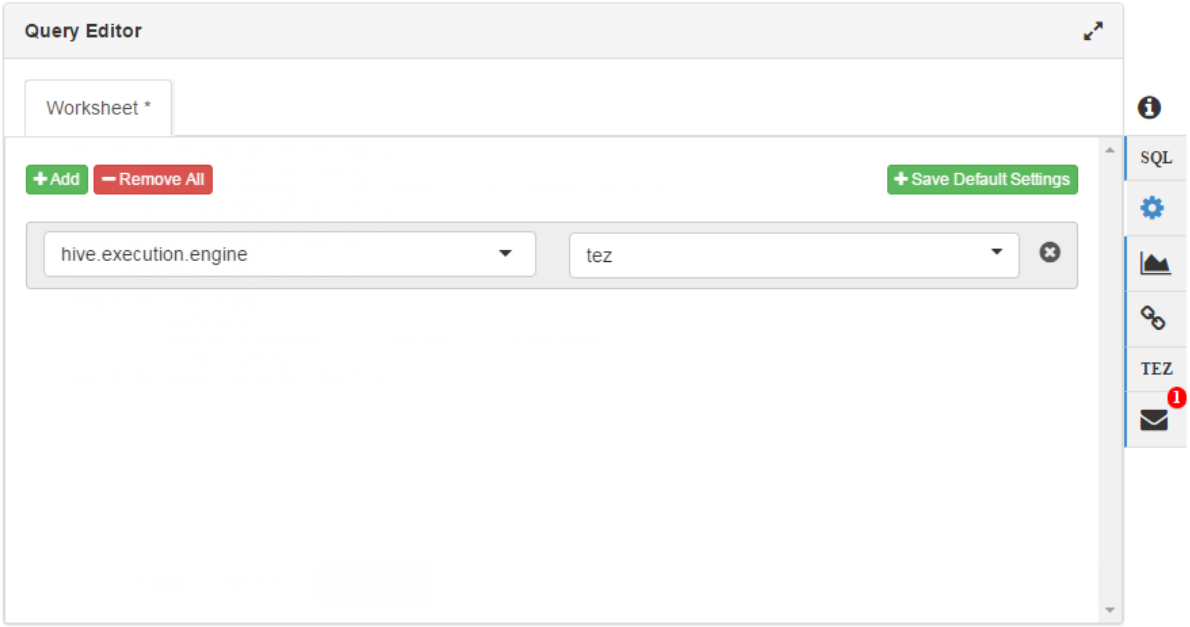
Map Reduce:



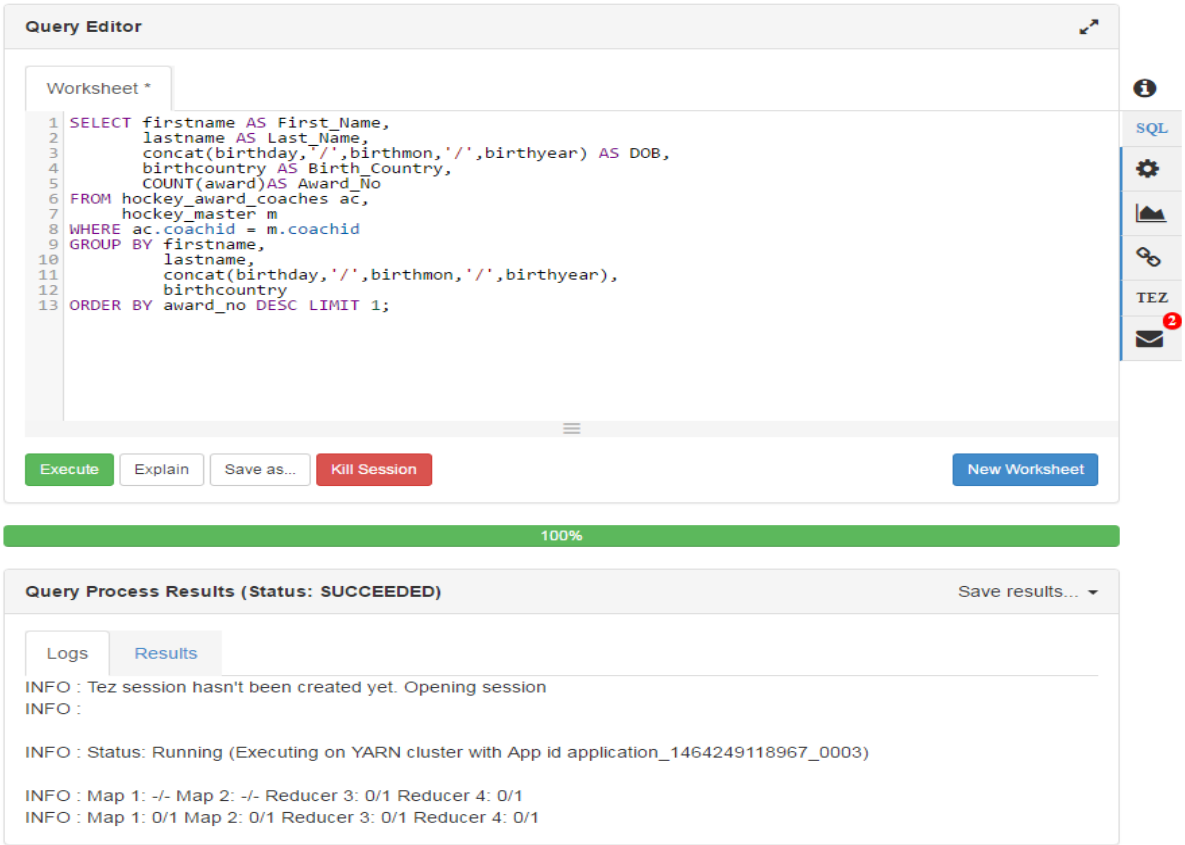
Query Process Results (Status: Succeeded) Save results...

