Hive UDF

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User Defined Functions in Hive

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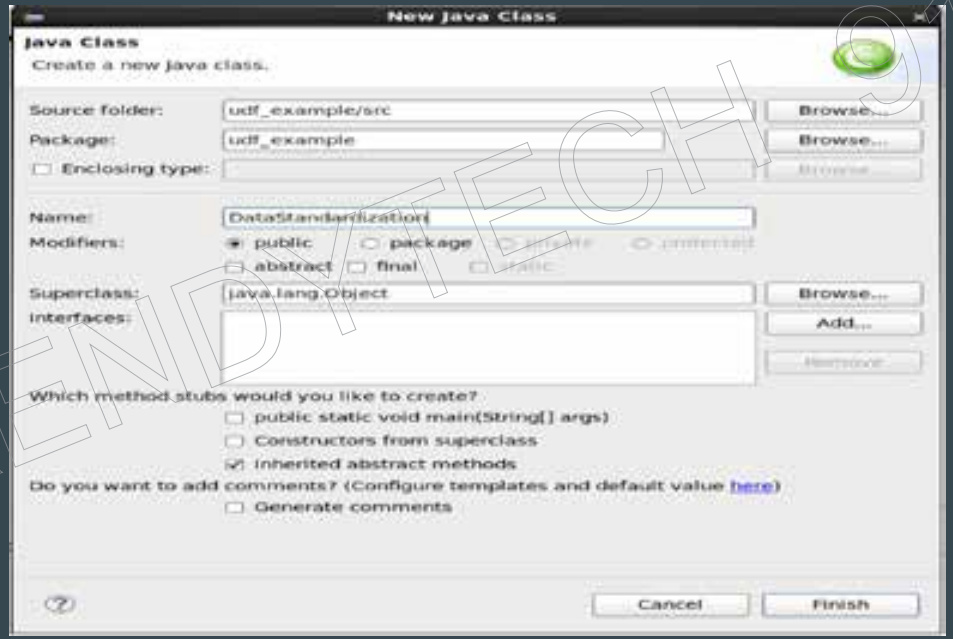
Create a UDF to convert String to Upper case

Open eclipse & Create a new java Project (udf_example)
Inside that create a New Class



Package name:
udf_example

Class Name:
DataStandardization

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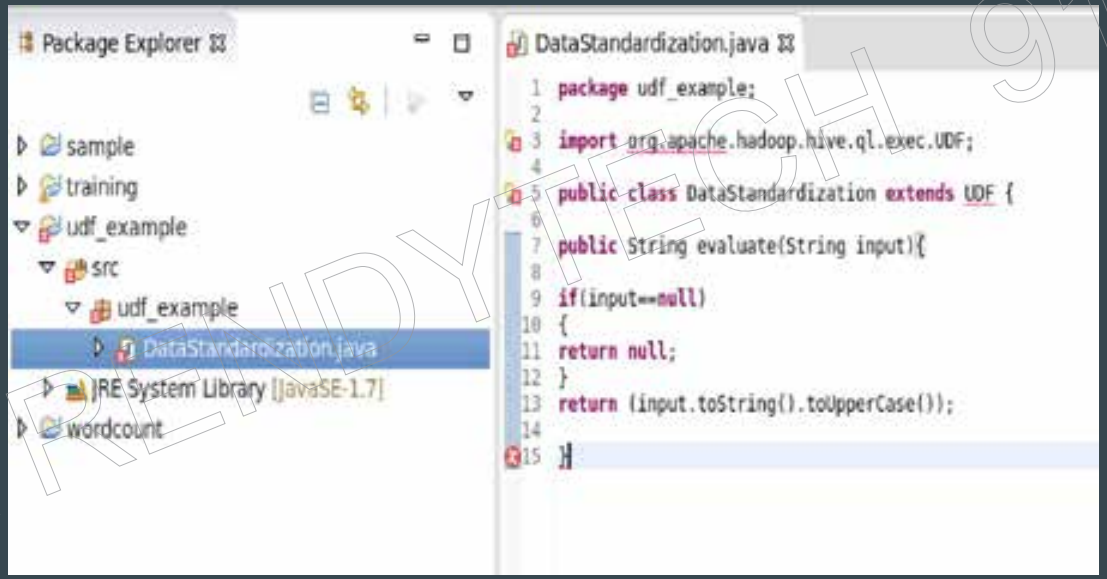
What was the pain point?

