Flexible Search Queries [FSQ] =

Let's say we have DB →

Q = What are the different activities we perform?

1) **DDL** =

a. Create table
b. Alter table
c. Create Cols
d. Alter Cols
e. ====

Note = In "SAP Comm" how / where we do this? = ***-items.xml**

2) **DML**

a. Inserting record

Q1 = In "SAP Comm" how we do this? = ImpEx

b. Updating record

Q2 = In "SAP Comm" how we do this? = ImpEx

c. Deleting record

Q3 = In "SAP Comm" how we do this? = ImpEx

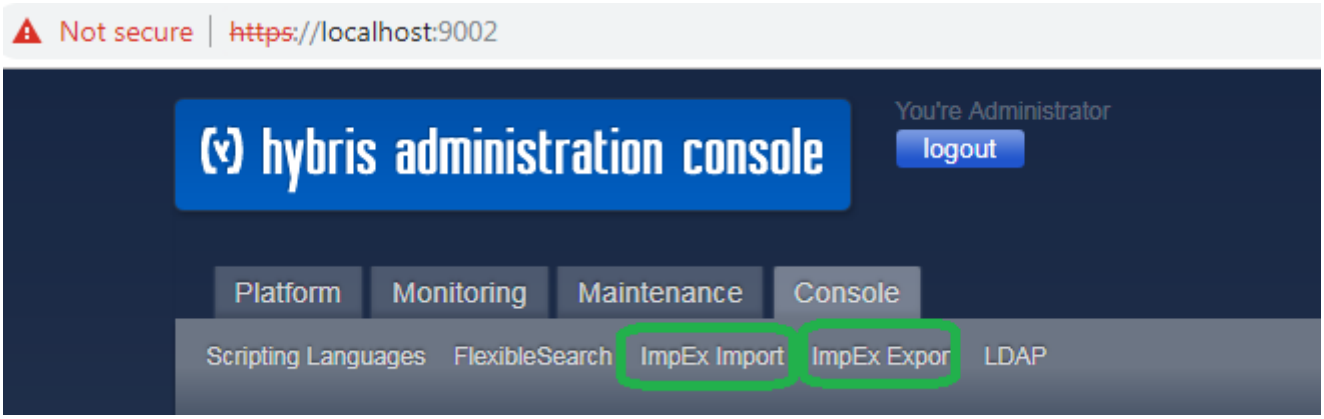
Note = We are writing the Impex – Means – U might be Inserting / Updating / Deleting the Record.

ImpEx → Import ImpEx =

We are getting the records into "SAP Comm".

ImpEx → Export ImpEx =

We are exporting the records from "SAP Comm"



d. Getting records (Oracle – Select)

Q4 = In "SAP Comm" how we do this? =

Flexible Search Queries (**FSQ**)

We are writing the FSQ – Means – You are getting the Records.

==> **Oracle – Select** === "**SAP Comm" – FSQ**

Oracle – Select command Syntax: -

Select * (or) EmpId, EmpName from **Emp** (TableName)

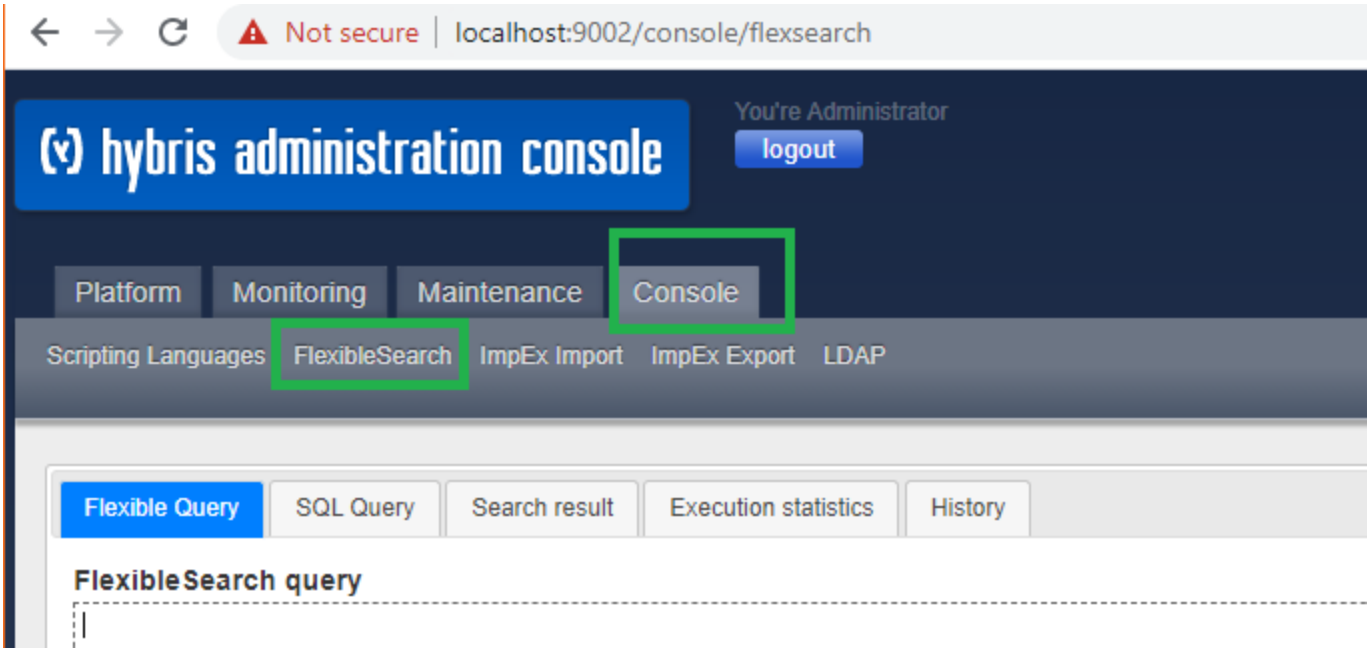
[Where ==] [Order by ==] [Group by ==]

➔ All these are applicable for "SAP Comm" also.

Q = How to execute the FSQ?

Sol1 = **hAC**

Sol2 = **Programatically**



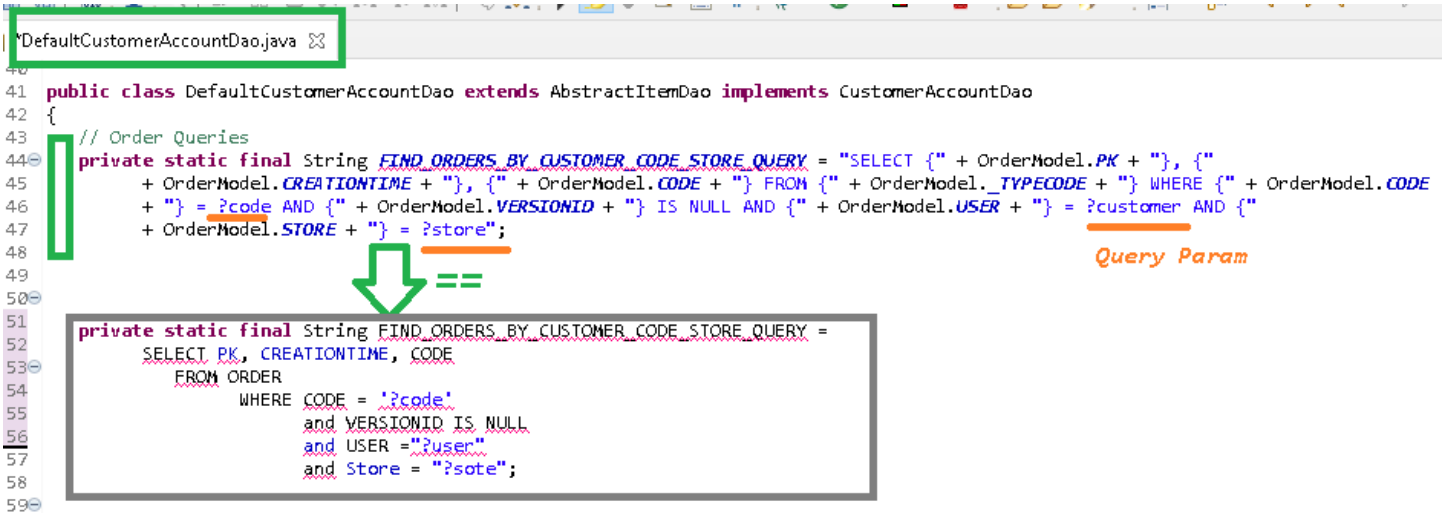
Note = In "SAP Comm" we write the FSQ. Internally this will be executed in 2 phases: -

1) **Phase 1** = FSQ will be converted into equivalent SQL query

2) **Phase 2** = This converted SQL query will be executed.

Programatically =

Step 1 = Write the Query



Step 2 = Set the Params

DefaultCustomerAccountDao.java

```
123    @Override
124    public OrderModel findOrderByCustomerAndCodeAndStore(final CustomerModel customerModel, final String code,
125          final BaseStoreModel store)
126    {
127       validateParameterNotNull(customerModel, "Customer must not be null");
128       validateParameterNotNull(code, "Code must not be null");
129       validateParameterNotNull(store, "Store must not be null");
130       final Map<String, Object> queryParams = new HashMap<String, Object>();
131       queryParams.put("customer", customerModel);
132       queryParams.put("code", code);
133       queryParams.put("store", store);
134       final OrderModel result = getFlexibleSearchService().searchUnique(
135             new FlexibleSearchQuery(FIND_ORDERS_BY_CUSTOMER_CODE_STORE_QUERY, queryParams));
136       return result;
137    }
```

Step 3 = Execute FSQ

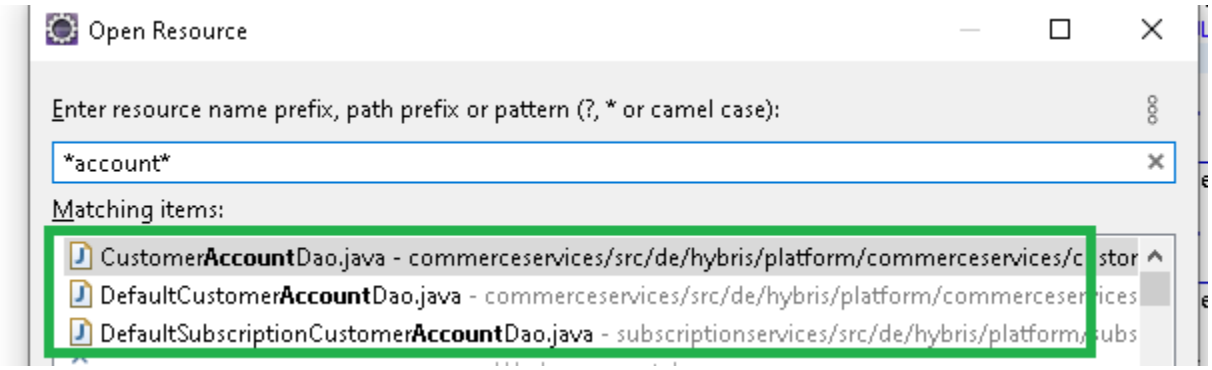
DefaultCustomerAccountDao.java

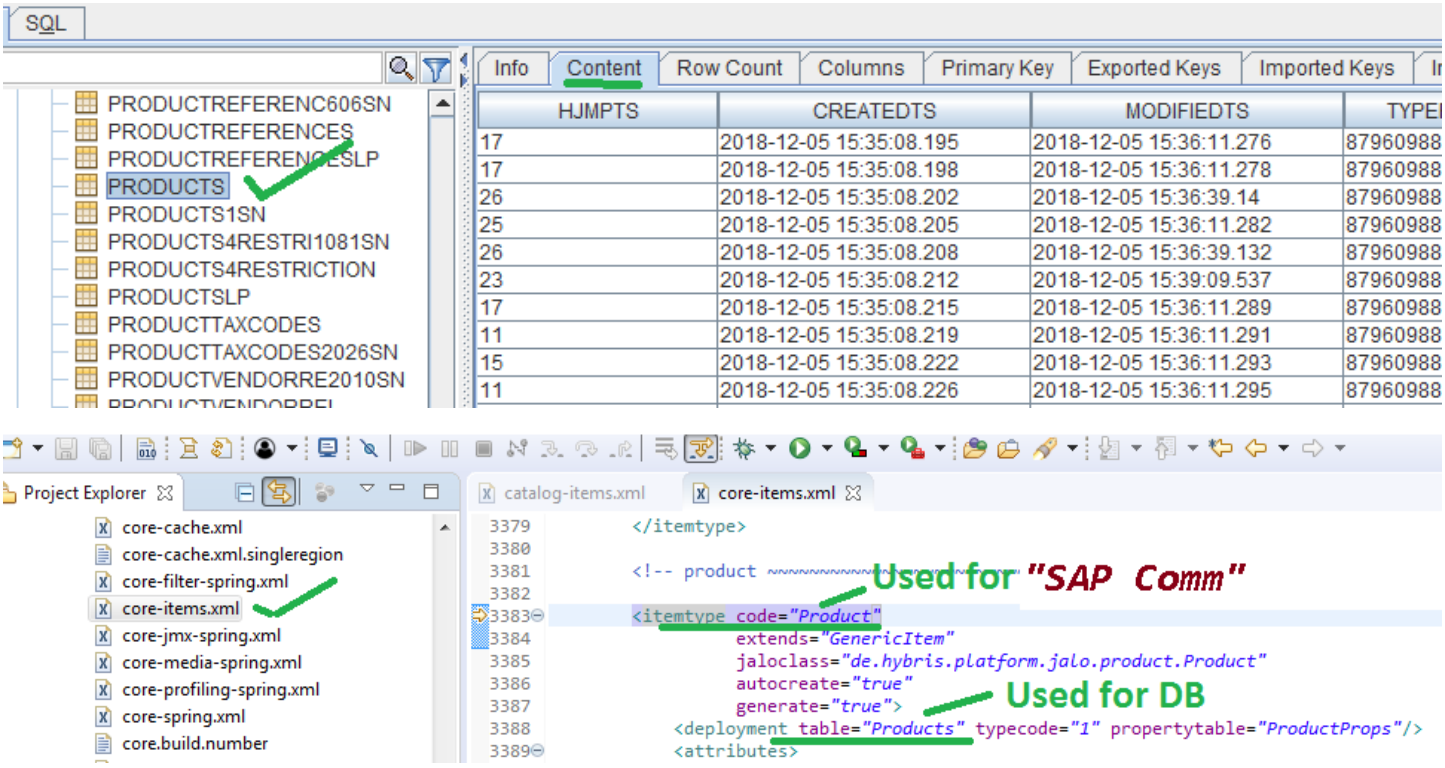
```
123    @Override
124    public OrderModel findOrderByCustomerAndCodeAndStore(final CustomerModel customerModel, final String code,
125          final BaseStoreModel store)
126    {
127       validateParameterNotNull(customerModel, "Customer must not be null");
128       validateParameterNotNull(code, "Code must not be null");
129       validateParameterNotNull(store, "Store must not be null");
130       final Map<String, Object> queryParams = new HashMap<String, Object>();
131       queryParams.put("customer", customerModel);
132       queryParams.put("code", code);
133       queryParams.put("store", store);
134
135       final OrderModel result = getFlexibleSearchService().searchUnique(
136             new FlexibleSearchQuery(FIND_ORDERS_BY_CUSTOMER_CODE_STORE_QUERY, queryParams));
137
138       return result;
139    }
140
```

Query

Params

Note = Generally, we write the FSQ in "***DAO.java**" file.





Product (Table) =

ProductID	**ProductName**	**ProductPrice**	=== Cols
========	==========	==========	
P101	**ABC**	**10$**	== Record 1
P102	**XYZ**	**20$**	== Record 2

Q1 = Get all the product table records?

Oracle = select * from product;

SAP Comm = select {pk} from **{**product**}**

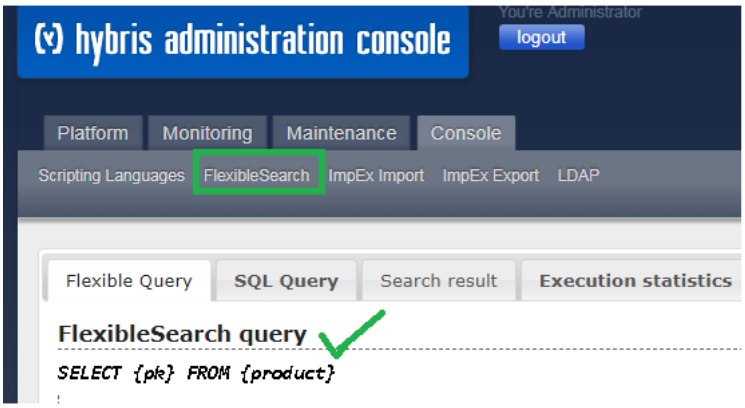
{product**}** = itemtype name.

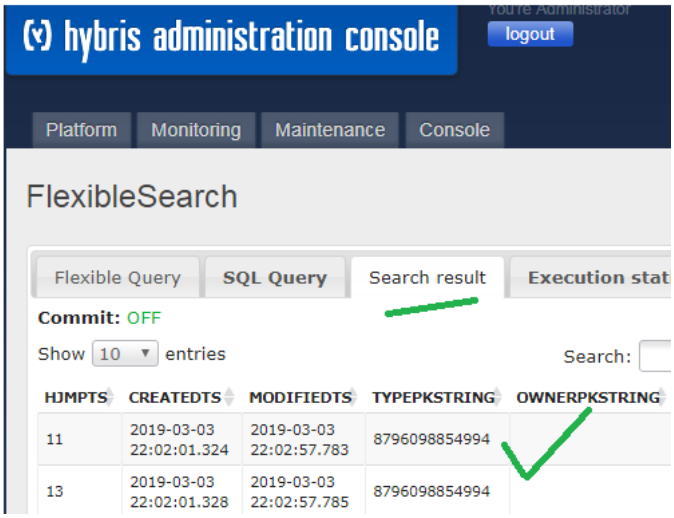
Itemtype names & Cols name – We need to put inside **{ }**

Q2 = Get only “Product Code & ManufacturerName” for all the Products?

Oracle = select code, manufacturername from products;

SAP Comm = select {code}, {manufacturername} from {product}

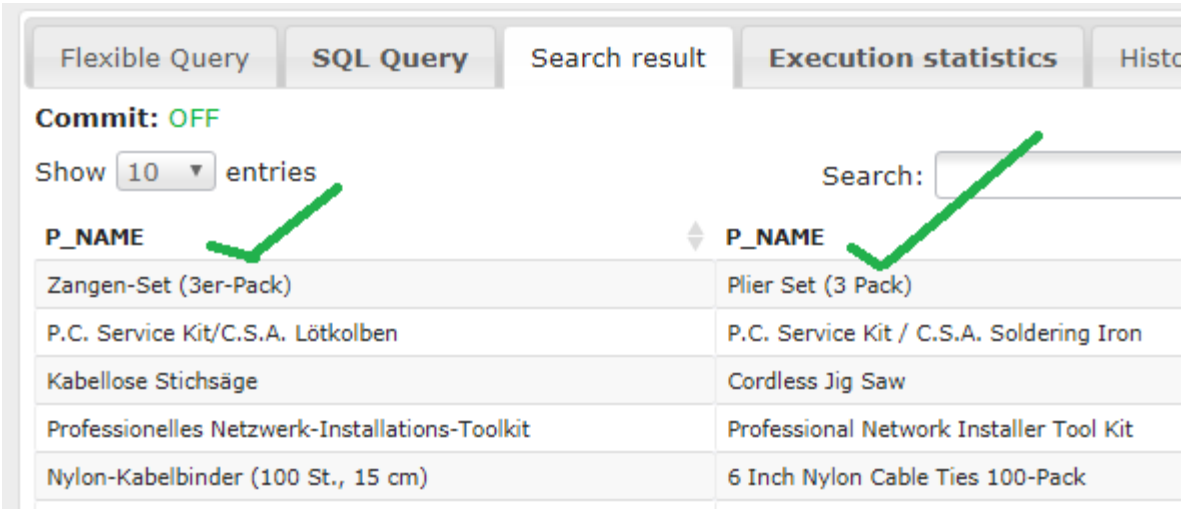




Q3 = Product name is localized.

How to get localized names for all the Products?

select {name[**de**]},{name[**en**]} from {product}



Q4 = How to give the Alias Names?