Logs Results

```
INFO : Execution completed successfully
INFO : MapredLocal task succeeded
INFO : Number of reduce tasks not specified. Estimated from input data size: 1
INFO : In order to change the average load for a reducer (in bytes):
INFO : set hive.exec.reducers.bytes.per.reducer=<number>
INFO : In order to limit the maximum number of reducers:
INFO : set hive.exec.reducers.max=<number>
INFO : In order to set a constant number of reducers:
INFO : set mapreduce.job.reduces=<number>
INFO : number of splits:1
INFO : Submitting tokens for job: job_1464249118967_0001
INFO : The url to track the job: http://sandbox.hortonworks.com:8088/proxy/application_1464249118967_0001/
INFO : Starting Job = job_1464249118967_0001, Tracking URL =
http://sandbox.hortonworks.com:8088/proxy/application_1464249118967_0001/
INFO : Kill Command = /usr/hdp/2.3.2.0-2950/hadoop/bin/hadoop job -kill job_1464249118967_0001
INFO : Hadoop job information for Stage-2: number of mappers: 1; number of reducers: 1
INFO : 2016-05-26 08:14:00,123 Stage-2 map = 0%, reduce = 0%
INFO : 2016-05-26 08:14:06,324 Stage-2 map = 100%, reduce = 0%, Cumulative CPU 1.77 sec
INFO : 2016-05-26 08:14:12,503 Stage-2 map = 100%, reduce = 100%, Cumulative CPU 3.11 sec
INFO : MapReduce Total cumulative CPU time: 3 seconds 110 msec
INFO : Ended Job = job_1464249118967_0001
INFO : Number of reduce tasks determined at compile time: 1
INFO : In order to change the average load for a reducer (in bytes):
INFO : set hive.exec.reducers.bytes.per.reducer=<number>
INFO : In order to limit the maximum number of reducers:
INFO : set hive.exec.reducers.max=<number>
INFO : In order to set a constant number of reducers:
INFO : set mapreduce.job.reduces=<number>
INFO : number of splits:1
INFO : Submitting tokens for job: job_1464249118967_0002
INFO : The url to track the job: http://sandbox.hortonworks.com:8088/proxy/application_1464249118967_0002/
INFO : Starting Job = job_1464249118967_0002, Tracking URL =
http://sandbox.hortonworks.com:8088/proxy/application_1464249118967_0002/
INFO : Kill Command = /usr/hdp/2.3.2.0-2950/hadoop/bin/hadoop job -kill job_1464249118967_0002
INFO : Hadoop job information for Stage-3: number of mappers: 1; number of reducers: 1
INFO : 2016-05-26 08:14:19,042 Stage-3 map = 0%, reduce = 0%
INFO : 2016-05-26 08:14:24,172 Stage-3 map = 100%, reduce = 0%, Cumulative CPU 0.8 sec
```