Copy the given code in this DataStandardization.java file



You will see few errors because some of the relevant jars are missing

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Below is the Code

```
package udf_example;

import org.apache.hadoop.hive.ql.exec.UDF;

public class DataStandardization extends UDF {

public String evaluate(String input){

if(input==null)
{
return null;
}
return (input.toString().toUpperCase());
}}
```

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Download the necessary jar

Link to download the jar:

https://mvnrepository.com/artifact/org.apache.hive/hive-exec/1.2.2

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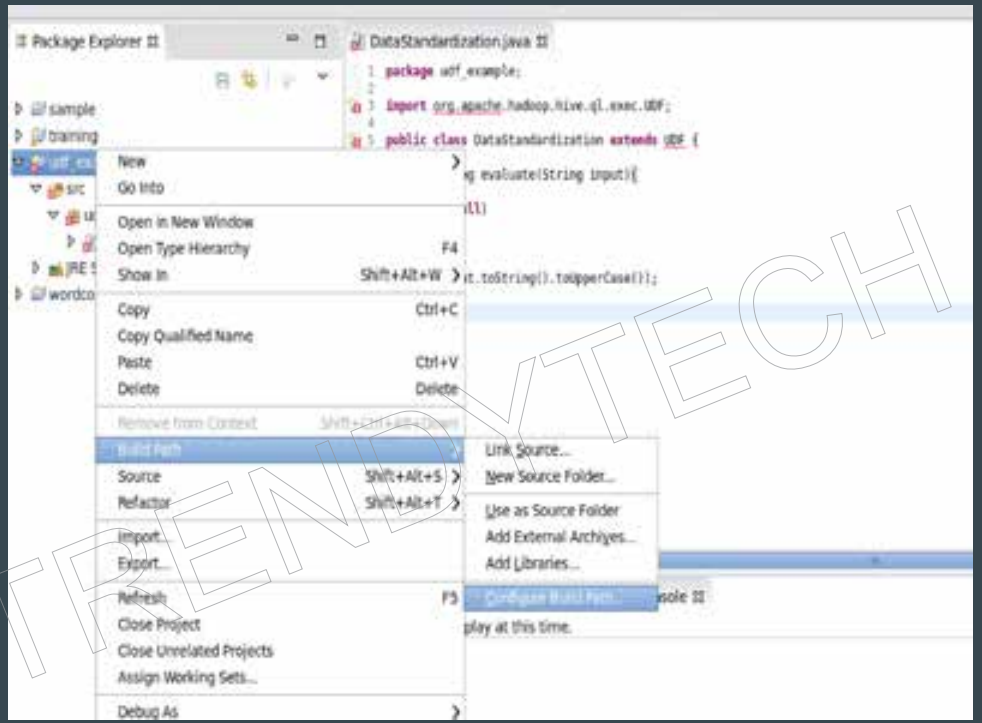
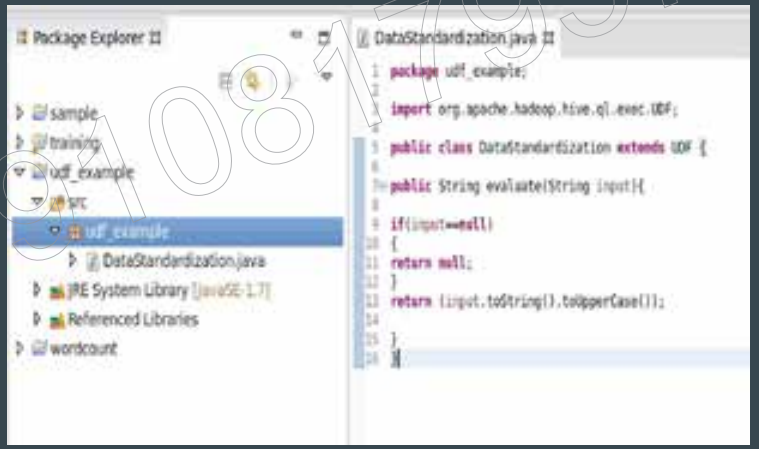
Add the Jar hive-exec-1.2.2.jar





After adding the jar, you can see the errors are gone.