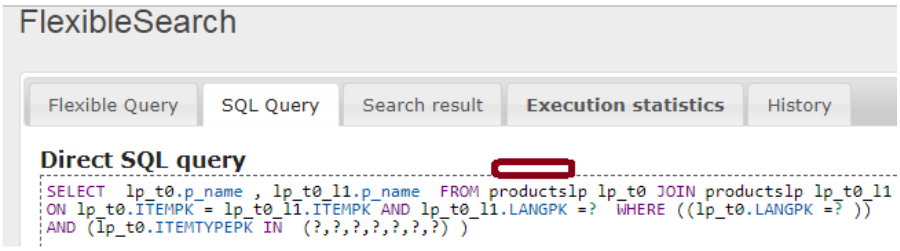
Oracle = select p.code, p.manufacturername from products **as p**;

SAP Comm =

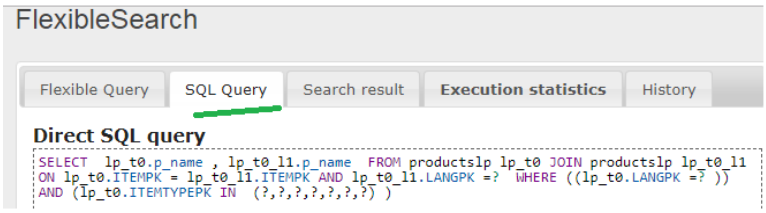
select {p.code}, {p.manufacturername} from {product **as p**}

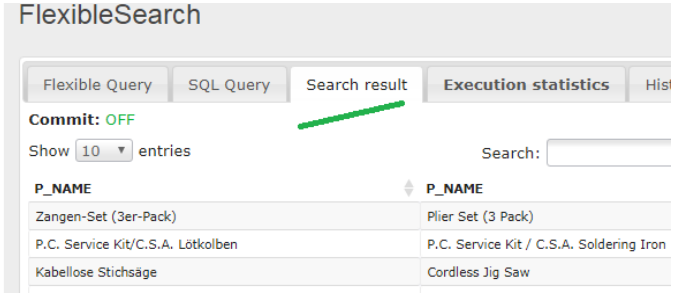
Note = FSQ will be executed in 2 phases: -

1) We write FSQ & it will be converted into equivalent native query



2) This converted query will be executed & get the results.





Q5 = Count How many Products are there?

Oracle = select **count(*)** from Products

SAP Comm = select count({pk}) from {product}

Note = We can apply all math's functions (count, min, max, sum, avg ….).

Q6 = Get all the Products which contains Product **code = 011**?

Oracle = select * from products where code like ‘%011%’

SAP Comm =

select {code} from {product} **where {code} like '%011%'**

select {code} from {product} where {code} **not like '%011%'**

select {code} from {product} where {code} like '%011%' **or** {code} like '%11%'

select {name} from {product} **where {name[de]} is not null**

Note = We can apply all the condition operators (**like … not like … and …** or **… is null … is not null ….**]

Q7 = Display all the product codes in ASC order from Product table?

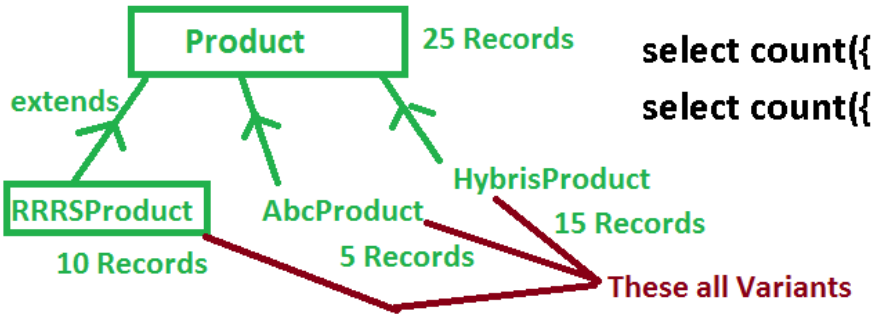
Oracle = select {code} from {product} order by {code}

SAP Comm = select {code} from {product} **order by {code} desc**

Note = Performance improvement query.

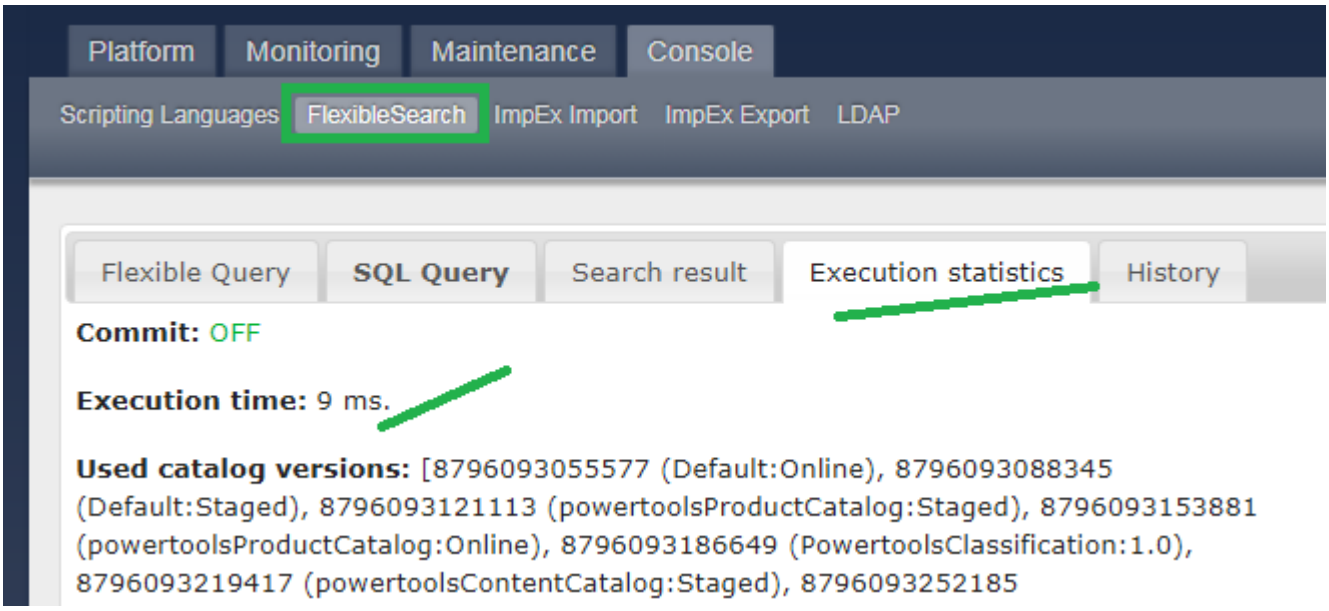
select count({pk}) from {product} = Showing 7,158 entries

select count({pk}) from {product**!**} = Showing 1,431 entries



select count({pk}) from {product} = 55 Records
select count({pk}) from {product!} = 25 Records

Q8 = Where can we see execution time of the query?



Note = We can also apply the joins.

Q = What are the different types of joins?

1) Left outer join
2) Right outer join
3) Inner join
4) Full join

Q9 = Get all user groups by parent unit?

SELECT * FROM {B2BUserGroup as ug JOIN B2BUnit as u ON {ug:unit} = {u:pk} }a

Q10 = Get all product codes from product and category table using left join?

Q = Is this a valid Flexible Search Query? =

SELECT {p.pk} FROM {Principal} AS p WHERE {p.uid} = 'admin'

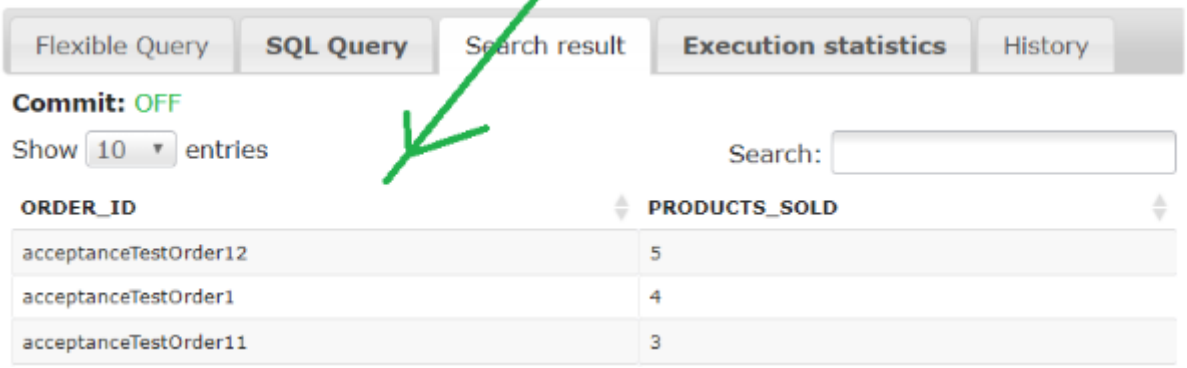
- No. Bcoz, Principal is an abstract type
- No. Bcoz, SQL aliases definition needs to be inside brackets
- No - for another reason
- Yes, this is a valid Flexible Search Query.

Combined SELECT Statements with UNION Operator =

```
SELECT x.PK FROM ( {{SELECT {PK} as PK FROM {Chapter} WHERE {Chapter.PUBLICATION} LIKE 6587084167216798848 }}
UNION ALL
{{ SELECT {PK} as PK FROM {Page} WHERE {Page.PUBLICATION} LIKE 6587084167216798848 }})
```

```
Query = Get top 10 orders (the order that contains the max products)in specific time frame

select {order.code} as order_id, count({orderentry.product}) as products_sold
from {order}, {orderentry}
where {order.pk} = {orderentry.order}
and {orderentry.modifiedtime} >= to_date('2018/06/12','YYYY/MM/DD')
group by {order.code}
order by 2 desc
fetch first 10 rows only
```

output of this query



Flexible Query | SQL Query | Search result | Execution statistics | History

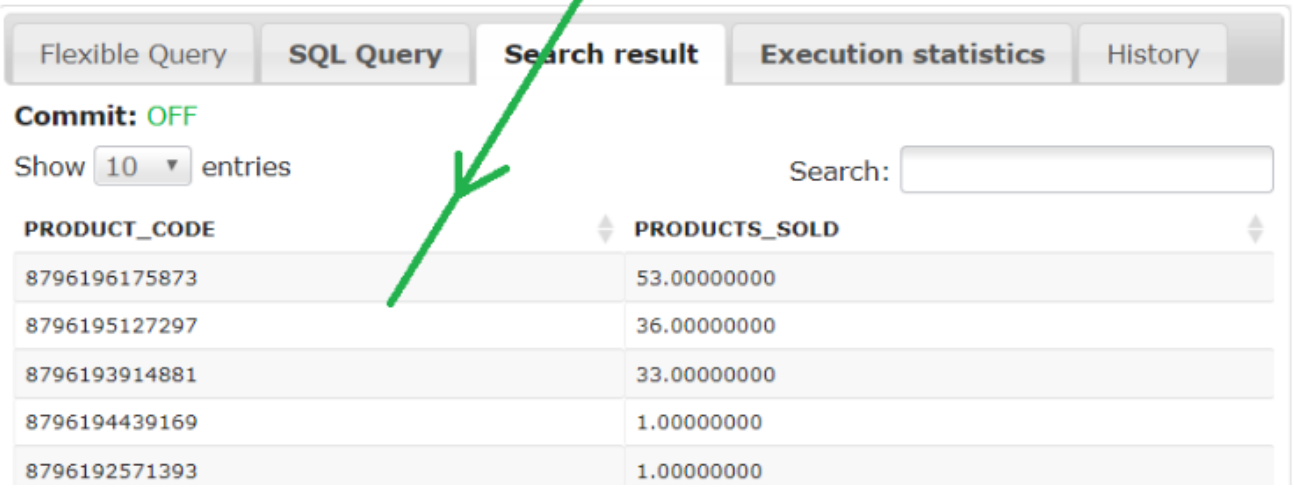
Commit: OFF

Show 10 entries Search:

ORDER_ID	PRODUCTS_SOLD
acceptanceTestOrder12	5
acceptanceTestOrder1	4
acceptanceTestOrder11	3

```
Query = get the top 10 products which are sold in specific time frame

select {orderentry.product} as product_code, sum({orderentry.quantity}) as products_sold
from {orderentry}
where {orderentry.modifiedtime} >= to_date('2018/06/12','YYYY/MM/DD') and
{orderentry.modifiedtime} <= to_date('2018/06/14','YYYY/MM/DD')
group by {orderentry.product}
order by products_sold desc
fetch first 10 rows only
```

output of this query



Flexible Query | SQL Query | Search result | Execution statistics | History

Commit: OFF

Show 10 entries Search:

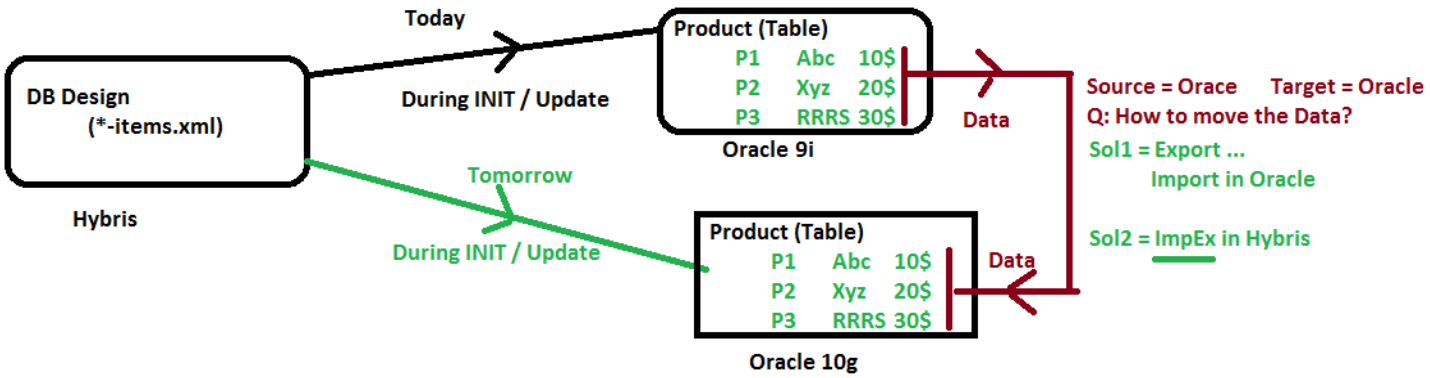
PRODUCT_CODE	PRODUCTS_SOLD
8796196175873	53.00000000
8796195127297	36.00000000
8796193914881	33.00000000
8796194439169	1.00000000
8796192571393	1.00000000

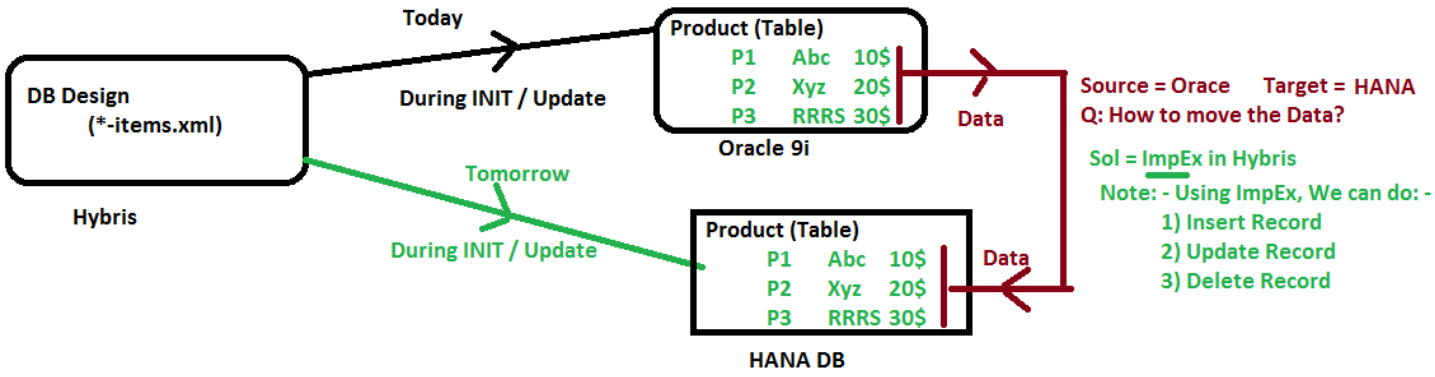
ImpEx

You are writing ImpEx means: -

1) You might be inserting / updating / deleting records = **Import ImpEx**

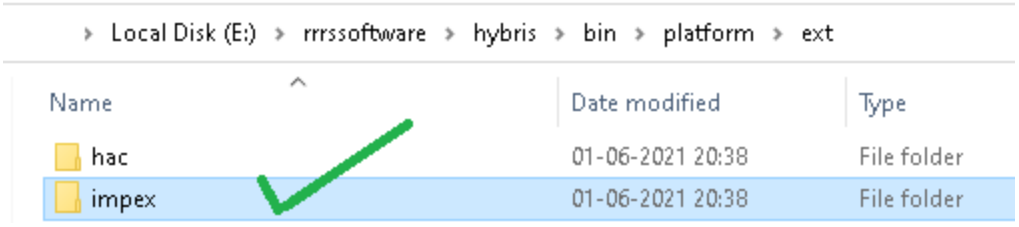
2) You might be taking out the “SAP Comm” records = **Export ImpEx**





ImpEx = This is text-based Import / Export.

“SAP Comm” provided Exts called “**ImpEx**”.



Let's say – We have a table called "**Emp**" in Oracle DB.

EmpId	**EmpName**	**EmpSal**
101	RRRS	10
102	Chenna	20
103	CLang	15

==========

Q = In **Oracle** – How to insert **100 Records** into Emp Table?

Insert into Emp (EmpID,EmpName,EmpSal) values (101,RRRS,10);

Insert into Emp (EmpID,EmpName,EmpSal) values (102,Chenna,20);

Insert into Emp (EmpID,EmpName,EmpSal) values (103,CLang,15);

==========100 times

In "**SAP Comm**" –

Insert_Update Emp;EmpID[unique=true];EmpName;EmpSal

;101;RRRS;10

;102;Chenna;20

;103;CLang;15

==========

Q = What is the general **syntax** of the **ImpEx**?

Mode Itemtype;att1[m1=v1,m2=v2];att2[m1=v1][m2=v2];att3;===

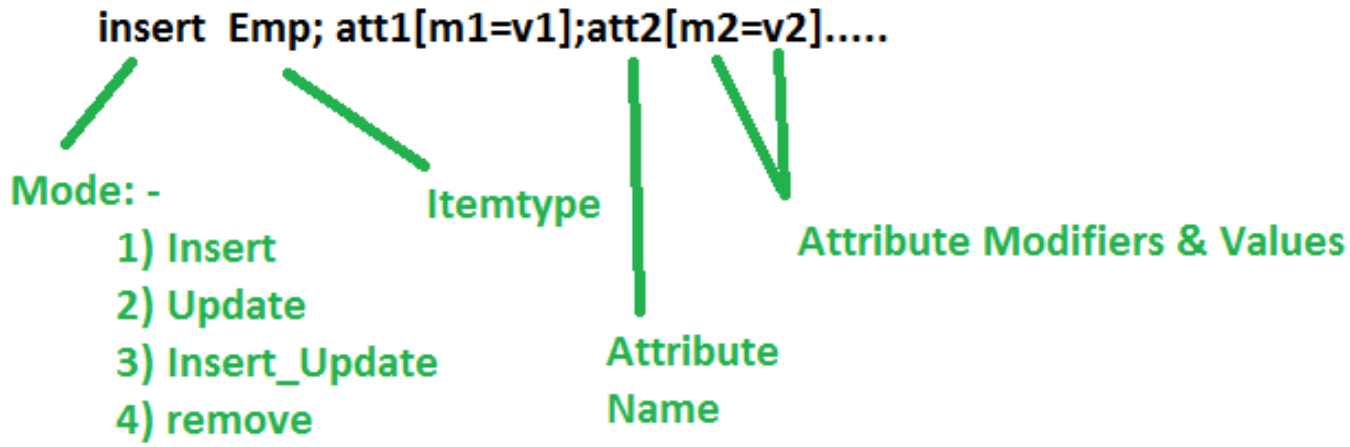
;Record 1

;Record 2

======

Note = “SAP Comm” allows us to change / use **delimiters** = ; **/** # **/** , **/** …

Q = What are the Terminologies (or) Jargons used in ImpEx?



Q = How can we specify multiple modifiers for attribute?

1st Method = att1[m1=v1, m2=v2, ….];

2nd Method = att1[m1=v1][m2=v2]…;

Q: Why do we use Macro's in C Lang?

We can define the macros in C Lang with #define.