3.1.1.2.1 Enabling TEZ



3.1.1.2.2 DAG Details

DAG Details

Download data

Application Id	application_1464249118967_0003
Entity Id	dag_1464249118967_0003_1
User	hive
Status	SUCCEEDED
Start Time	26 May 2016 18:18:53
End Time	26 May 2016 18:19:07
Duration	14 secs

3.1.1.2.3 Time for individual Map Job

All DAGs / DAG [hive_20160526081809_a403bad3-244a-4874-8162-50530007fd9b:1]

DAG Details | DAG Counters | Graphical View | All Vertices | All Tasks | All TaskAttempts

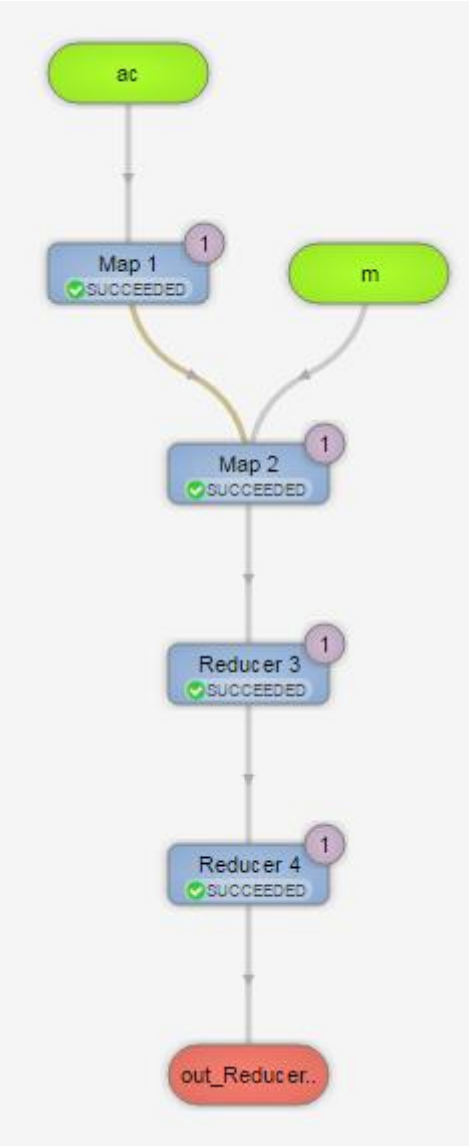
Last refreshed at **26 May 2016 09:06:01** Refresh

RegEx or Column1, Column2... :RegEx Search

First 1 Last - 1 Rows 25

Task Index	Vertex Name	Status	Progress	Start Time	End Time	Duration
03_000000	Reducer 4	SUCCEEDED	100%	26 May 2016 18:19:06	26 May 2016 18:19:07	945 ms
02_000000	Reducer 3	SUCCEEDED	100%	26 May 2016 18:19:06	26 May 2016 18:19:06	390 ms
01_000000	Map 2	SUCCEEDED	100%	26 May 2016 18:18:59	26 May 2016 18:19:06	6 secs
00_000000	Map 1	SUCCEEDED	100%	26 May 2016 18:18:59	26 May 2016 18:19:05	6 secs

3.1.1.2.4 Graphical View



3.1.1.3 Cost Based Optimization

Query Editor

Worksheet

```
SELECT firstname AS First_Name,
       lastname AS Last_Name,
       concat(birthday,'/',birthmon,'/',birthyear) AS DOB,
       birthcountry AS Birth_Country,
       COUNT(award)AS Award_No
FROM hockey_award_coaches ac,
     hockey_master m
WHERE ac.coachid = m.coachid
GROUP BY firstname,
         lastname,
         concat(birthday,'/',birthmon,'/',birthyear),
         birthcountry
ORDER BY award_no DESC LIMIT 1;
```

Execute | Explain | Save as... | Kill Session | New Worksheet

100%

Query Process Results (Status: SUCCEEDED) Save results...

Logs | Results

Filter columns... previous next

first_name	last_name	dob	birth_country	award_no
Dick	Irvin	19/7/1892	Canada	9

Query Process Results (Status: Succeeded)

Explain

- Plan not optimized by CBO.
- Vertex dependency in root stage
- Map 2 <- Map 1 (BROADCAST_EDGE)
- Reducer 3 <- Map 2 (SIMPLE_EDGE)
- Reducer 4 <- Reducer 3 (SIMPLE_EDGE)
- Stage-0

Query Editor

Worksheet

```
1 ANALYZE TABLE hockey_master COMPUTE STATISTICS;
```

SQL

TEZ

Execute | Explain | Save as... | Kill Session | New Worksheet

100%

Query Process Results (Status: SUCCEEDED) Save results...