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Let us create a Hive Table & Load Data

use trendytech;

create table if not exists sample_table(name string,count int) row format delimited fields terminated by ',' lines terminated by '\n' stored as textfile;

load data local inpath '/home/cloudera/Downloads/sample_data.txt' overwrite into table sample_table;

```
hive> create table if not exists sample_tablename string,count int) row format delimited fields terminated by ',' lin
es terminated by '\n' stored as textfile;
OK
Time taken: 0.328 seconds
hive> load data local inpath '/home/cloudera/Downloads/sample_data.txt' overwrite into table sample_table;
Loading data to table trendytech.sample_table
Table trendytech.sample_table stats: [numFiles=1, numRows=0, totalSize=153, rawDataSize=0]
OK
Time taken: 1.517 seconds
hive> select * from sample_table;
OK
John    1500
Albert  1500
Mark    1000
Frank   1150
Loopa   1100
Lui     1300
John    1300
John    900
Lesa    1500
Lesa    900
Pars    800
leo     700
leo     1500
lock    650
Bhut    800
Lio     500
Time taken: 0.543 seconds, Fetched: 16 row(s)
```

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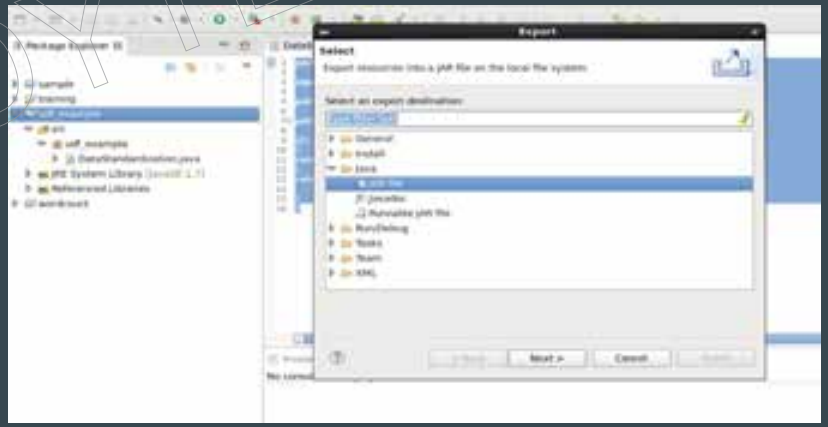
export the jar file for the java project

Right click project -> export -> jar file

With this give the desktop path and jar will be created on Desktop.



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Add the Jar & Create temporary function

ADD JAR /home/cloudera/Desktop/udf_example.jar;

create temporary function standardize as 'udf_example.DataStandardization';

```
File  Edit  View  Search  Terminal  Help
hive> ADD JAR /home/cloudera/Desktop/udf_example.jar;
Added [/home/cloudera/Desktop/udf_example.jar] to class path
Added resources: [/home/cloudera/Desktop/udf_example.jar]
hive>
```

```
hive> create temporary function standardize as 'udf_example.DataStandardization';
OK
Time taken: 0.003 seconds
hive>
```