Let's say -- Your Application is support 2 Lang (en & fr).

```
main()
{
        en & fr;
        ====
        en & fr;
        ====
        fun(en & fr);
}
fun(en & fr)
{
        en & fr;
        ===
}
```

This is what we have Today

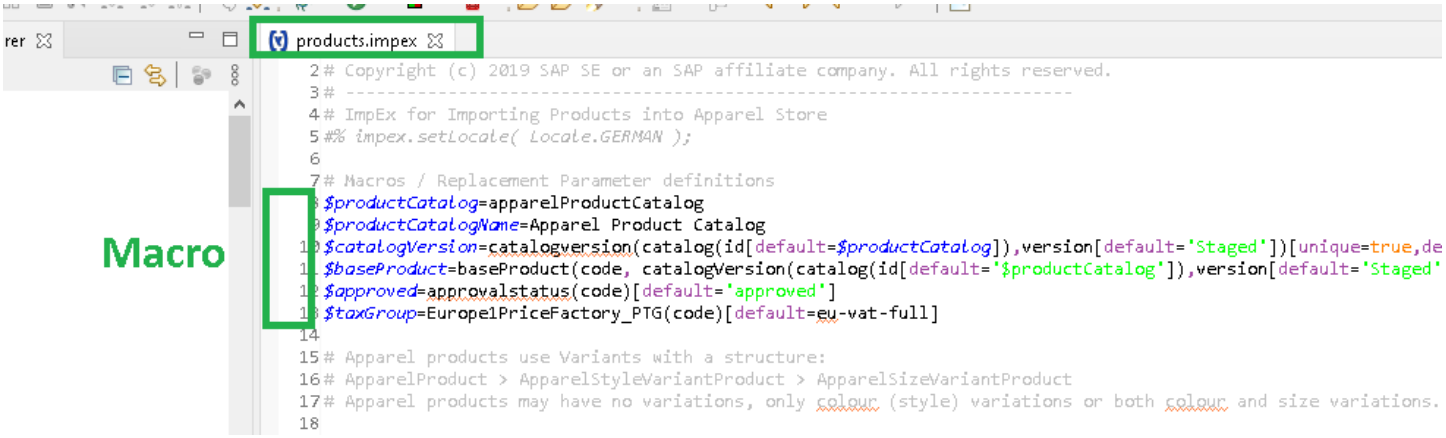
Tomorrow -- Your manager came & asking you to add another Lang = de.
So now, you need to change in 40 places.
Q: Is there any better way to do this?

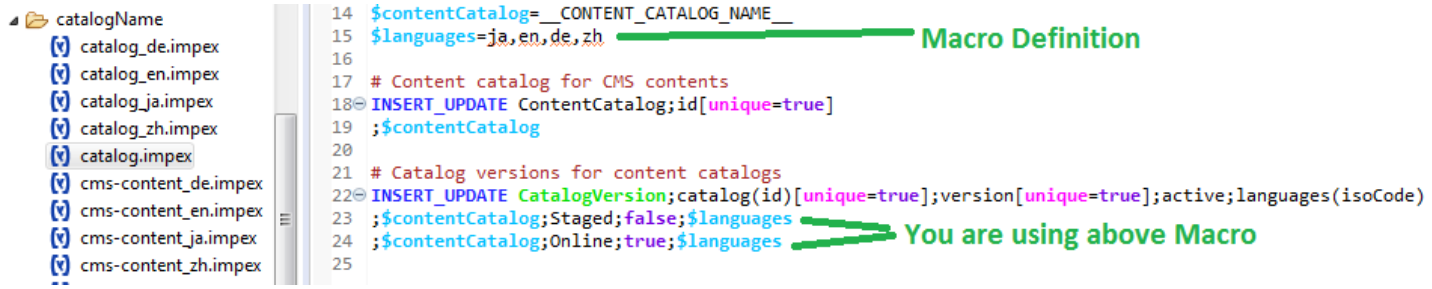
```
#define lang="en&fr";
main()
{
        lang;
        ===
        lang;
        ===
}
```

If we go with this. Tomorrow if your manager is asking you to add another Lang = de.
No -- You will change only in 1 place.

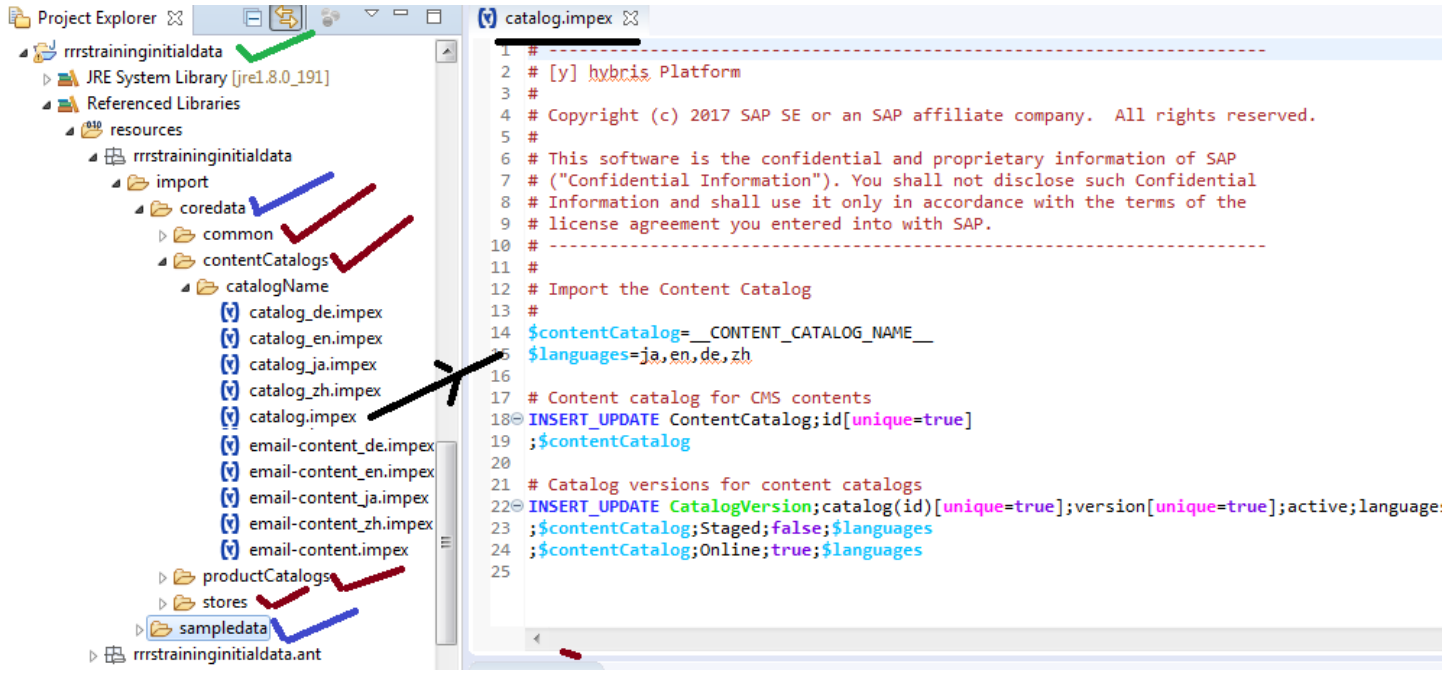
Note = “SAP Comm” ImpEx’s uses the Macros.

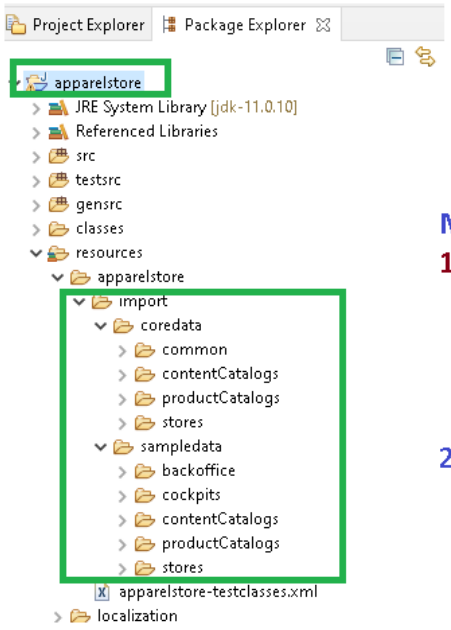
In C Lang - #define ===== In “SAP Comm” - $===

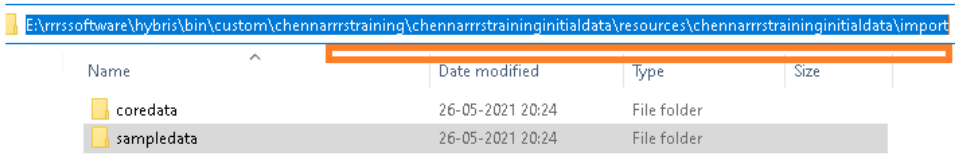




Note: Generally – We write the ImpEx **“*Initialdata”** Ext.







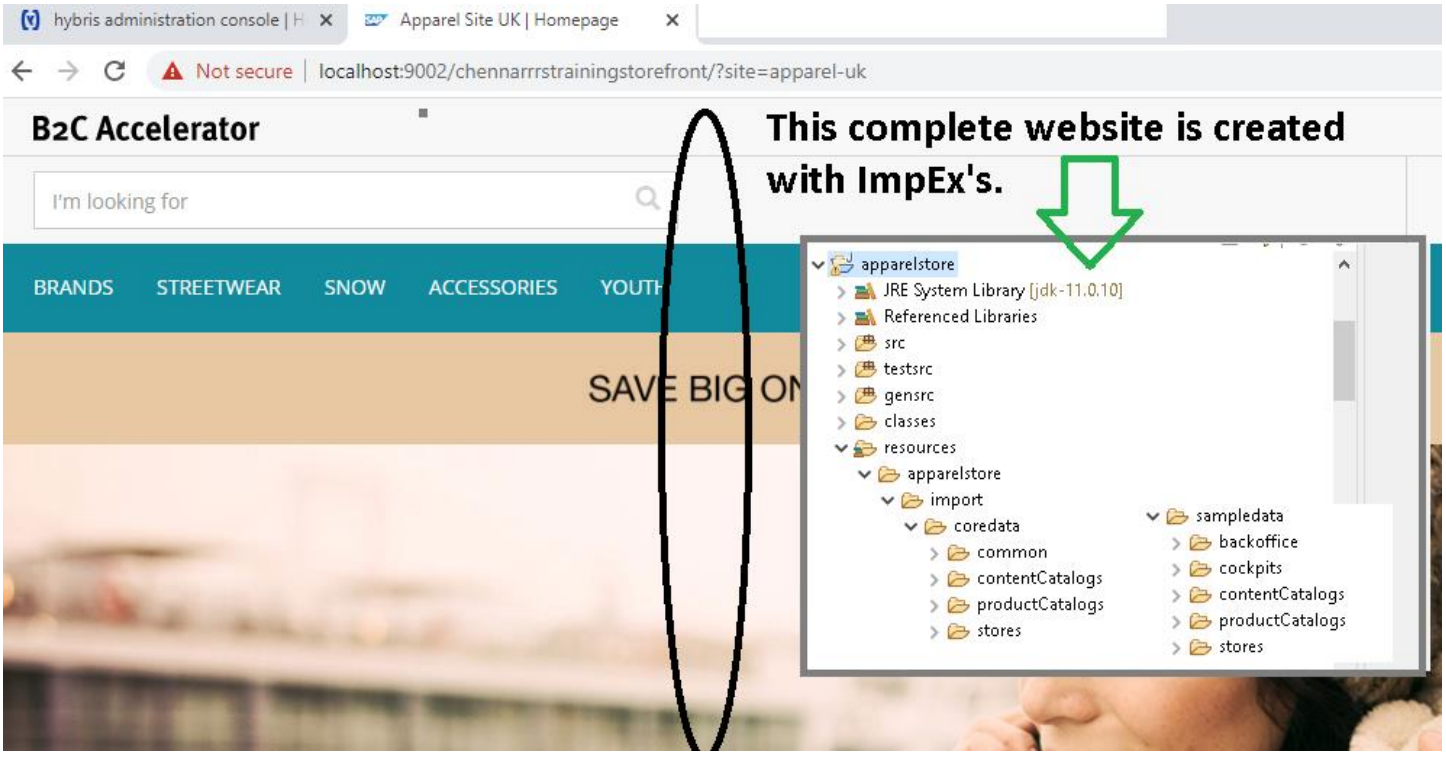
Mainly – We have 2 types of Data: -

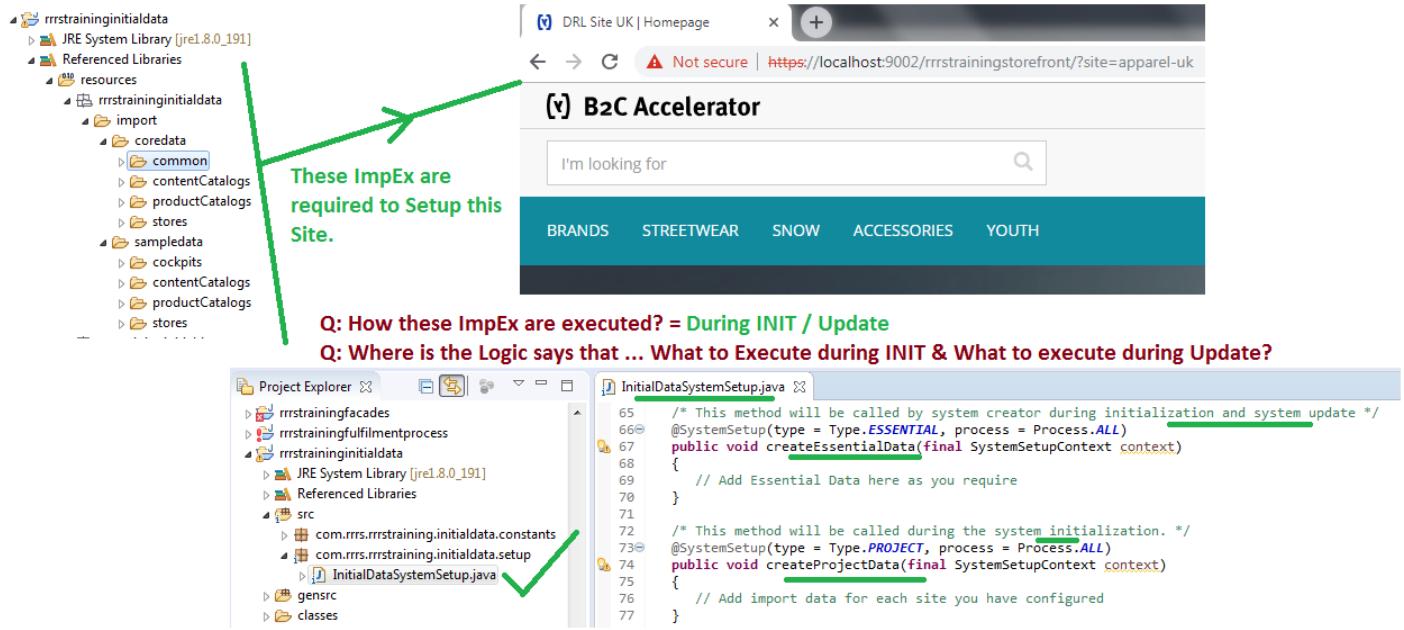
1) CoreData =

- **a. Common = essential-data.impex (Language ... Currency ... Titles ...)**
- **b. ContentCatalogs = catalog.impex ... cms-content.impex ... email ...**
- **c. ProductCatalogs =**
- **d. Store = site.impex .... Store.impex .... solr.impex ...**

2) SampleData =

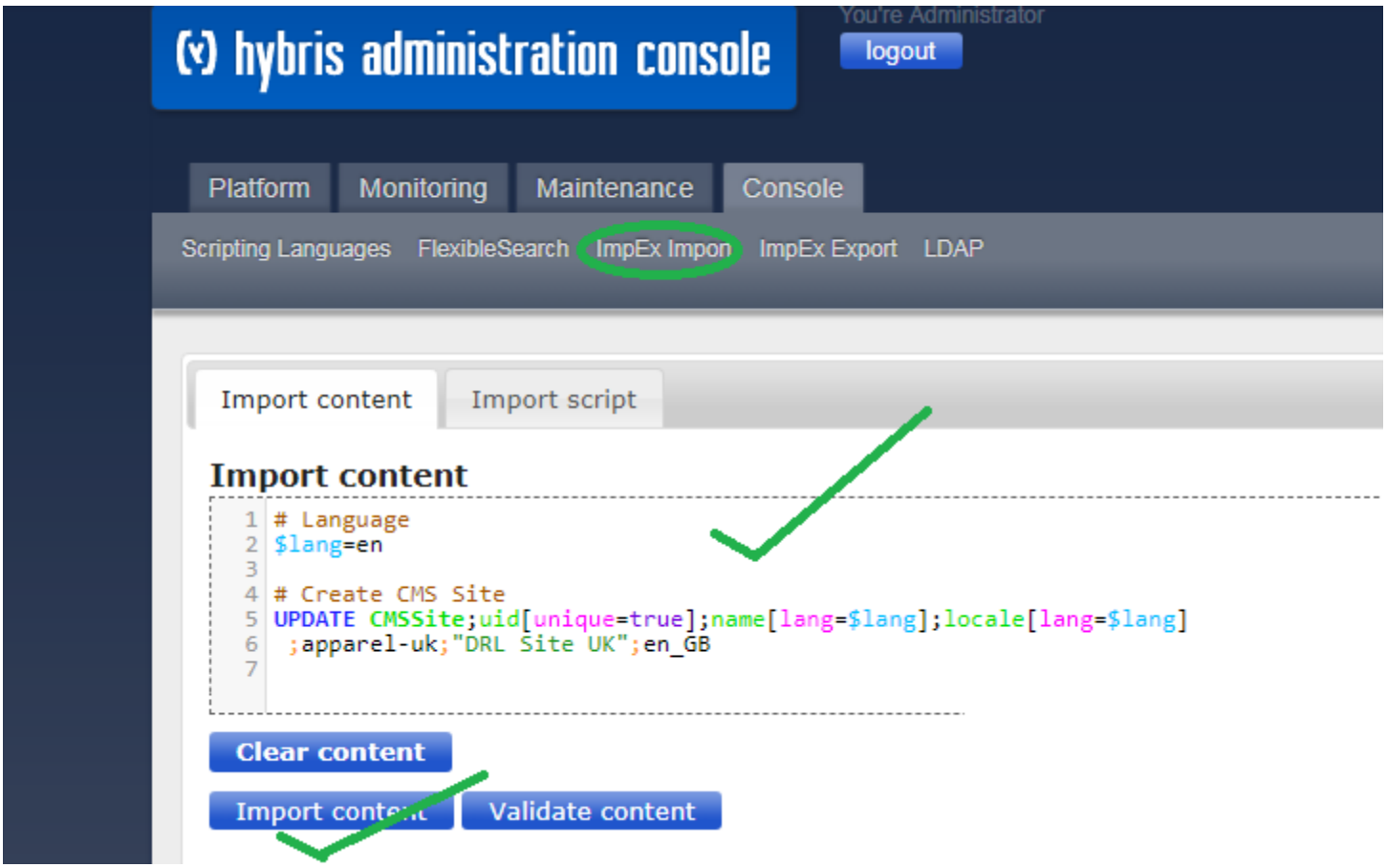
- **a. backoffice**
- **b. cockpits**
- **c. contentCatalogs**
- **d. productCatalogs**
- **e. stores**



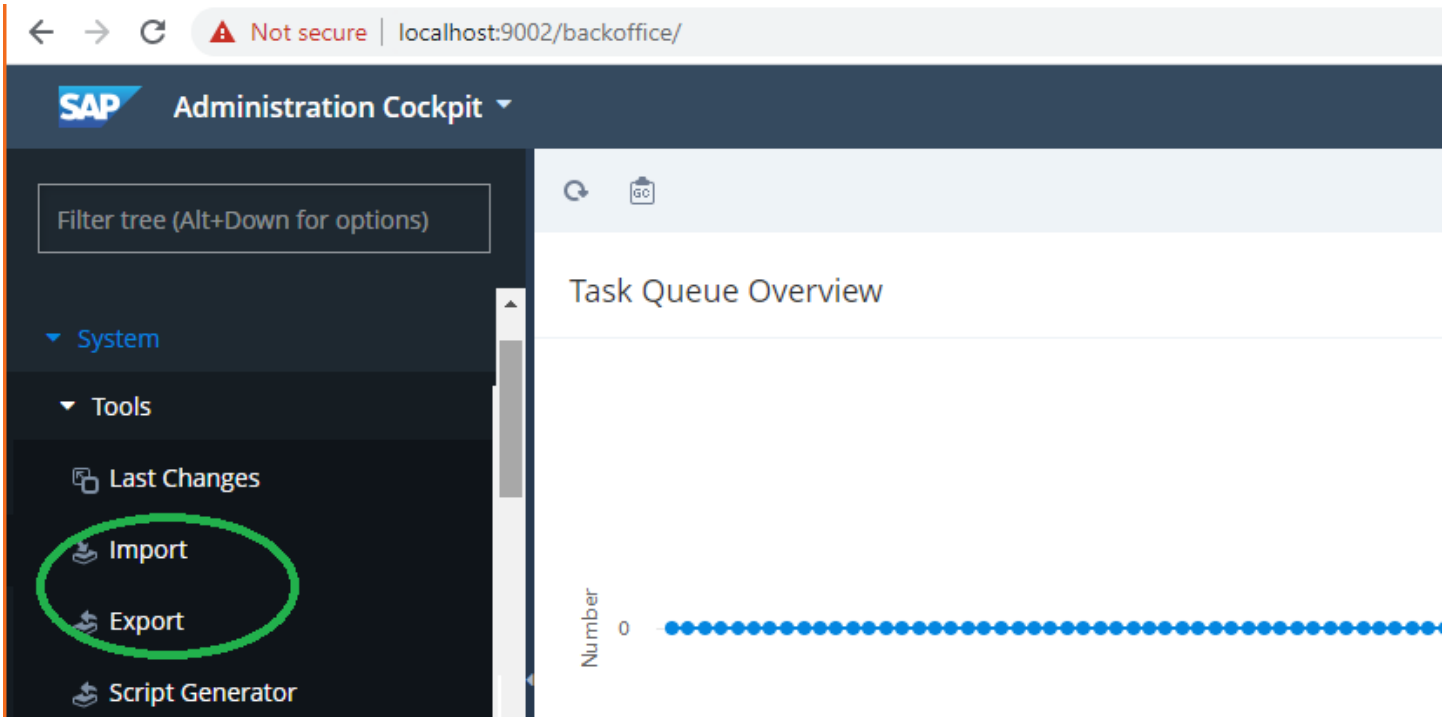


Q = What are the different ways to execute the **ImpEx**?