Logs | Results

Filter columns... | previous | next

Query Editor

Worksheet

```
ANALYZE TABLE hockey_master COMPUTE STATISTICS FOR COLUMNS coachid, firstname, lastname, birthyear,
birthmon, birthcountry;
```

SQL

TEZ

Execute | Explain | Save as... | Kill Session | New Worksheet

100%

Query Process Results (Status: SUCCEEDED)

Save results...

Logs | Results

```
INFO : Session is already open
INFO :

INFO : Status: Running (Executing on YARN cluster with App id application_1464249118967_0005)

INFO : Map 1: -/- Reducer 2: 0/1
INFO : Map 1: 0/1 Reducer 2: 0/1
INFO : Map 1: 0(+1)/1 Reducer 2: 0/1
INFO : Map 1: 1/1 Reducer 2: 0/1
INFO : Map 1: 1/1 Reducer 2: 0(+1)/1
INFO : Map 1: 1/1 Reducer 2: 1/1
```

Query Editor

Worksheet

```
1 ANALYZE TABLE hockey_award_coaches COMPUTE STATISTICS;
```

SQL

TEZ

Execute | Explain | Save as... | Kill Session | New Worksheet

100%

Query Process Results (Status: SUCCEEDED)

Save results...

Logs | Results

```
INFO : Session is already open
INFO :

INFO : Status: Running (Executing on YARN cluster with App id application_1464249118967_0005)

INFO : Map 1: 0/1
INFO : Map 1: 0(+1)/1
INFO : Map 1: 1/1
INFO : Table default.hockey_award_coaches stats: [numFiles=1, numRows=88, totalSize=3073, rawDataSize=2985]
```

Query Editor

Worksheet

```
1 ANALYZE TABLE hockey_award_coaches COMPUTE STATISTICS FOR COLUMNS coachid, award;
```

SQL

TEZ

Execute | Explain | Save as... | Kill Session | New Worksheet

100%

Query Process Results (Status: SUCCEEDED)

Save results...

Logs | Results

```
INFO : Session is already open
INFO :

INFO : Status: Running (Executing on YARN cluster with App id application_1464249118967_0005)

INFO : Map 1: 0/1 Reducer 2: 0/1
INFO : Map 1: 0(+1)/1 Reducer 2: 0/1
INFO : Map 1: 1/1 Reducer 2: 0(+1)/1
INFO : Map 1: 1/1 Reducer 2: 1/1
```

4 Big Data Report

4.1 Introduction

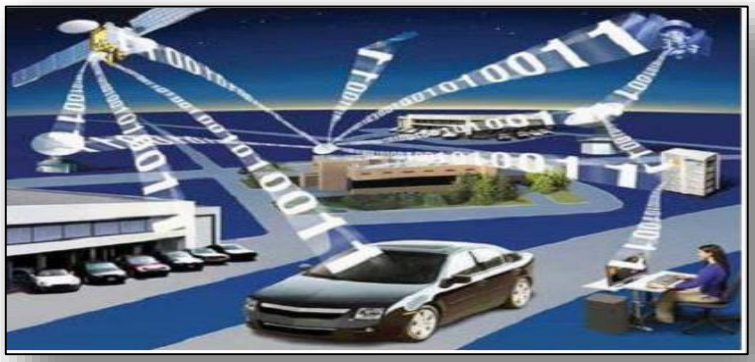
This paper describes big data mining concepts that facilitate the extraction of valuable information from a collection of big data from various dimensions, particularly spatial data (in this case). Big data can be seen as a complex set of data that revolves around four 'V' Viz. Volume, Variety, Veracity and Velocity (Shuliang, Gangyi & Ming, 2014). Big data mining often leads to privacy issues because data miners have access to data of various individuals which makes them in charge of all the information at hand. This paper also discusses privacy frameworks which allow increased data privacy by treating data miners and sensitive data as two different entities and only allowing limited data access.

4.2 Current state of the art

4.2.1 Big Spatial Data Mining

Spatial data is seen as a basis for big data. This data relates to space which accounts for 80% of the total data. It is through spatial data that we can describe a specific geographic orientation of any object in this world (Shuliang, Gangyi & Ming, 2014). Spatial data is used to monitor the earthly activities and used by data intelligence applications to predict things. For instance, the weather updates and likelihood of any natural disasters are inferred from the research in trends of spatial data over the time and and any anomalies indicate such outcomes. Thus, importance of monitoring spatial data is crucial for the living conditions. The satellites send enormous amount of data to earth every minute which contains information about our geography and natural happenings, traffic, people, etc.