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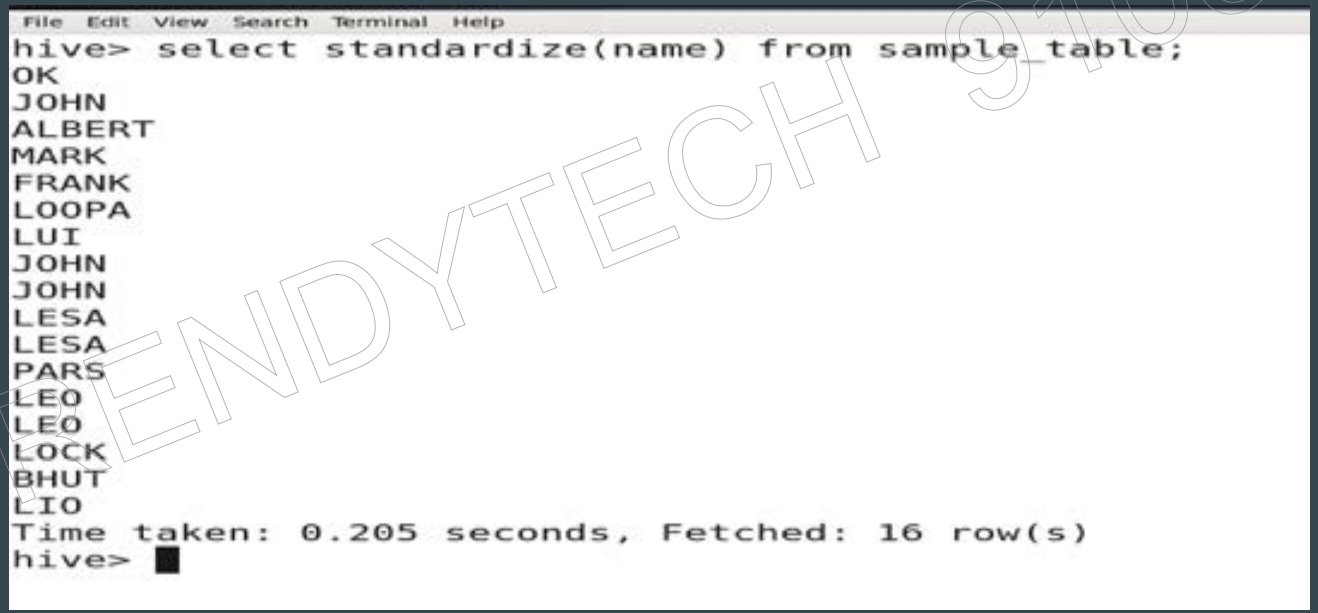
Now we are all set, try calling this UDF on a column in a table

select standardize(name) from sample_table;



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What’s the issue?

These are temporary things. This jar & function is valid only for current session. That means if you come out of hive and go back in, then you won’t be able to call this function.

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Create a permanent function

For this we need to have our jar in HDFS

Let us transfer the jar to HDFS

hadoop fs -put udf_example.jar /user/cloudera

```
[cloudera@quickstart Desktop]$ hadoop fs -put udf_example.jar /user/cloudera
[cloudera@quickstart Desktop]$
```

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Create a permanent function

Now in Hive create a permanent function

CREATE FUNCTION standardize_permanent AS 'udf_example.DataStandardization' using JAR 'hdfs://localhost:8020/user/cloudera/udf_example.jar';

```
hive> CREATE FUNCTION standardize_permanent AS 'udf_example.DataStandardization' using JAR 'hdfs://lo
calhost:8020/user/cloudera/udf_example.jar';
converting to local hdfs://localhost:8020/user/cloudera/udf_example.jar
Added [/tmp/dcee3d91-a797-48fb-8dcb-c598c7629416_resources/udf_example.jar] to class path
Added resources: [hdfs://localhost:8020/user/cloudera/udf_example.jar]
OK
Time taken: 0.075 seconds
hive>
```

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Try calling the function now.

select standardize_permanent(name) from sample_table;

```
hive> select standardize_permanent(name) from sample_table;
OK
JOHN
ALBERT
MARK
FRANK
LOOPA
LUI
JOHN
JOHN
LESA
LESA
PARS
LEO
LEO
LOCK
BHUT
LIO
Time taken: 0.085 seconds, Fetched: 16 row(s)
hive>
```

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We learnt to Create a Hive UDF

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