Sol1 = hAC

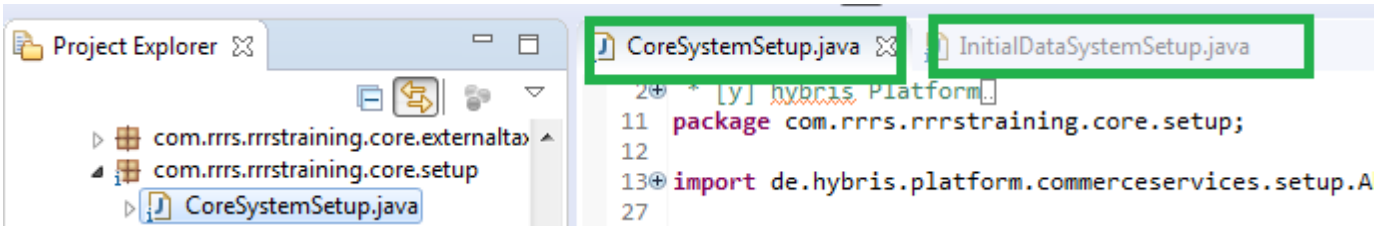


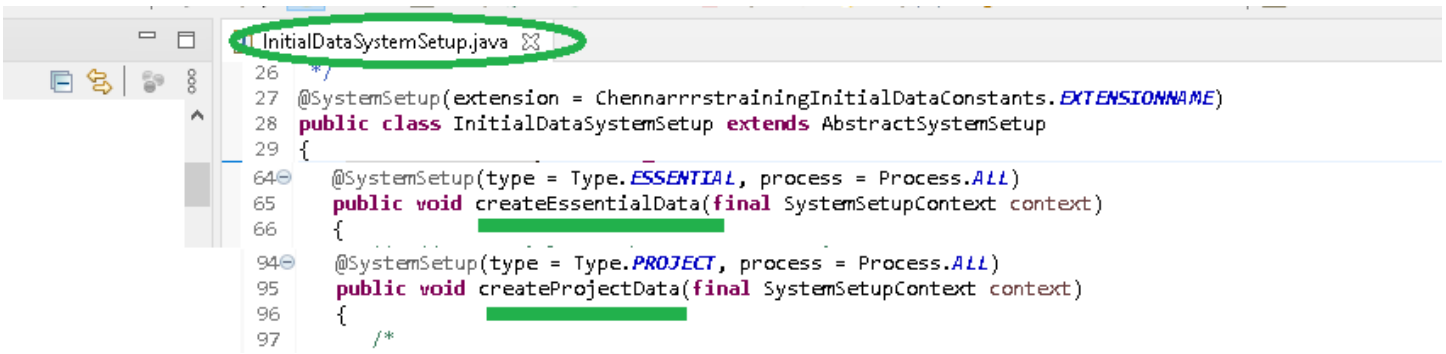
Sol2 = Backoffice



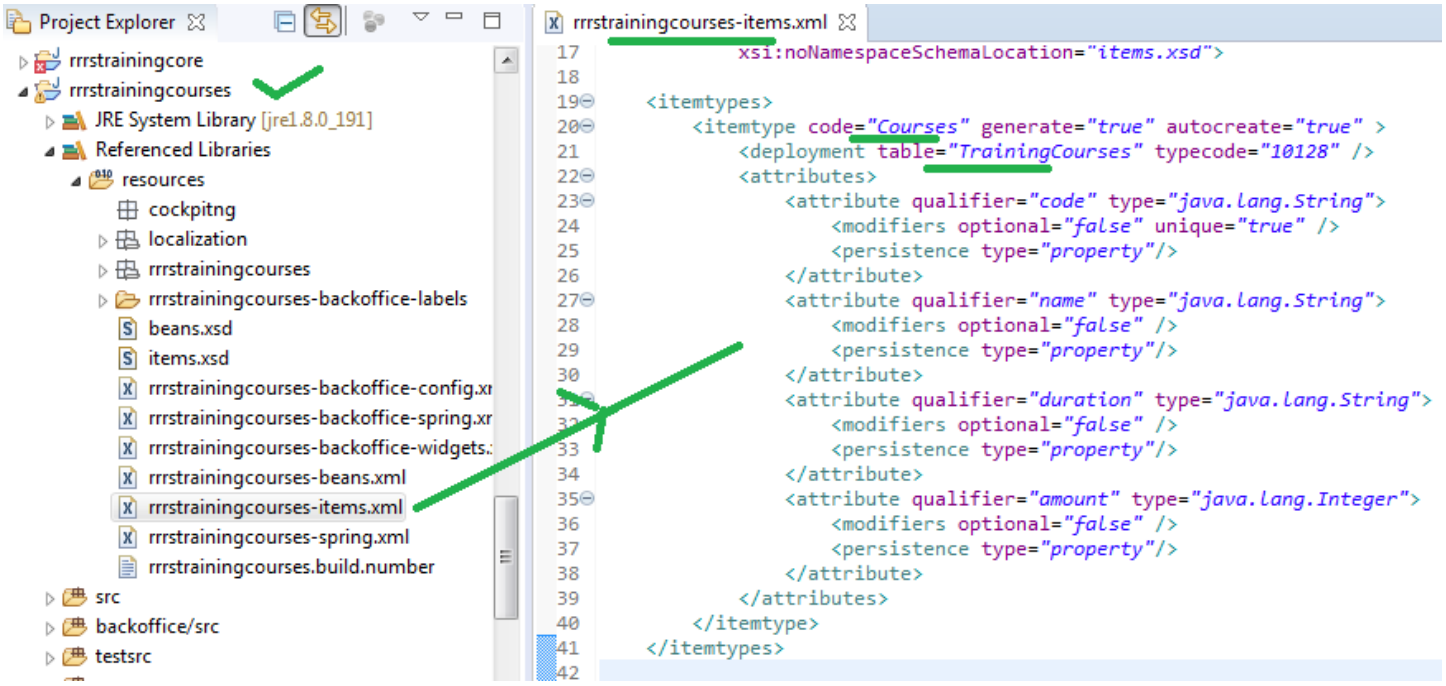
Sol3 = Programmatic way / ImpEx == During INIT / Update time.

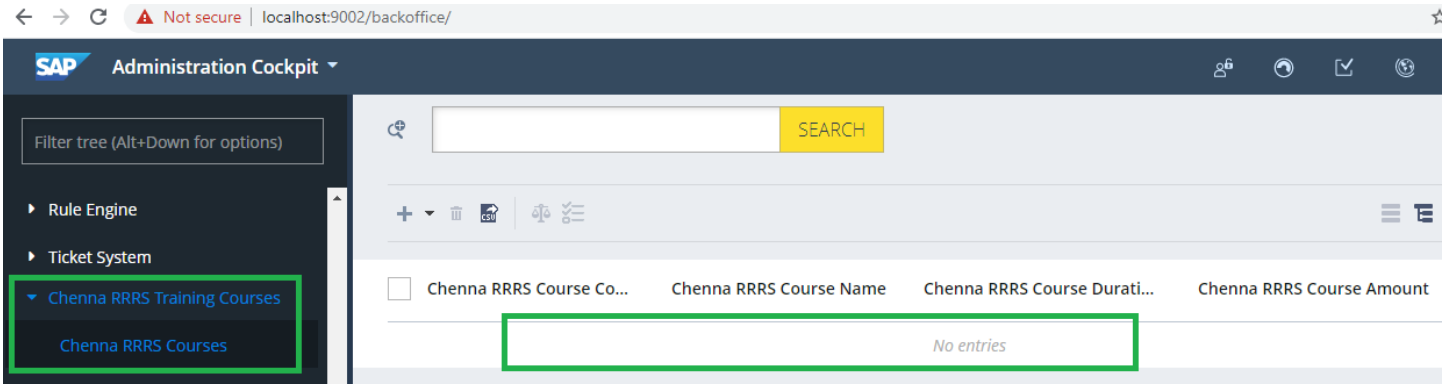
```
INSERT_UPDATE Title;code[unique=true];name[lang=zh];name[lang=en];name[lang=ja];name[lang=pt]
;0001   ;Ms.    ;Ms.    ;æ§˜    ;Ms.
;0002   ;Mr.    ;Mr.    ;æ§˜    ;Mr.
```





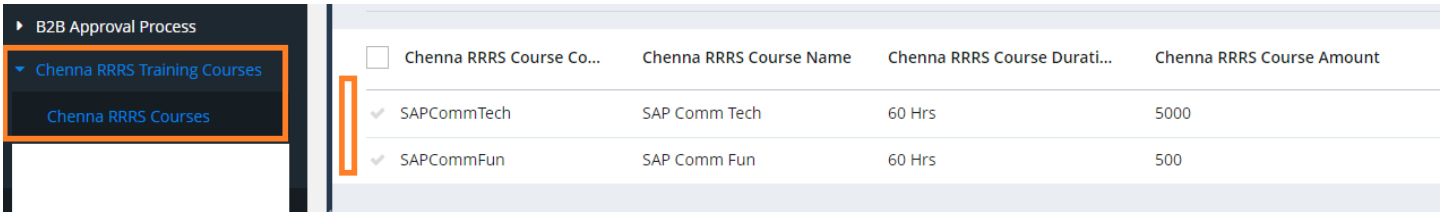
Example =



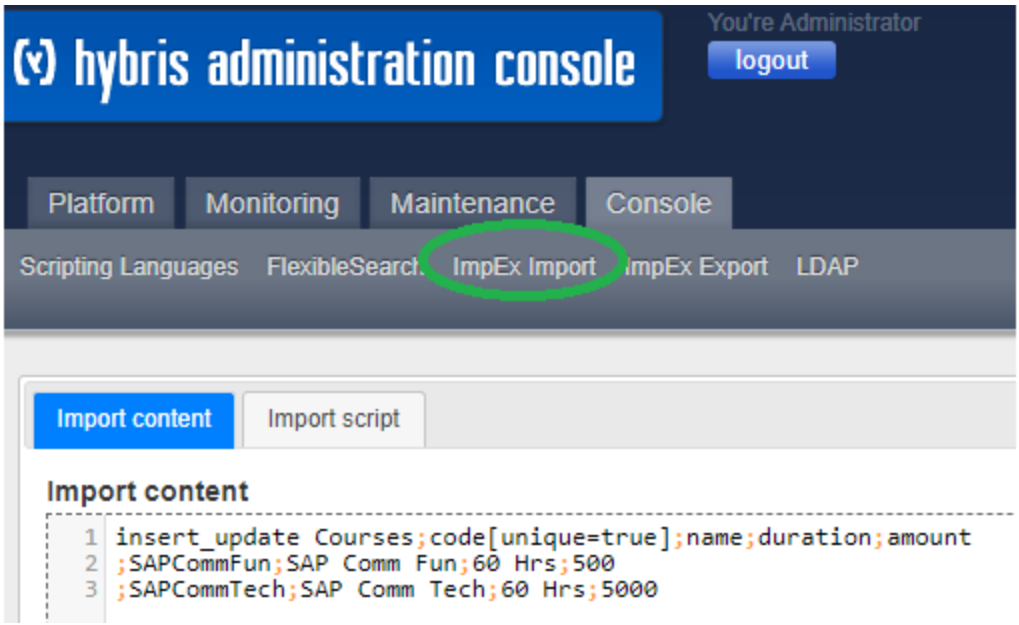


Q1 = How to insert few records into above table (or) itemtype?

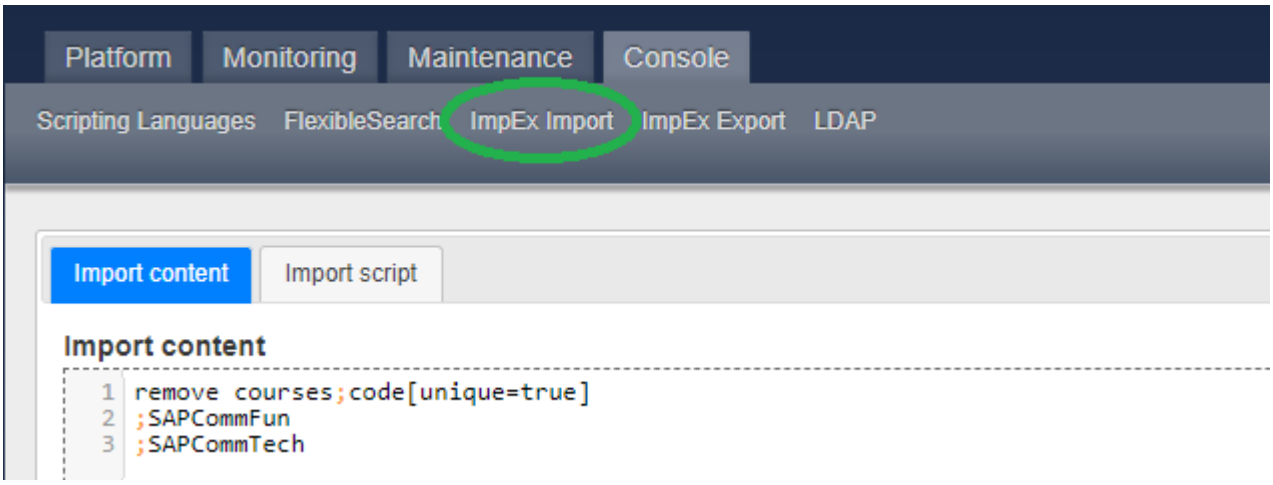
Results =



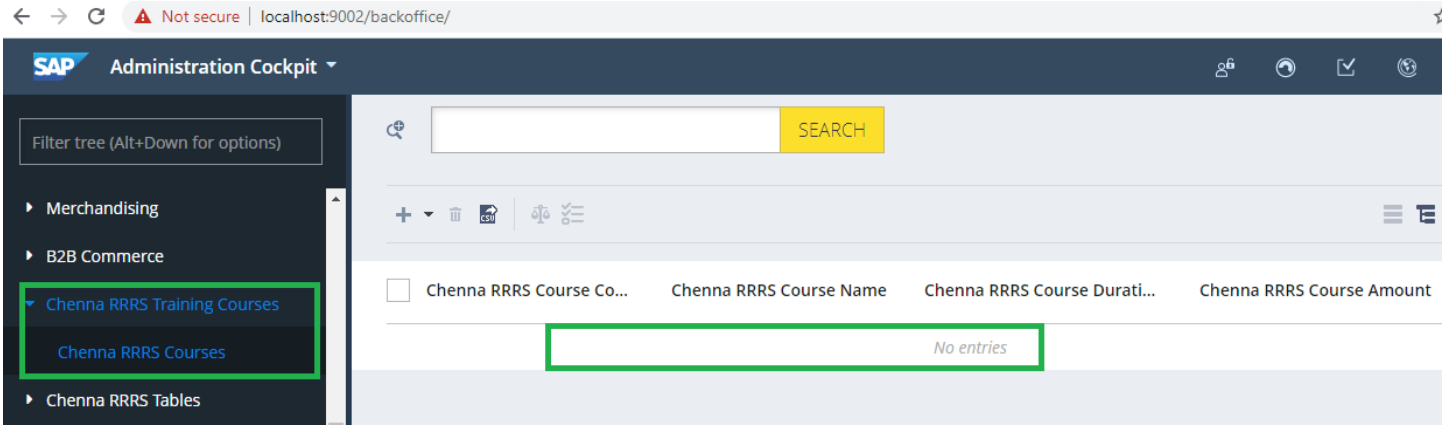
ImpEx =



Q2 = How to remove few records?



Results =

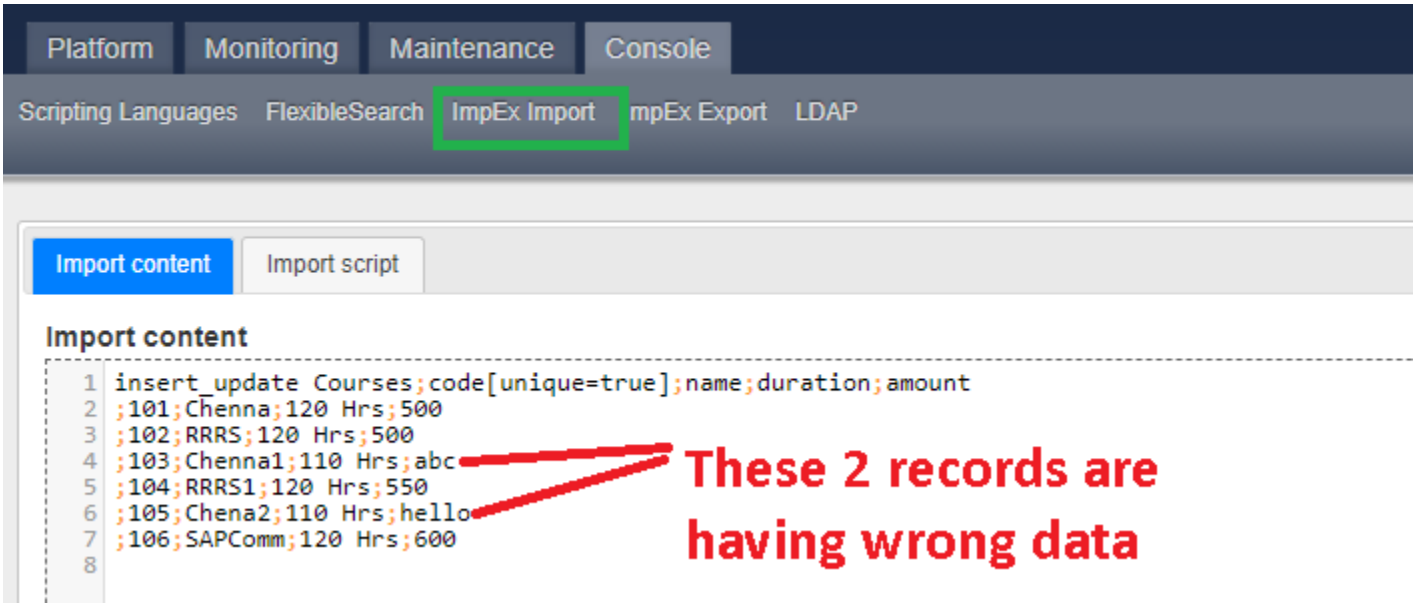


Scneario = Let's say … We have 20K records coming from SAP system & you are loading those.

But 1621 and 1881 records is having error.

Q = What happens in this case.