(Fig: Satellite data and services)



This data allows us to gain valuable information about geospatial objects and utilize this knowledge in positioning and locating things from anywhere around the world. This

knowledge is then transcended into data intelligence to make our lives safer and easier. For instance, the data about vehicles transiting road each day allows data scientists to come up with trends that allow them to focus on means to reduce traffic congestions and offer alternative solutions which in turn help us live safer.

The current issues that exist with spatial data are:
1. Garbage: Majority of this data is junk that cannot be used to make any conclusion. This data is further filtered down to find some conclusive data.

2. Contamination: Almost 95% of the data is inconsistent and hence contaminated. This is because of the inconsistencies, repetitions, errors and incomplete data that is collected.

3. Difficult to use: Having such a large volume of data with 95% contamination makes it really difficult to use for data intelligence but data cleansing algorithms are further applied to it to make some valuable inferences.

All of these issues associated with Big Spatial Data can be resolved use one of the following techniques:
1. Basic Big Data Technology
2. Spatial Data Technology
3. Extraction Data Intelligence

This paper presents a good insight on the importance of spatial data in its applications in the real while explaining the issues related to it and possible solutions. Since Big data is still a relatively new concept, this paper does not offer much depth into the solutions as one cannot possible infer all the information from 95% contaminated data. Thus, some more research is needed to decrease the level of contamination and hence use majority of data at hand rather than discarding majority of data that we do now.

Framework for categorizing and applying privacy and preservation techniques in Data Mining

Data mining or knowledge discovery from data (KDD) is the process of extracting valuable information from data that lies around us. This process can lead to privacy threat as data miners have access to secret information of various individuals (Xu et al, 2016).

Data privacy in some decreases data utility. For instance, using privacy preserving data mining (PPDM) leads to privacy issues in some KDD stages (Xu et al, 2016). Data privacy can be maintained using different approaches. One such example is demonstrated in the figure below.

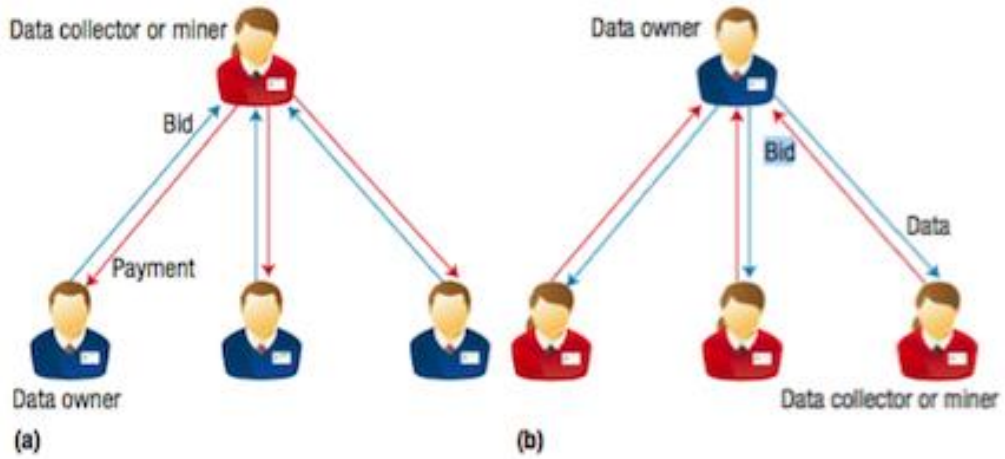


Fig: Auction models

a) Data owner sells data to data miner via bid (Blue arrow) and receives payment (Red arrow)

b) Data owner offers data for sale (Blue arrow) to receive bids from multiple miners (Red arrow)

This figure clearly demonstrates that the best way to keep privacy of data intact is by preventing others from accessing data. In the first case, the data is only offered to one bidder whereas in second case, all the bidders had access to data. In case b, the data privacy is breached.

In order to maintain data privacy and data utility, this research highlights Rampart Framework as the possible solution for KDD. This can be achieved by the following 5 practices (Xu et al, 2016):

1. k-Anonymity: Anonymization technique is used to modify the set of values so that they are indistinguishable from other tuples to obtain privacy preferences that are personalized.