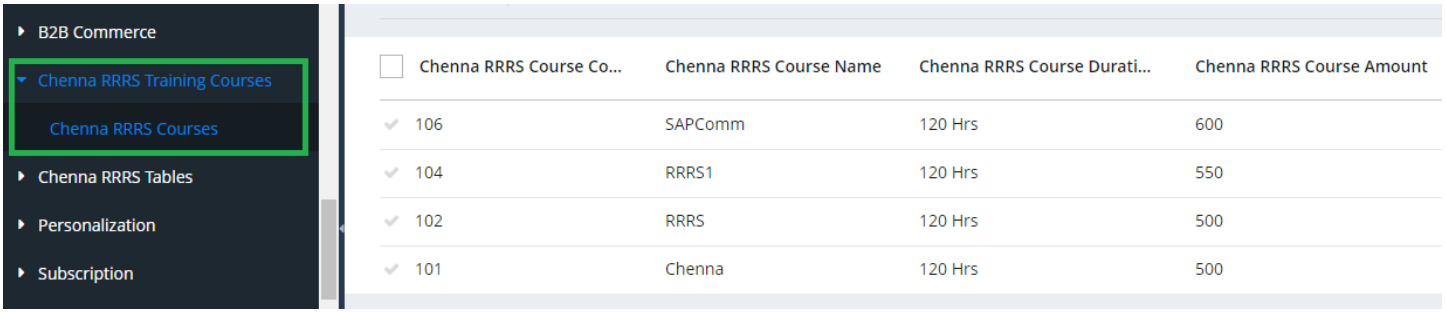
1) All records will not be processed
2) **Only 1621 & 1881 records are not processed**
3) Upto 1620 record is processed
4) All above?



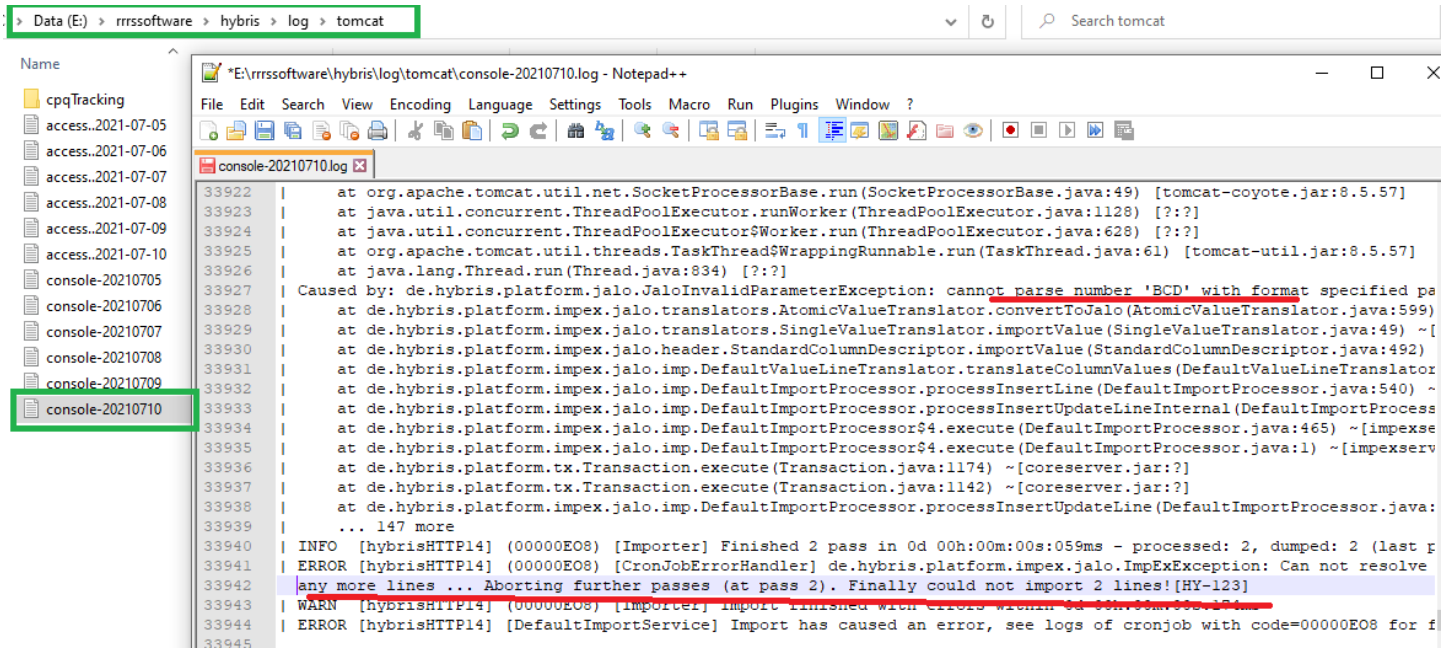
Failed Record details

```
insert_update Courses;code[unique=true];name;duration;amount
",,,,cannot parse number 'abc' with format specified pattern '#,##0' due to Unparseable number: ""abc""";103;Chenna1;110 Hrs;abc
",,,,cannot parse number 'hello' with format specified pattern '#,##0' due to Unparseable number: ""hello""";105;Chena2;110 Hrs;hello
```

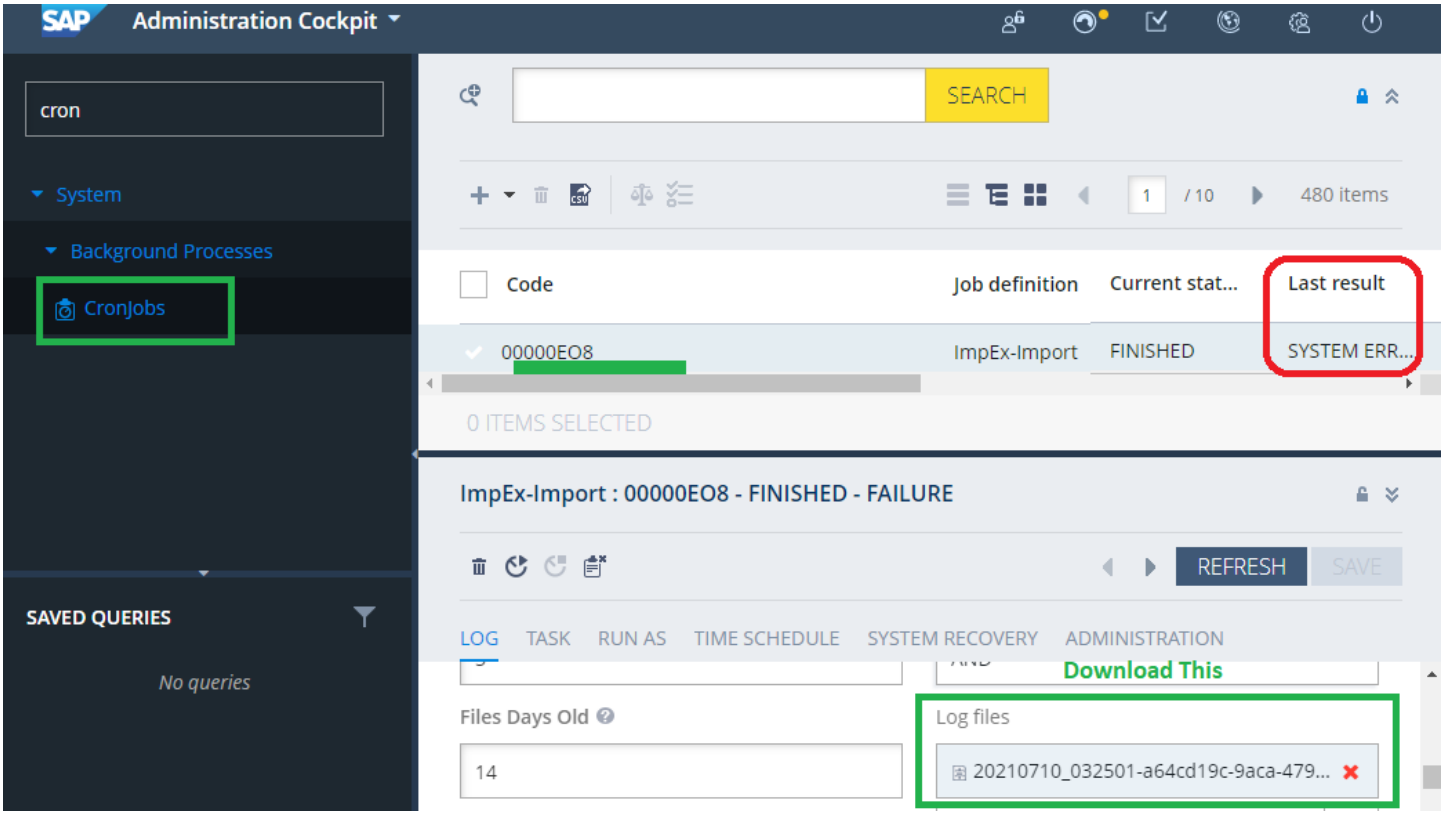
Results =



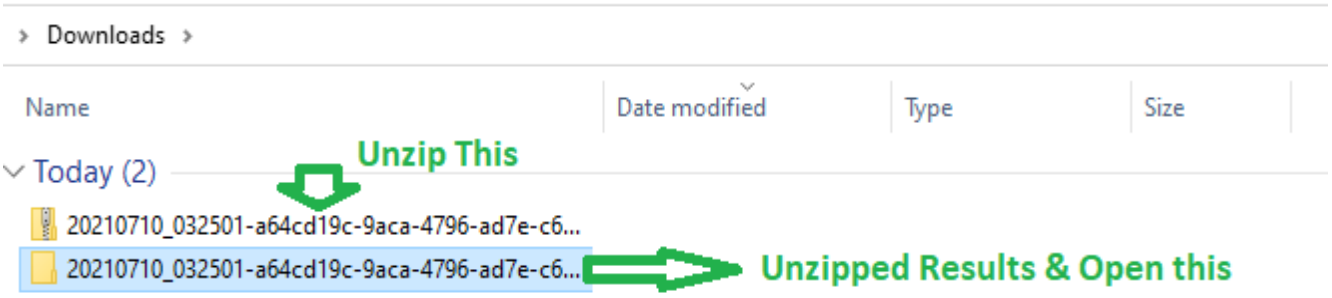
How to see the failed record details?

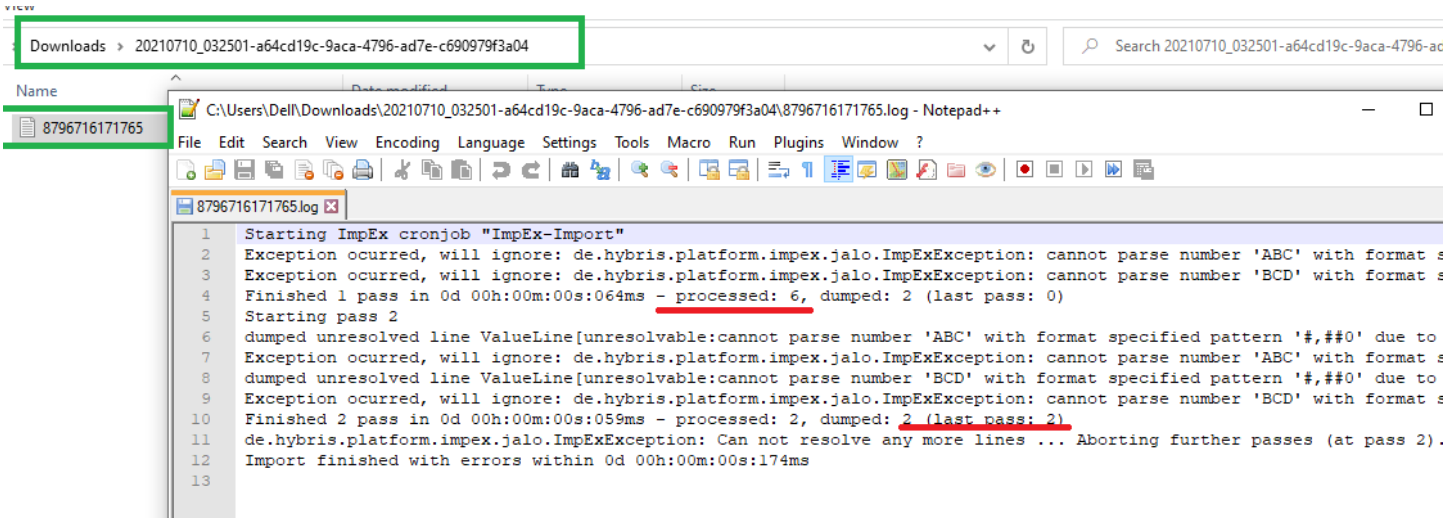


(OR)

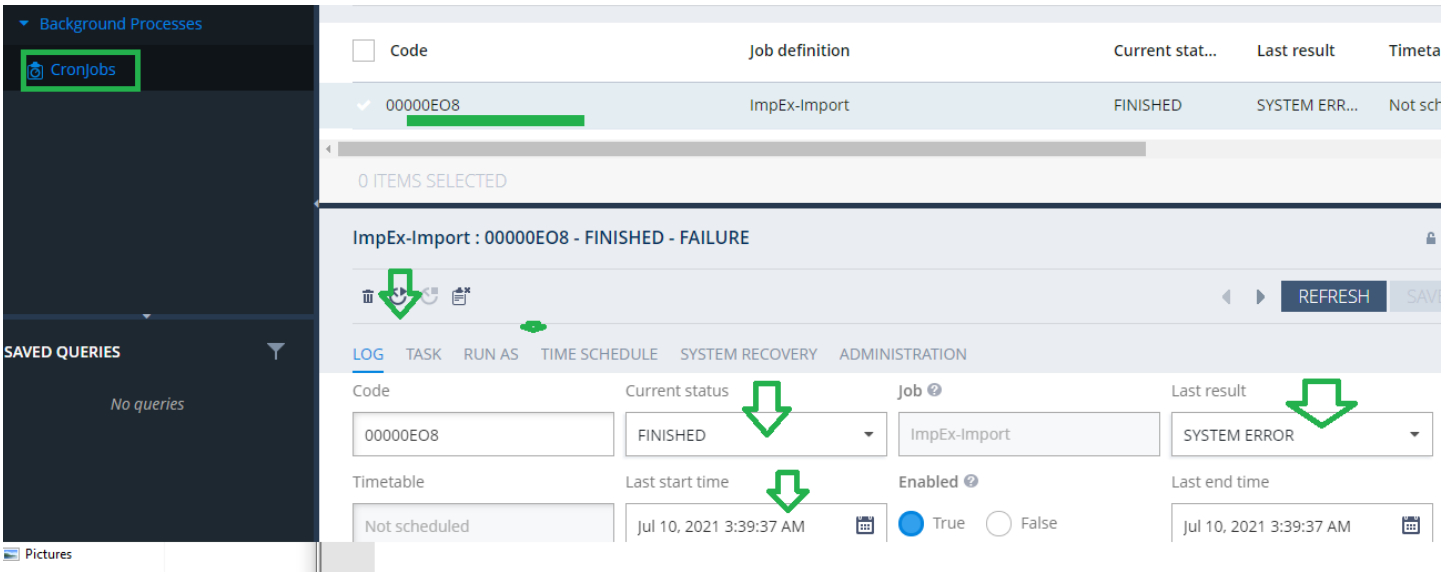


== Download the Log file

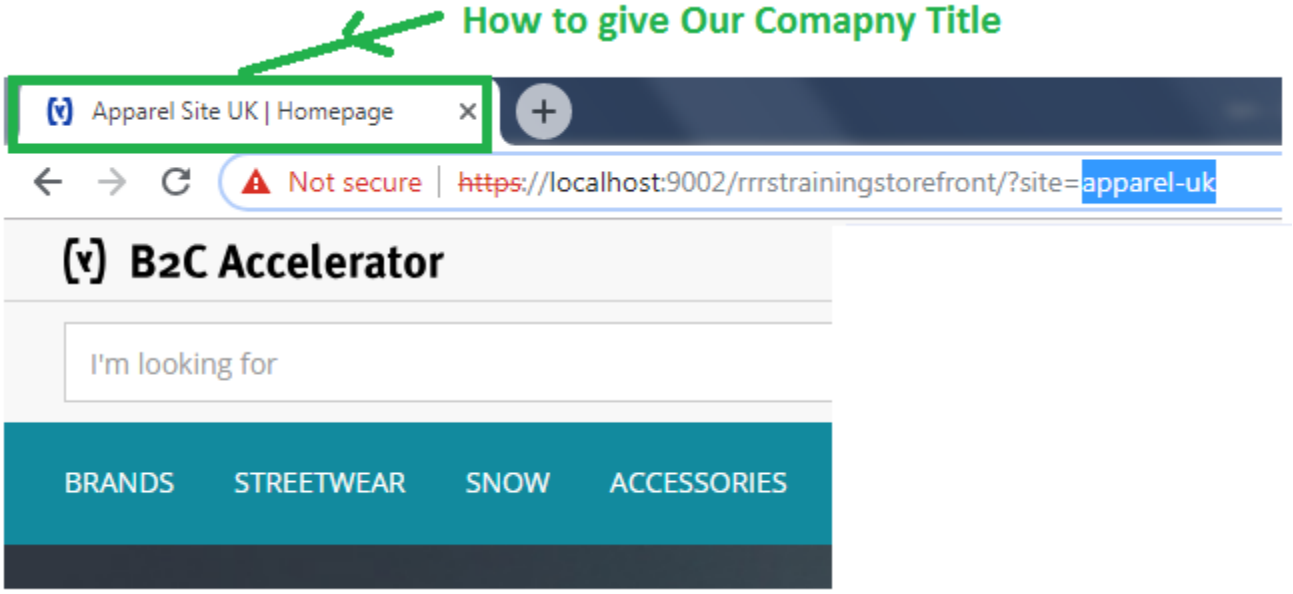


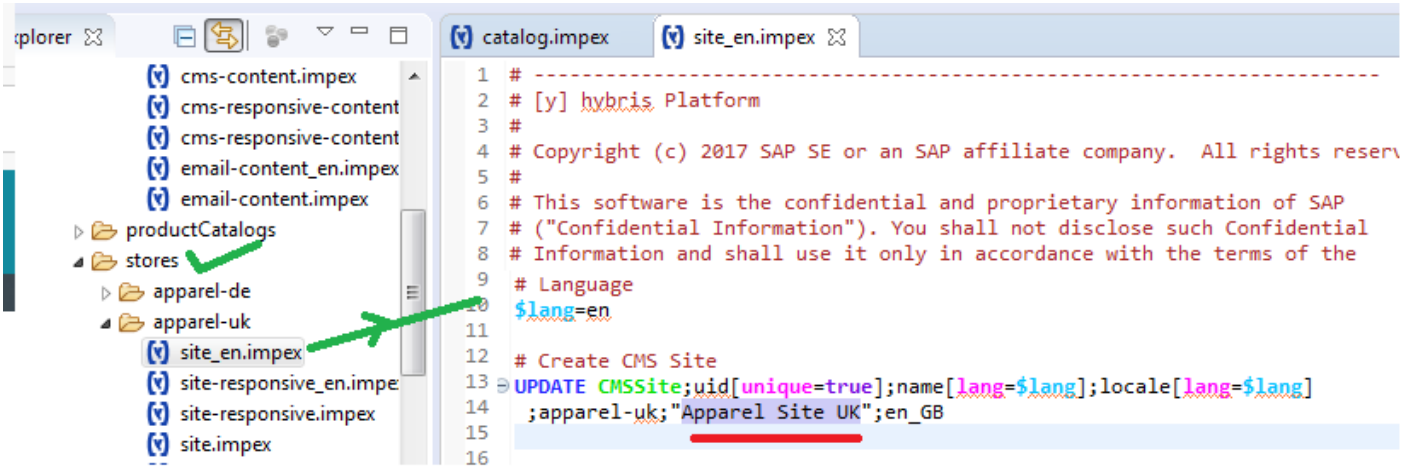


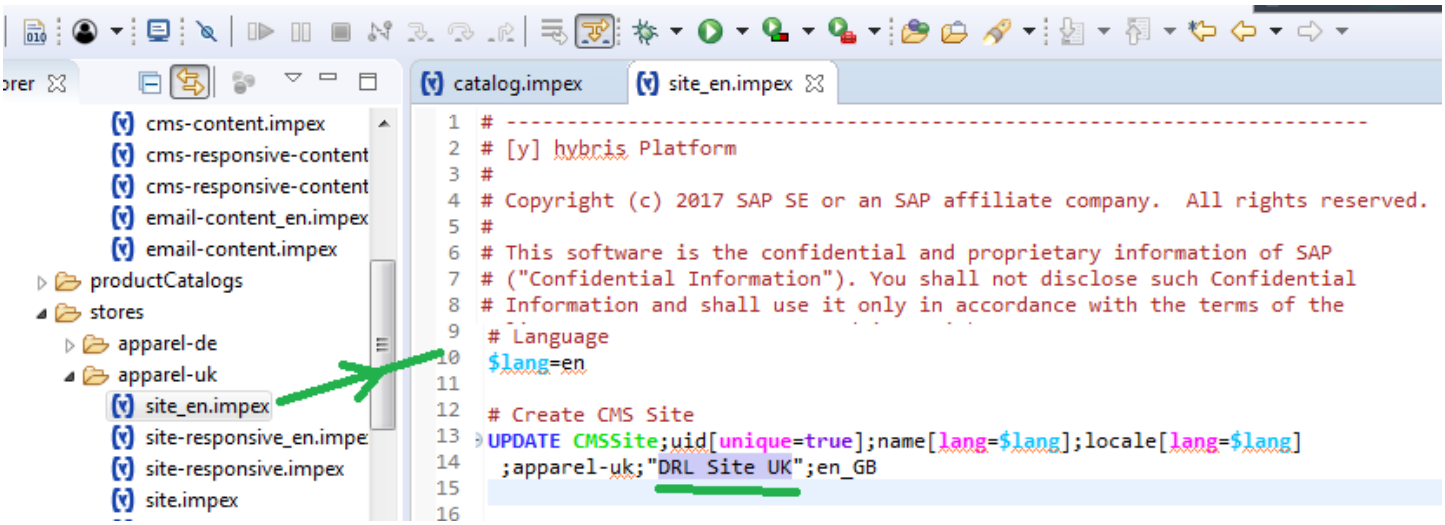
==== We can see the Job details as showin below sceenshot: -

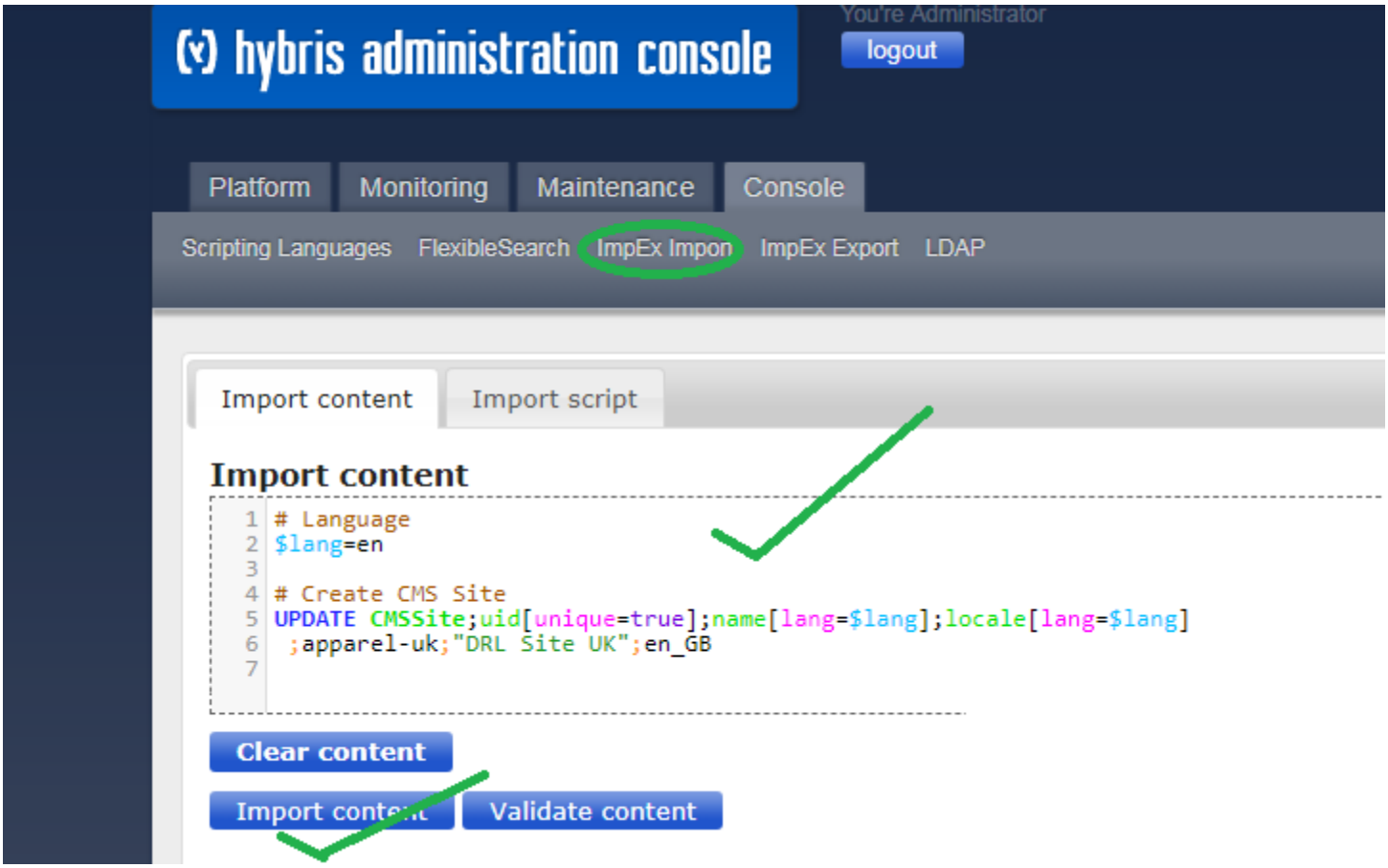


Requirement = How to change the Site Title?

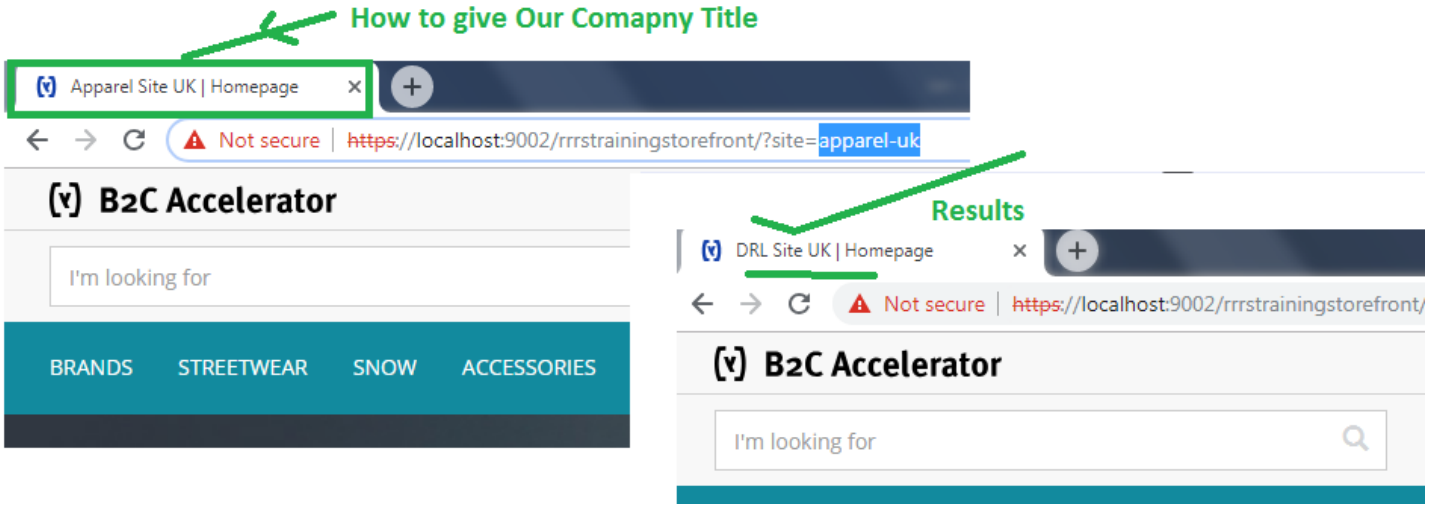




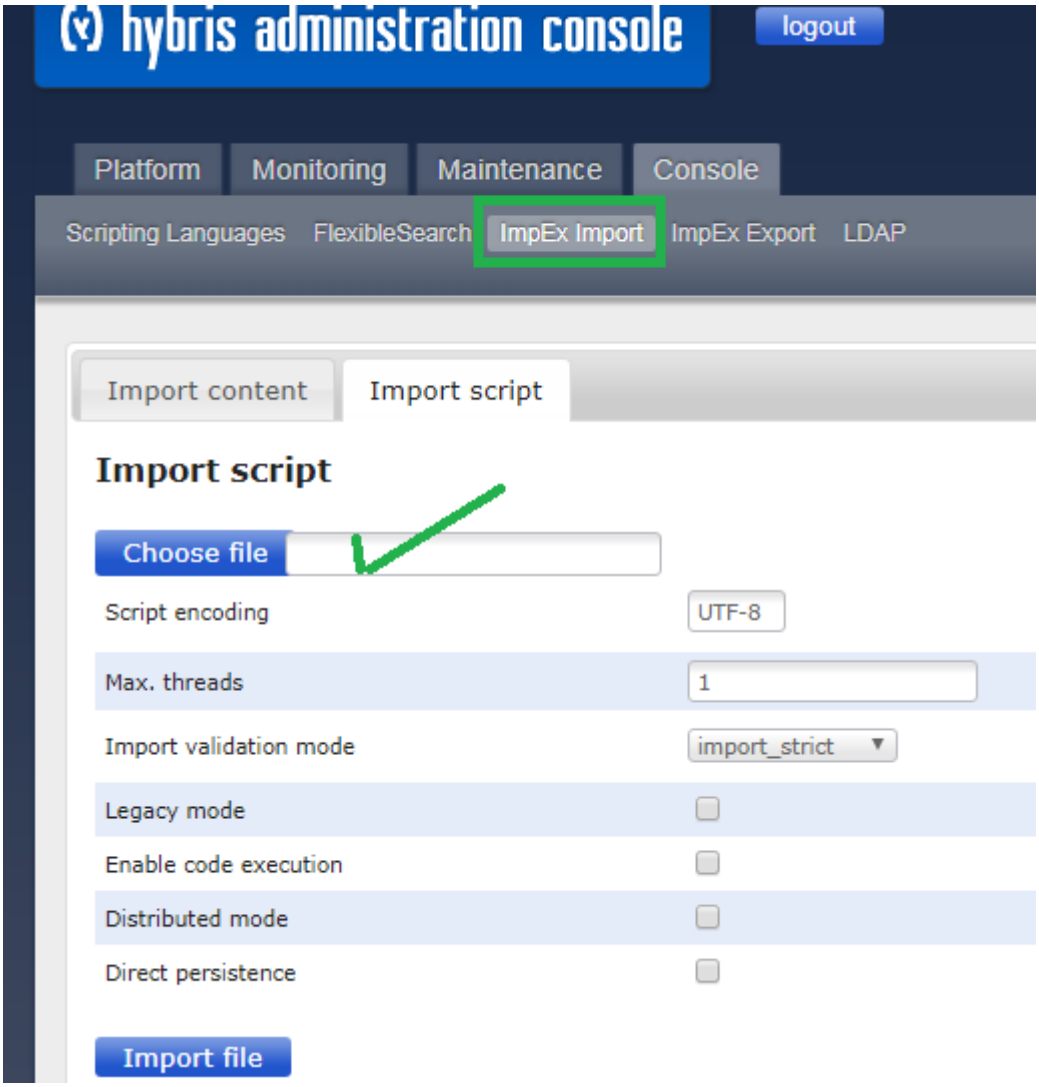



hybris administration console
You're Administrator
logout
Platform
Monitoring
Maintenance
Console
Scripting Languages
FlexibleSearch
ImpEx Impon
ImpEx Export
LDAP
Import content
Import script
Import content
1 # Language
2 $lang=en
3
4 # Create CMS Site
5 UPDATE CMSSite;uid[unique=true];name[lang=$lang];locale[lang=$lang]
6 ;apparel-uk;"DRL Site UK";en_GB
7
Clear content
Import content
Validate content

Results =

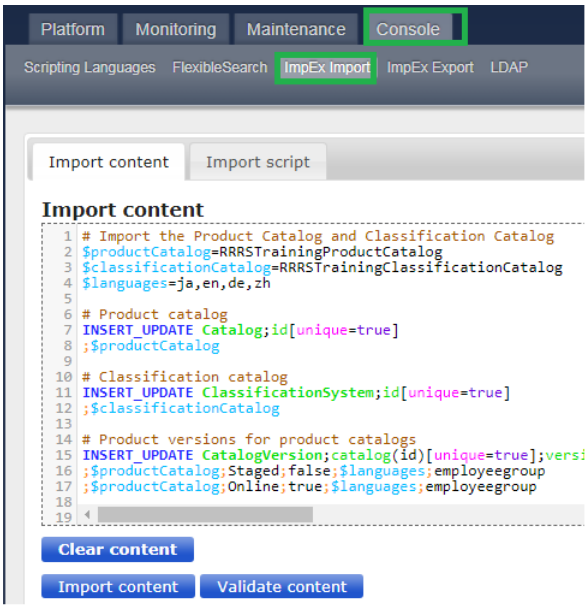

How to give Our Comapny Title
Apparel Site UK | Homepage
Not secure
https://localhost:9002/rrrstrainingstorefront/?site=apparel-uk
B2C Accelerator
I'm looking for
BRANDS
STREETWEAR
SNOW
ACCESSORIES
Results
DRL Site UK | Homepage
Not secure
https://localhost:9002/rrrstrainingstorefront/
B2C Accelerator
I'm looking for

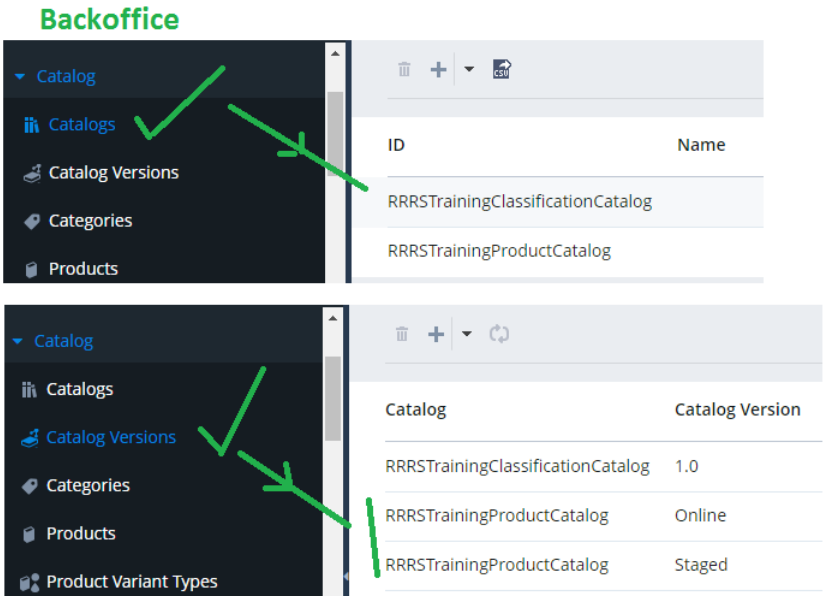
Q = How to import the ImpEx which is already there in file?



Example – Import below ImpEx: -

```
# Import the Product Catalog and Classification Catalog
$productCatalog=RRRSTrainingProductCatalog
$classificationCatalog=RRRSTrainingClassificationCatalog
$languages=ja,en,de,zh

# Product catalog
INSERT_UPDATE Catalog;id[unique=true]
;$productCatalog

# Classification catalog
INSERT_UPDATE ClassificationSystem;id[unique=true]
;$classificationCatalog

# Product versions for product catalogs
INSERT_UPDATE CatalogVersion;catalog(id)[unique=true];version[unique=true];active;languages(isoCode);readPrincipals(uid)
;$productCatalog;Staged;false;$languages;employeegroup
;$productCatalog;Online;true;$languages;employeegroup

# Insert Classifications System Version
INSERT_UPDATE ClassificationSystemVersion;catalog(id)[unique=true];version[unique=true];active;inclPacking[virtual=true,default=true];
inclDuty[virtual=true,default=true];inclFreight[virtual=true,default=true];inclAssurance[virtual=true,default=true]
;$classificationCatalog;1.0;true
```





Business Scenario = Assume that Business did not write ImpEx to insert Records into **Courses**.

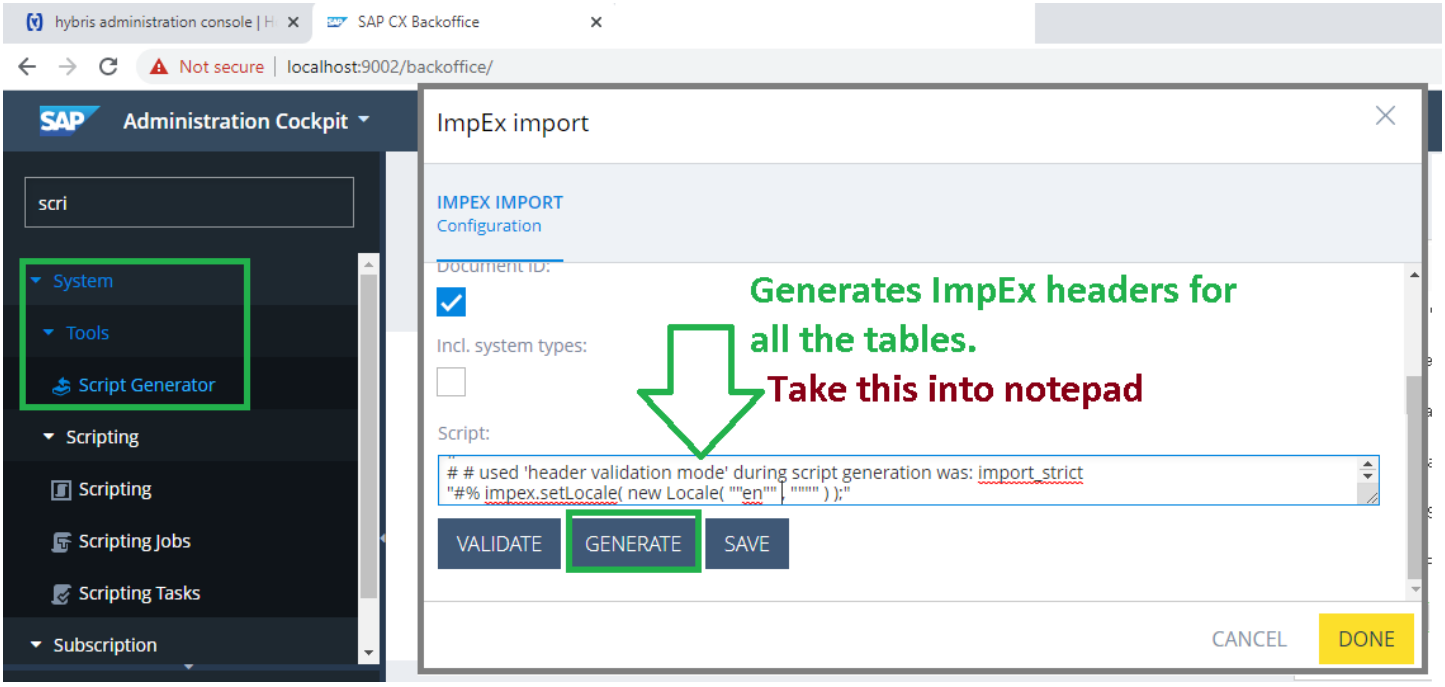
Business Entered the Records directly from Backoffice [Dev System].