2. Modification: Even after anonymization, data contains sensitive information that can be

identified by the data miners. In order to avoid possible privacy breaches, geometric transformations such as scaling and rotation are applied to data.

3. Provenance: Decision makers are supported by the research of data miners and if data does not come directly from data miners, they must know the credibility of data and thus provenance allows them to evaluate data and reveals ancestral information and also the transformations that were applied to data.

4. Restriction: Restrictions are applied to data based on the privacy rules of a country.

5. Agreement & Trade: This paper highlights the trade agreement issues and privacy breaches and this is further managed using game theory.

Overall, this paper expresses a good insight on preserving the data privacy using Rampart's framework but some loopholes still exist that can be seen in trade agreements where data is made public for auctions and people can access it. And moreover, restrictions differ from country to country which makes it difficult for data miners and decision makers to verify the credibility of data if it comes from various sources. Some more stringent restrictions need to be applied on data availability to ensure its privacy in the future.

4.2.2 Big Data is social media using data mining techniques

Social media is the greatest source of big data and individual practices. This paper highlights that every individual on average spends two and a half hours on social media (Gole & Tidke, 2015) which means we generate Trillions of Terabytes of data every single day that can be used to analyze individual preferences and hence predict the trends. Due to the volume of this data, it is currently not possible to directly infer conclusive information from this data. Hence, clustering algorithms are used to find some relationship and dependencies in this data which is further analyzed to make decisions.
Data mining algorithms such as HACE and RMKMC are quite popular for identifying data patterns using clustered matrices. Hadoop Map Reduce and NoSQL is used to further process the data and gain valuable insight from the whole unstructured set of Big Data. The following table presents with a view of the challenges that such data presents and which techniques can be applied to comprehend them based on the characteristics of data.

Characteristics	Challenge	Technique
Volume	Storage/Scale	Distributed File System
Velocity	Fast Processing	Parallel Programming
Variety	Heterogeneity	NOSQL Databases
Value	Knowledge Discovery, Semantics, Analytics	Data Mining Algorithms
Data Accessibility/Availability	Privacy/Security	WINE platform & BotCloud

As seen in the table, Big Data is primarily driven by volume, velocity, variety and value. Each of these characteristics have different impact on the accessibility of data and thus different technique needs to be used for processing different set of data. Big Data Mining using Hadoop and clustering technique offers good speed of data processing as described in this paper. The main problems that Hadoop caters to can be regarded as cost effectiveness, big clusters, parallel processing, big storage, failovers, data distribution and map reduce.

This paper presents a great analysis on the current issues and mitigation technologies that can be used by data miners to process data effectively and efficiently.

Reducing the search space for big data mining for interesting patterns from uncertain data

This paper highlights the evident fact that search space for big data mining is not only uncertain but huge in its aspect. Mining algorithms without a focus point would not return valuable information from such a vast search space (Leung et al, 2014). Thus, in order to reduce the search space, the authors propose Map Reduce function to satisfy the user needs which can be seen as succinct anti-monotone. The authors present two basic algorithms as mining frequent singletons and mining frequent non-singletons. Both of these algorithms focus on expressing the result with minimum support for each constraint. This allows in reducing the overall search space. The algorithm works by scanning and identifying the uncertain data in order to compute the support required by the items in the set. This scan is again performed but this time in the database to ensure that the insertion of all the transactions are completed in the form a tree structure.

The outcome of this algorithm is the set of pattern that interest the users. This certainty of data set thus helps save time using Map Reduce function for constraint checks. The authors present their result sets in an experiment set which looks promising and the algorithm seems to work effectively. This sort of reducing in a n uncertain data search space marks the beginning of a new era in data mining.

Overall, the authors have done a great job is providing experimental analysis and results that can be seen to provide a great insight on dealing with uncertain data sets that prevail in big data environment. This paper presents a good view of structuring the veracity of data by following singleton approach and achieving the interested user goals.

Conclusion

All the research papers present with a single notion of big data mining that deals with a great volume of big data. All the authors have presented their arguments and research providing various algorithm to drill through the unstructured data that lingers around the sophisticated field of IT. These papers provide a good insight on how to deal with different sets of Big data that revolve majorly around velocity, veracity, volume and value. Each of these characteristics present a different challenge that is being identified in these research papers and presented with possible solutions. Overall, these researches prove to be beneficial for big data mining as they offer various approaches for various problems being identified and some further research in this field can offer the gateway to a robust application design that deals with all problems at once rather than deploying different algorithms for different problems.

4.3 References

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