Q1 = How to move above entered records into other Environments (QA … UAT … Prod). (or)

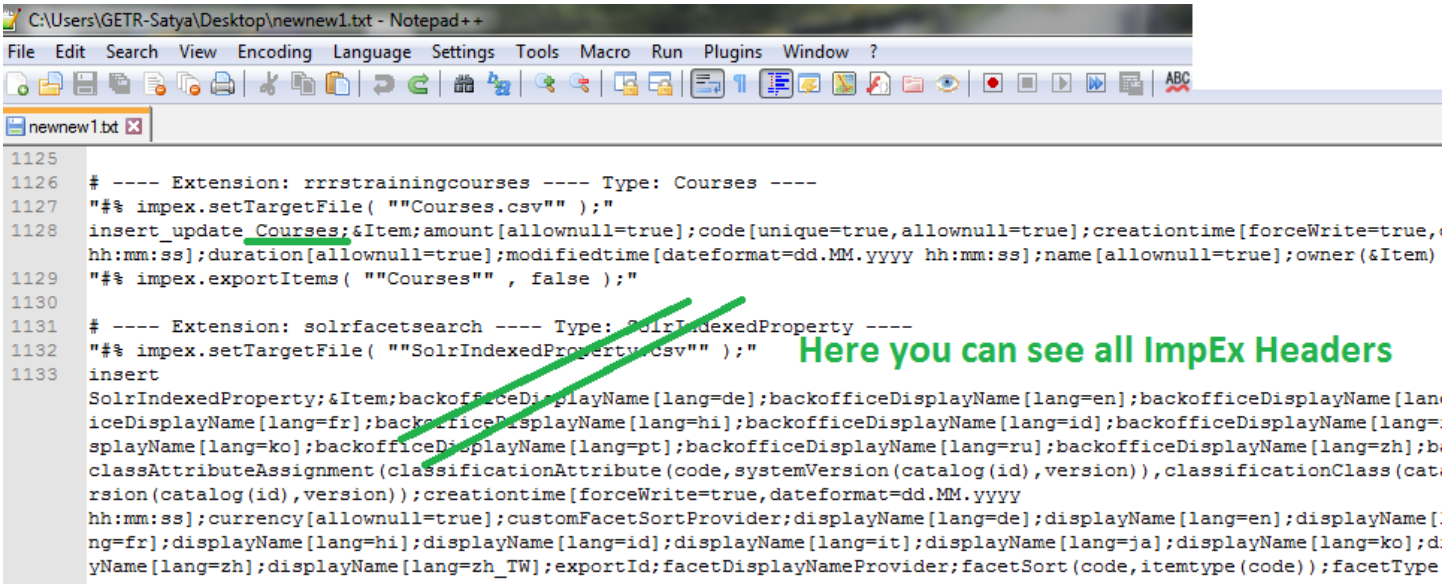
Q2 = Sometimes, it's difficult to write the ImpEx headers. Is there any way you can download (or) check (or) take the ImpEx headers? (or)

Q3 = How to use the Script Generators?

Step 1 = Backoffice – Script Generator



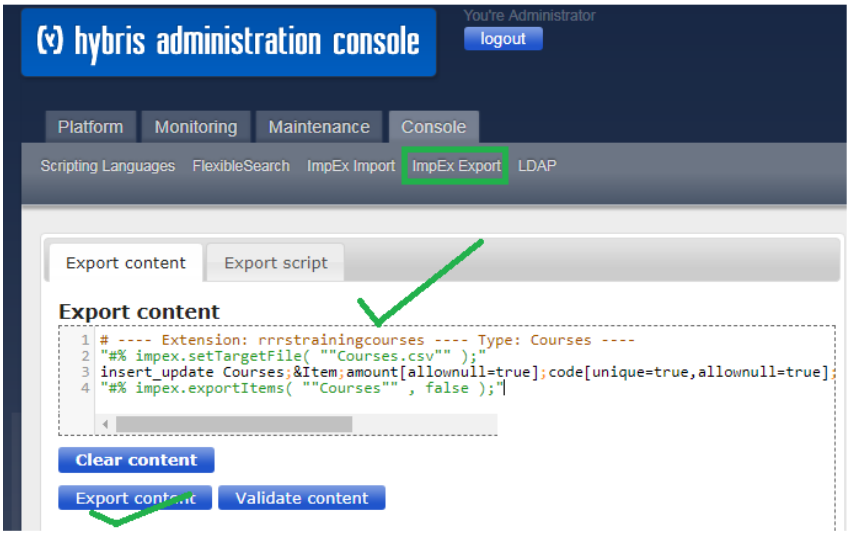
Step 2 = Take the Generated ImpEx headers into Notepad

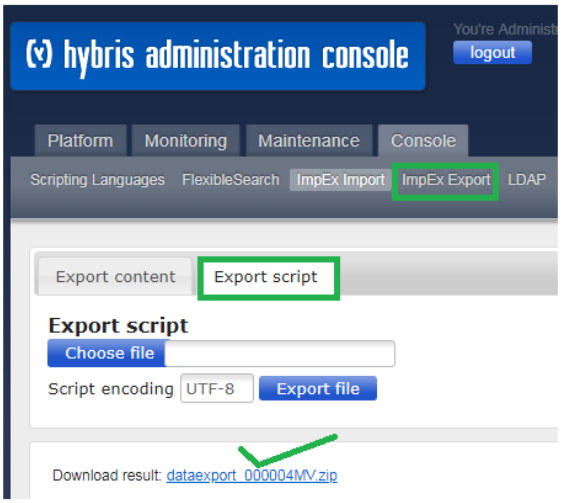



```
# ---- Extension: chennarrrstrainingcore ---- Type: Courses ----
"#% impex.setTargetFile( ""Courses.csv"" );"
insert_update Courses;&Item;amount[allownull=true];code[unique=true,allownull=true];duration[allownull=true];name[allownull=true]
"#% impex.exportItems( ""Courses"" , false );"
```

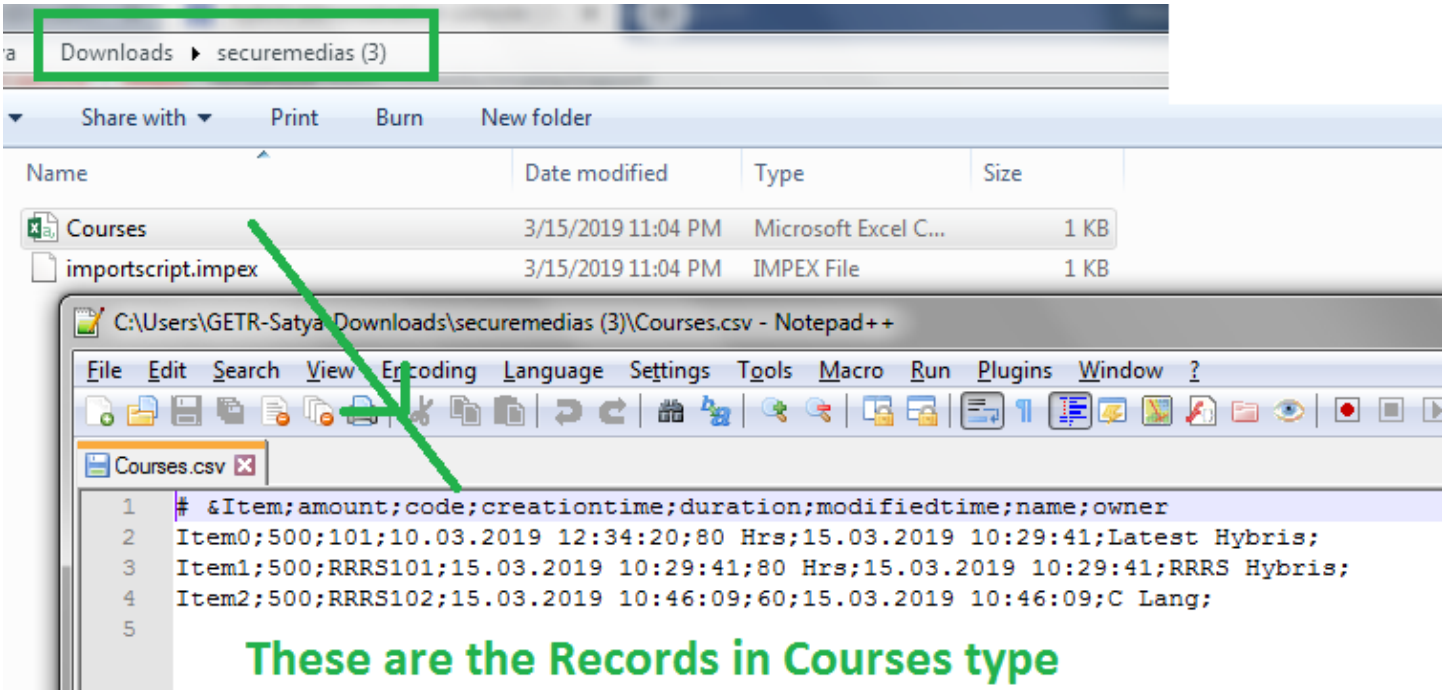
ImpEx Header for Courses

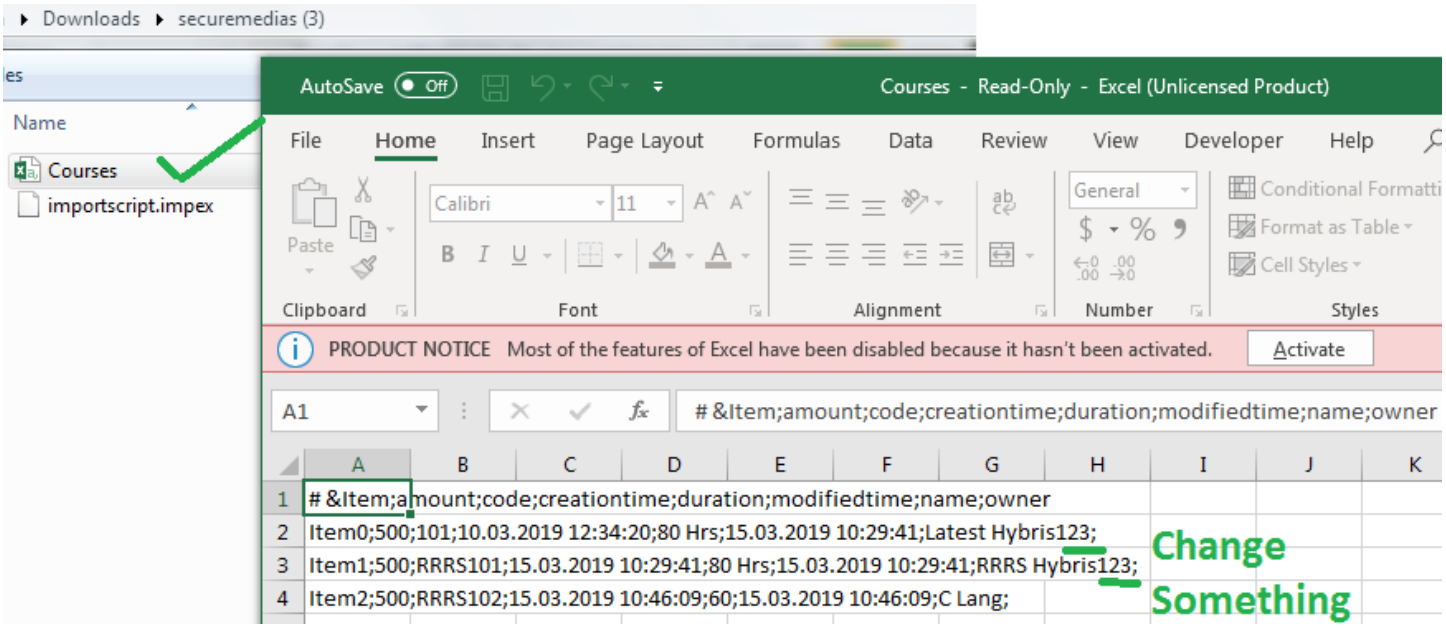
Step 3 = Take the **Courses** ImpEx Header & fetch (or) get the Records from source Env [Dev System].

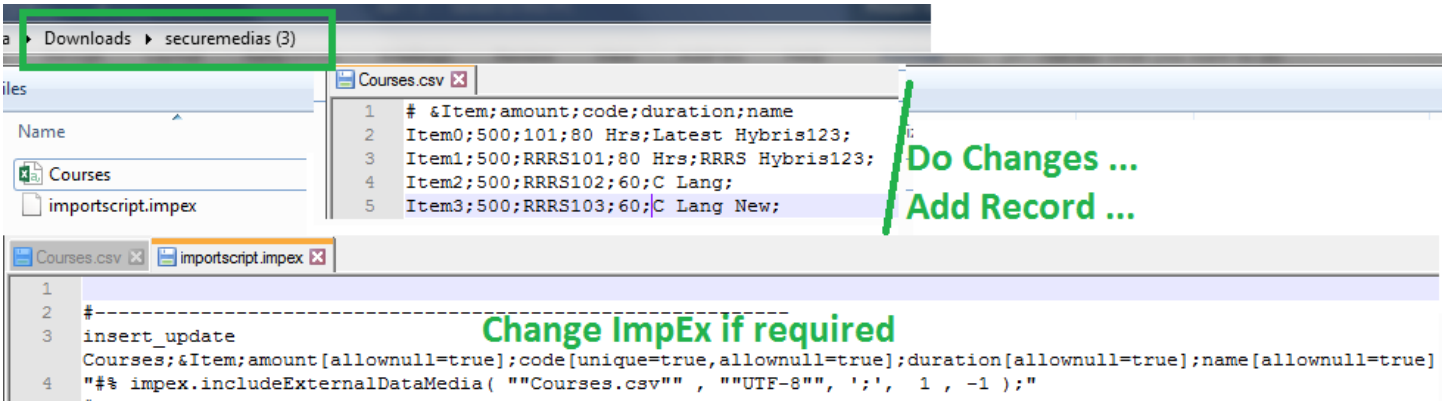


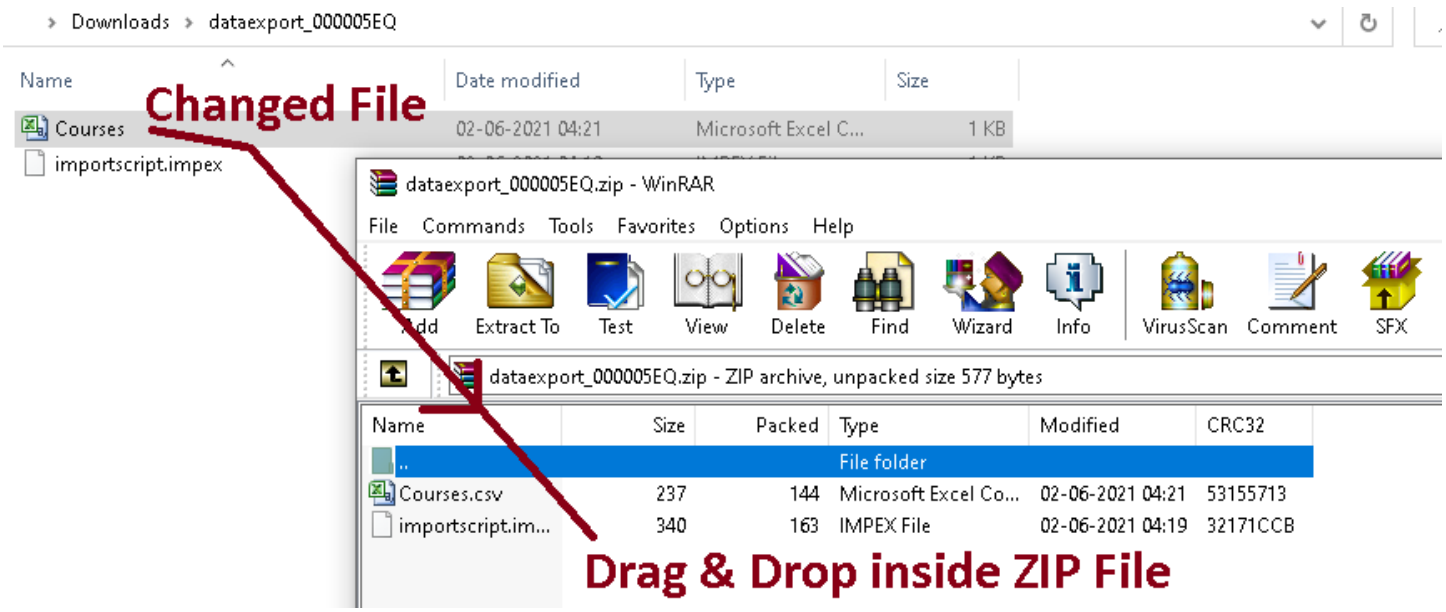


Unzip the download file.

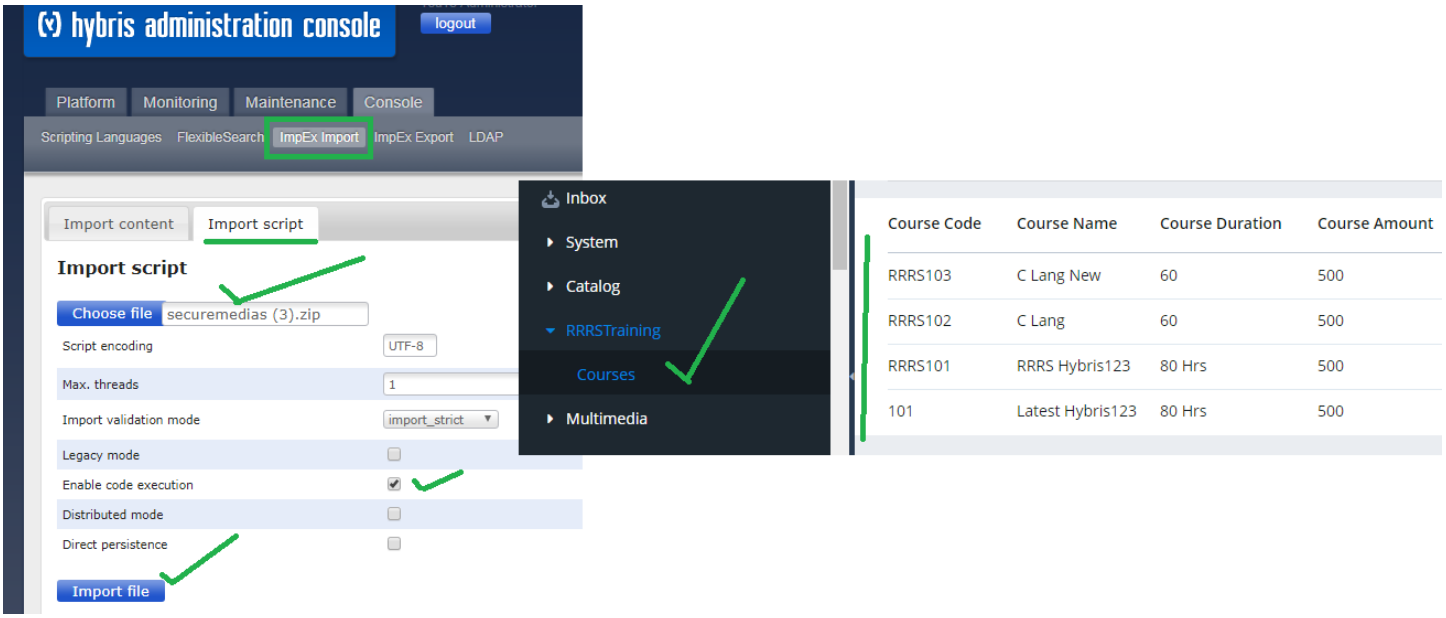


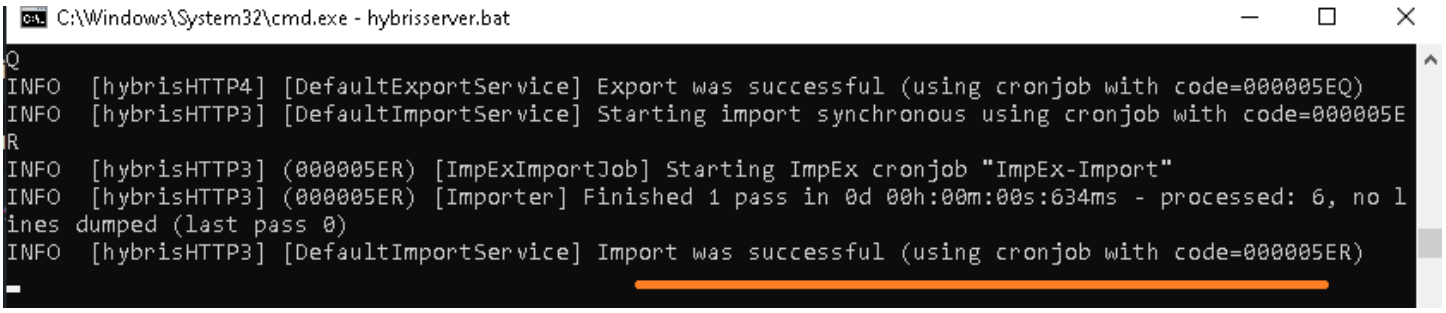

Downloads ▸ securemedias (3)
Name
Courses
importscript.impex
AutoSave Off
Courses - Read-Only - Excel (Unlicensed Product)
File Home Insert Page Layout Formulas Data Review View Developer Help
Paste
Clipboard
Calibri
11
Font
Alignment
General
Number
Conditional Formatti
Format as Table
Cell Styles
Styles
PRODUCT NOTICE Most of the features of Excel have been disabled because it hasn't been activated.
Activate
A1
&Item;amount;code;creationtime;duration;modifiedtime;name;owner
1 # &Item;amount;code;creationtime;duration;modifiedtime;name;owner
2 Item0;500;101;10.03.2019 12:34:20;80 Hrs;15.03.2019 10:29:41;Latest Hybris123;
3 Item1;500;RRRS101;15.03.2019 10:29:41;80 Hrs;15.03.2019 10:29:41;RRRS Hybris123;
4 Item2;500;RRRS102;15.03.2019 10:46:09;60;15.03.2019 10:46:09;C Lang;
Change
Something


Downloads ▸ securemedias (3)
Name
Courses
importscript.impex
Courses.csv
1 # &Item;amount;code;duration;name
2 Item0;500;101;80 Hrs;Latest Hybris123;
3 Item1;500;RRRS101;80 Hrs;RRRS Hybris123;
4 Item2;500;RRRS102;60;C Lang;
5 Item3;500;RRRS103;60;C Lang New;
Do Changes ...
Add Record ...
Courses.csv
importscript.impex
Change ImpEx if required
insert_update
Courses;&Item;amount[allownull=true];code[unique=true,allownull=true];duration[allownull=true];name[allownull=true]
"#% impex.includeExternalDataMedia(""Courses.csv"" , ""UTF-8"", ';', 1 , -1);"

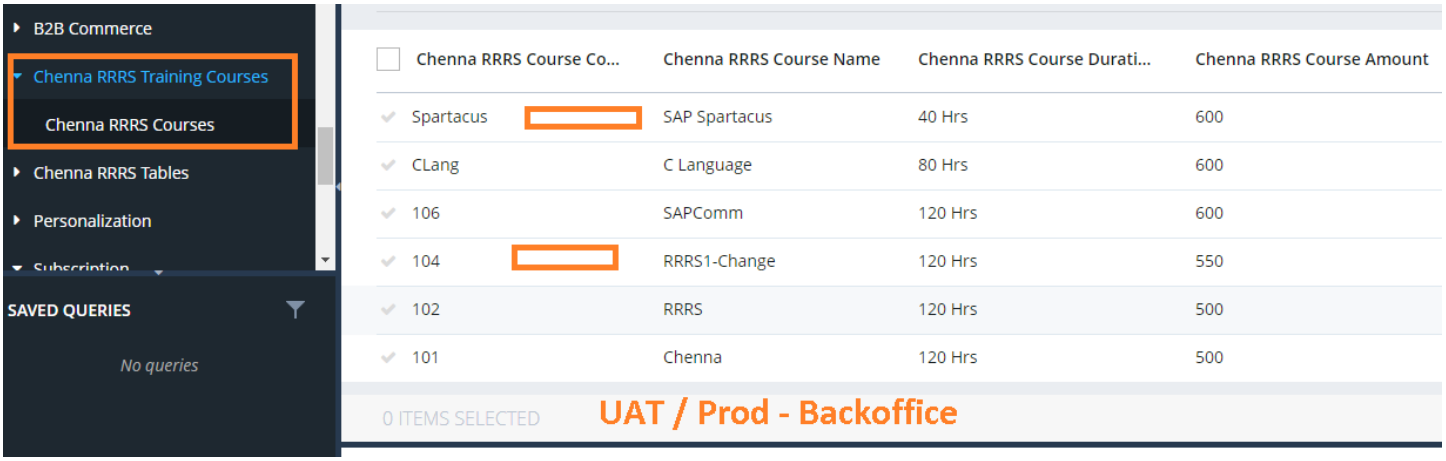

Downloads ▸ dataexport_000005EQ
Name
Date modified
Type
Size
Changed File
Courses
02-06-2021 04:21
Microsoft Excel C...
1 KB
importscript.impex
dataexport_000005EQ.zip - WinRAR
File Commands Tools Favorites Options Help
Add
Extract To
Test
View
Delete
Find
Wizard
Info
VirusScan
Comment
SFX
dataexport_000005EQ.zip - ZIP archive, unpacked size 577 bytes
Name
Size
Packed
Type
Modified
CRC32
..
File folder
Courses.csv
237
144
Microsoft Excel Co...
02-06-2021 04:21
53155713
importscript.im...
340
163
IMPEX File
02-06-2021 04:19
32171CCB
Drag & Drop inside ZIP File

Step 4 = Go to the Target Evn [UAT / Prod] & Import the Records.





Results =



InitialDataSystemSetup.java

In this file, you can specify what ImpEx you want to execute during hAC - Update (or) hAC - INIT?

@SystemSetup(type = Type.PROJECT, process = Process.ALL)

public void **createProjectData(**final SystemSetupContext context)

{ ====== What ImpEx Files you need to load ====== }

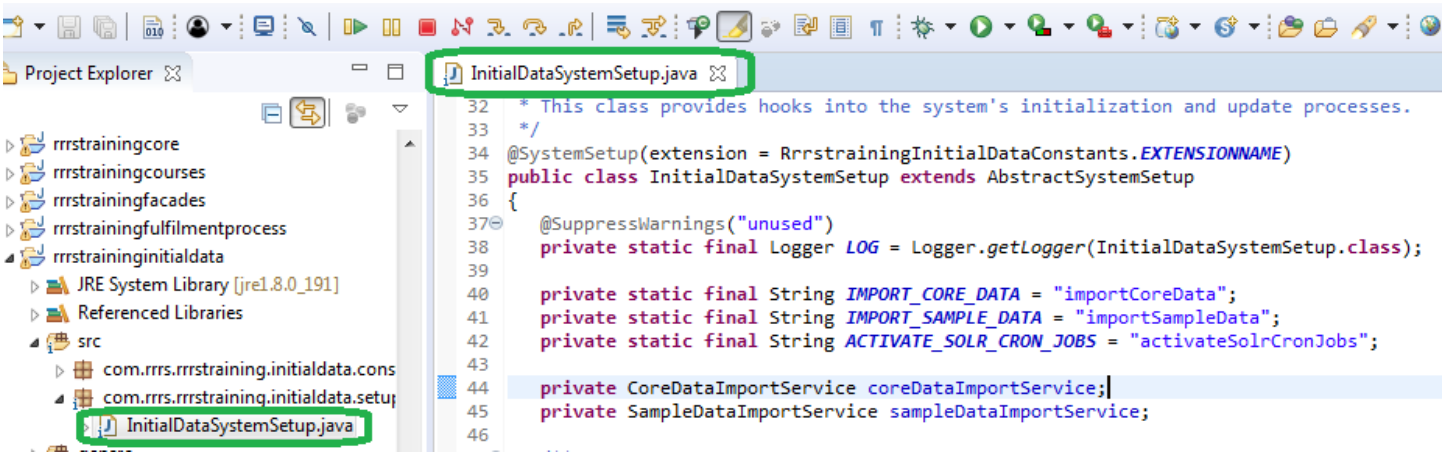
@SystemSetup(type = Type.ESSENTIAL, process = Process.ALL)

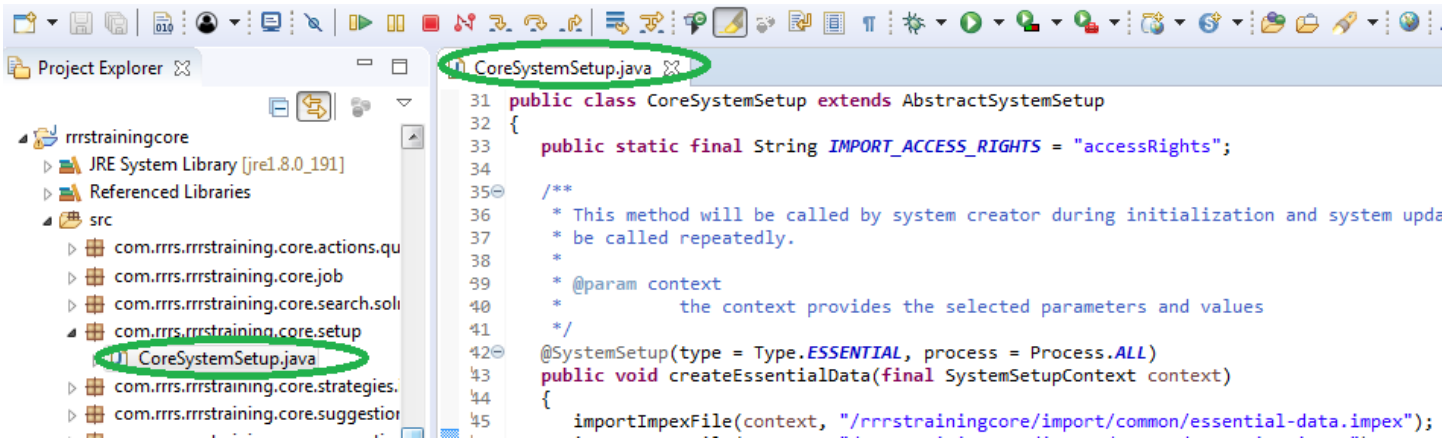
public void **createEssentialData(**final SystemSetupContext context)

{

====== What ImpEx Files you need to load =====

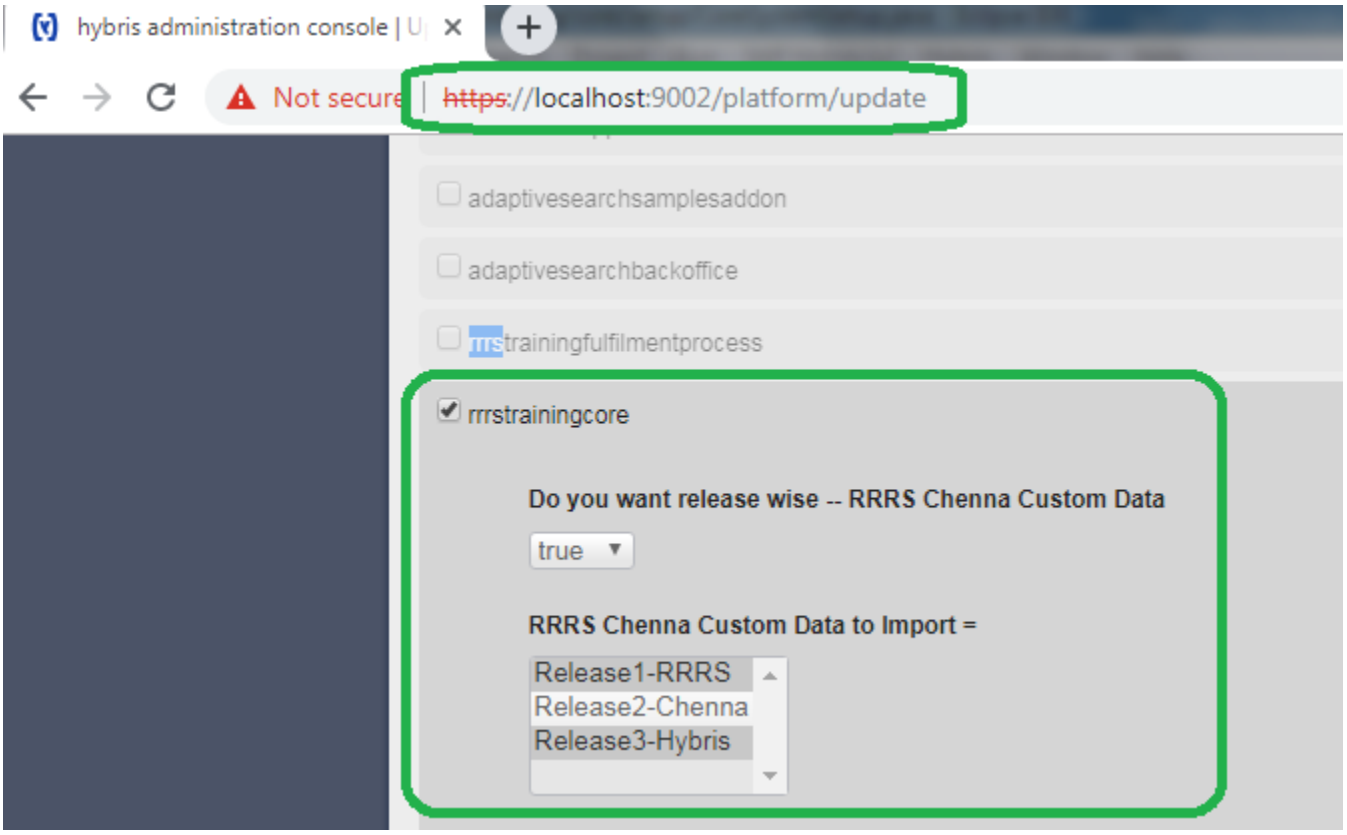
}

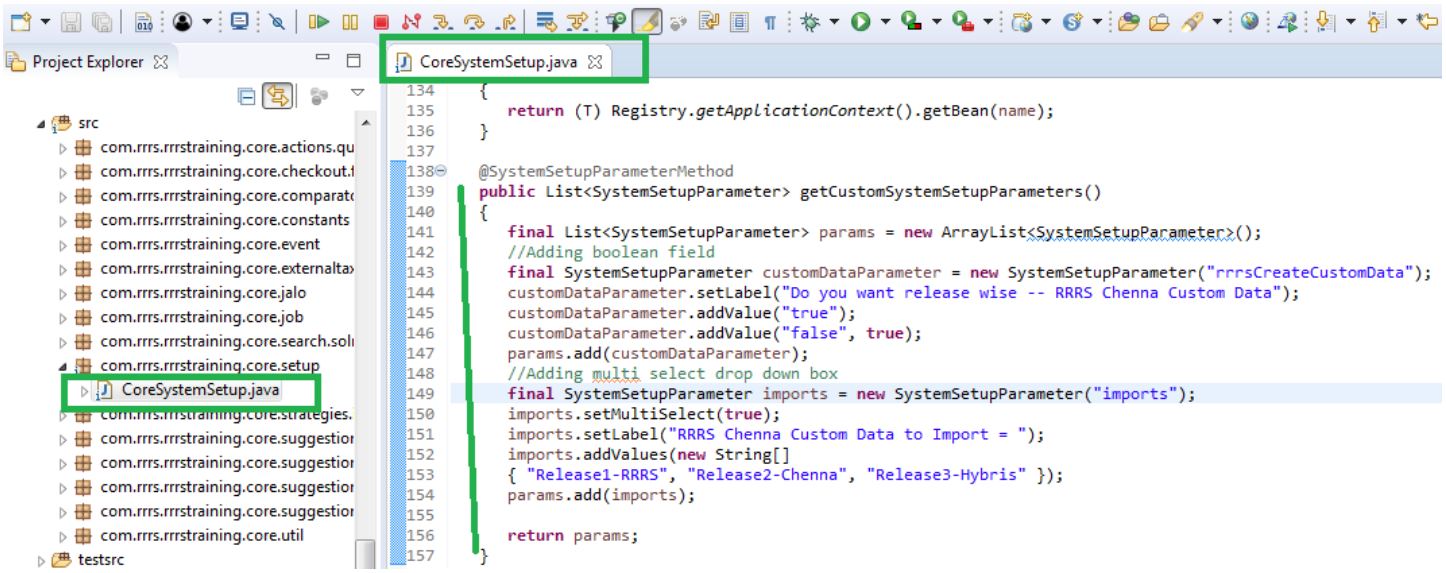


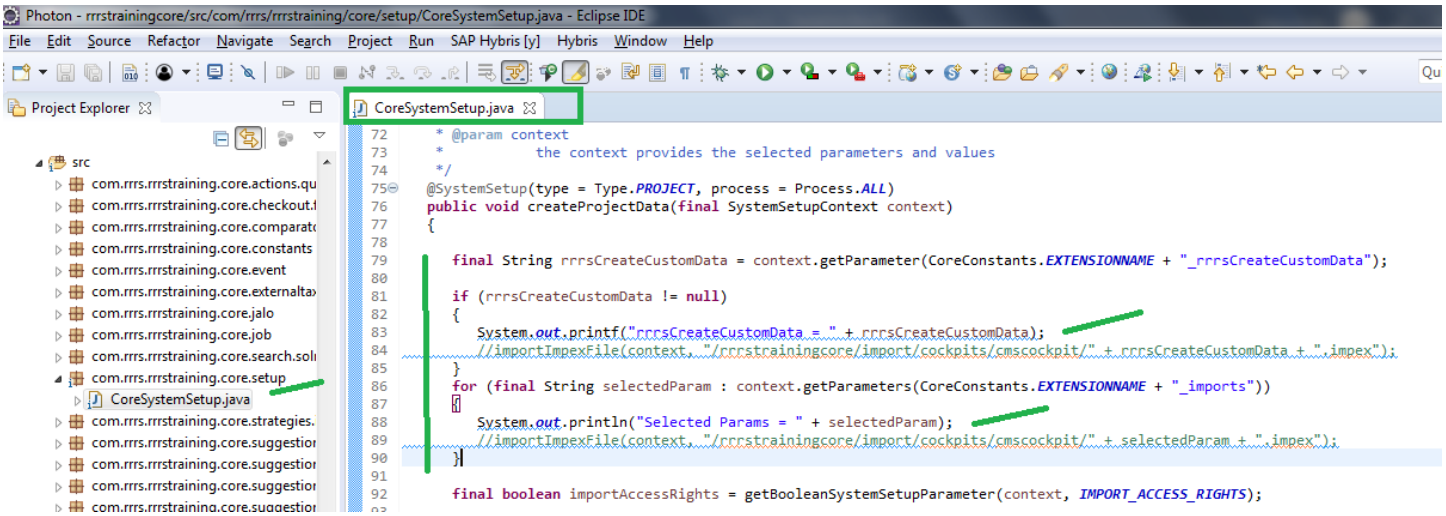


Business Scenario = Generally in companies, each release will have some Impex's. Assume that, we want to allow only that release impex needs to be executed (or) imported. How to provide this flexibility to select the release wise Impex's.

(or) **hAC Customization** Example: -







Note = In latest version – We have “Patch Framework” for release wise impex updates.

http://techhybris.com/sap-hybris-patch-framework/

Q = What is distributed Impex?

✓ A new ImpEx engine that enables you to import large volumes of data using power of the whole cluster.

✓ Distributed ImpEx engine enables you to import Platform items from huge & complex external files (Eg, files that contain many dependencies between items), and at the same time it delivers exceptional performance.

Q = Where is OOTB ImpEx code?

✓ The impex code located in

c:\rrrssoftwares\hybris\bin\platform**ext\impex** folder

✓ There is an impex engine under bin folder (impexserver.jar)

✓ ImpEx engine will use Apache POI library (responsible to read data from excel & to write into excel etc.)

Q = If you want to extend / create your own UI component for a cockpit the GUI web framework you have to use is:

o ZK o Spring MVC o AJAX o JSP

Q = Each time you implement a custom webservice resource in hybris to complete the build and deploy process you must

o Run the ant webservice nature task

o Run the ant clean all task

o Edit the relevant spring.xml file and run ant

o Do nothing. New webservice resources are auto compiled and hot deployed

Q = The hybris platform is configured to run against HSQL by default, which of the following is true?

o HSQL is the recommended DB to use for production environments

o Configuring HSQL to run in memory is a useful configuration for debugging transactions

o HSQL is only recommended for development or test environments

o Configuring HSQL is run in memory is the recommended way to guarantee good performance in clustered production environments.

Q = When defining enum types for use by hybris item type which of the below is true?

o Enum types must be defined in java code before being reference by hybris generated item classes

o Enum types can be defined by using the <enumtyype> tag in relevant –items.xml

o Enum types can be defined inside the <itemtype> tag of the item type which needs to reference them

o A default value can be set using the <defaultvalue> tag in relevant –tems.xml

Q = When your extension has dependency on one of the platform extensions (like validation or catalog) you need to:

o Use the requires tag in extensioninfo.xml file of your extension

o Use the requires tag in local.properties file of config project

o Usually nothing, dependencies on platform are resolved by default

o Use the import extension in your java code to import the extension you wish to import

Q = In which case you must restart the hybris server for your changes to take effect

o After initializing the system data for first time

o After creating or updating cockpit configuration file

o After adding a new spring bean to one of spring configuration file

o After editing any JSP files

Q = In the development environment you wanted to configure a setting to specify a JDBC url the best place to put it would be

o The extensioninfo.xml file of your extension

o The project.properties file in platform bin directory

o The localextensions.xml in configuration directory/Eclipse project

o The local.properties in configuration directory/Eclipse project

Q = Which of the following is true about the configuration setting in project.properties file in the server platform directory?

o System configuration setting should not be added to this file, because the file will be overridden when you update the platform version

o After any changes are made to this file a complete clean and rebuild should be performed using ant clean all

o Any local properties you set in your extensions or in the configuration folder/Eclipse project will override any properties in this file

Q = Which of the following are bad principles of OOD?

o Tight coupling of objects for robust code

o Tight cohesion of methods for modular approach

o Encapsulation of data to enable loose coupling

o Naming classes with verbs or doing words like clean Database or Verify Customer to make it clear to other developers