**AWK**

* AWK is scripting language an used for manipulating data.
* AWK is mostly used for pattern processing and scanning.

We can do below operation along with **AWK**

Operations :

* Scans a file line by line.
* Splits each input line into fields.
* Compares input line/fields to pattern.
* Perform actions on matched lines

Useful for

* Transform data files
* Produce formatted reports

Unix Scripting

* Format output lines
* Arithmetic and string operations
* Conditional and loops

**Syntax:**

awk options ‘selection\_criteria {action}’ file

* **Default behavior of AWK**

AWK prints each line of file

Command: awk '{print}' f2

* **Print the lines which match the pattern**

awk '/manager/{print}' employee

* **Splitting a line into fields**

Awk command splits the record delimited by white space character by default and stores it in $n variables . n- any number

awk '{print $1,$4}' employee

**AWK built in variables**

**NR:** NR command keeps a current count of number of input records

**NF:** NF command keeps a count of Number of fields

* **Display line number for each line of file**

awk '{print NR,$0}' employee

**$0 – indicates complete line**

**$1 – indicates first filed from file**

* **Display last field from file.**

awk '{print $1,$NF}' newfile

* **Display line from 3 to 6**

awk 'NR==3,NR==6 {print NR,$0}' employee

* **Print the first field along with row number separated with ‘@’ for each line in file**

awk '{print NR "@" $1}' employee

* **Print empty line along with its line number**

awk 'NF==0{print NR}' employee

* **To print the square of first 5 numbers**

awk 'BEGIN {for (i=1; i<=5;i++) print "squares of",i,"is", i\*i;}'

cat employee

grep ‘manager’ employee

cat -n employee

1)crontab 2) ps 3) kill 4) top 5) nslookup 6) netstat and 7) ping

**Skanda**

Q1. What is DWH ? Its properties ?

Q2. What is Snowflake Schema ?

Q3. What is Data Model ?

Q4. What is Fact Table ?

Q5. What is Dimension Table ?

Q6. Explain Type of Constraint in SQL ?

Q7. Difference between PK Kyes and FK Keys ?

Q8. What is Index ?

Q9. Explain Join and its Type i.e. INNER ,LEFT, RIGHT, FULL Join ?

Q10. What is Self Join ?

Q11. What is Rank() ?

--(QUESTION ON INFORMATICA TOOL)--

Q12. Do you idea about INFORMATICA Tool ?

Q13. What is Mapping ?

Q14. What is mapplet ?

--(QUESTION ON SSIS)--

Q15.What is the path is placed in that perticular Package ?

Q16. What is look-up Transformation

--(QESTION ON SQL QUERY)--

Q17. Sum of positive and negative number ?

Table A

--------

num

----

45

-12

56

-45

-21

65

Q18.

Table A Table B

---- --------

ID ID IND

1 1 Y

2 1 N

3 2 Y

4 3 N

1 N

4 Y

4 N

O/P:

ID AREA

-- ---

1 CITY

1 VILLAGE

1 VILLAGE

2 CITY

3 VILLAGE

4 CITY

4 VILLAGE

Q19. Write query to delete duplicate record ?

Q20. You have Email column from that extract only firstname?

Example: rajendra.kumar@gmail.com

O/P: rajendra.kumar

Q21. Write syntax for UPDATE record ?

Q22. Explain Defect Life cycle ?

Q23. Difference between Test case and Test scenario ?

Q24. What is Test Plan ?

----------------------------------------------------------------------------------------------------------------

select tablA.ID, case when IND = 'Y' then 'CITY'

when IND = 'N' then 'VILLAGE'

end as AREA

tableA join tableB on tableA.id = tableB.id;

select sum(case when num > 0 then num end) as pos\_num,

sum(case when num < 0 then num end) as neg\_num

from table\_name;

select tablA.ID, case when IND = 'Y' then 'CITY'

when IND = 'N' then 'VILLAGE'

end as AREA

tableA join tableB on tableA.id = tableB.id;

with CTE as

(

select \*,row\_number()over(partition by ID order by ID) as duplicate\_record from TABLE\_NAME

)

DELETE from CTE where duplicate\_record > 1

select substring(email,1,charindex('@',email)-1) as first\_name from TABLE\_NAME

UPDATE TABLE\_NAME SET COLUMN\_NAME = 'XYZ';

**SED** – stream Editor

* Replace string in a file
* Delete or remove specific line
* We can display the content of file

**Syntax:**

Sed ‘s/old string/new string/g’

s- substitution

g- every line all occurrences

without g : every line 1st occurrence

**Q: is it possible to create file by using SED command ?**

NO

**Q. How to replace word ‘Product’ with order ?**

File.txt

Basics of writing press releases

Tip 1: Evaluate the topic

Tip 2: Write a clear headline

Tip 3: Insert key information in the first paragraph

Tip 4: Add a press release summary

Tip 5: Insert quotes

Tip 6: Use data

Additional press release examples

1. Product Launches

2. Product updates

**Ans: sed 's/Product/Order/g' newfile**

**Q; write command to replace the word Product with Order by checking case sensitivity?**

sed "s/\<product\>/Order/gi" newfile

**Q. Delete first line and last line from file?**

**Q. How to delete header and footer from file ?**

sed -i '1d;$d' newfile

command sed

“^” – denote start of the line

“$” – denote end of the line

“^$” – empty line

**Q. How to print blank line from file?**

sed -n '/^$/p' newfile

**Q. How to replace empty line by \*\*\*\*CDS Code Solution\*\*\*\* keyword?**

sed 's/^$/\*\*\*CDS Code Solution\*\*\*/g' newfile

**Q. how to delete word ‘Tip’ from the file?**

sed 's/\<Tip\>//g' newfile

**Q. How to print first line and last line of file using sed command?**

sed -n '1p;$p' newfile

**Q. How to delete all the empty lines from file?**

sed -i '/^$/d' newfile

**Q. How to display 2nd and 4th line from file?**

sed -n '2,4p' newfile - it will display 2,3,4 lines

sed -n '2p;4p' newfile - only 2nd and 4th line

**Q. remove top 4 line from file ?**

Sed ‘1,4d’ newfile

**Q. remove bottom 4 lines from file?**

tac ff | sed '1,4d' |tac

**Q. duplicate each line of file ?**

Sed ‘p’ newfile

Tomorrow

**DWH – 7AM to 8AM**

**Project – 8PM to 10PM - ETL and Database testing and BI**

./LAPEH

Ps

Kill ps\_id

./LAPEH

Ls -lrt

Cat logfile

Grep -error LAPEH\_170523.log

Vi filename.run

Modify date

Put

Rm -rf -path

**Domain Knowledge**

Telecom – CRM , Oss , BSS

Banking – Credit card domain, Payment , investment banking

Insurance –

**Requirement**

Either based upon testing –

ETL/BI Testing

**Manual (SDLC , STLC ,Smoke, sanity, Defect life cycle management)**

**Priority – Importance of defect w.r.to customer requirement.**

**Severity – Seriousness of defect w.r.to functionality**

Blocker defect – stop testing – ETL => Source -> landing – tables – unable to load data in table (Blocker) / server down unbale to run the query / unstable environment

High Severity – High Priority

High severity – Low priority

Low severity – High Priority

Low severity – Low priority

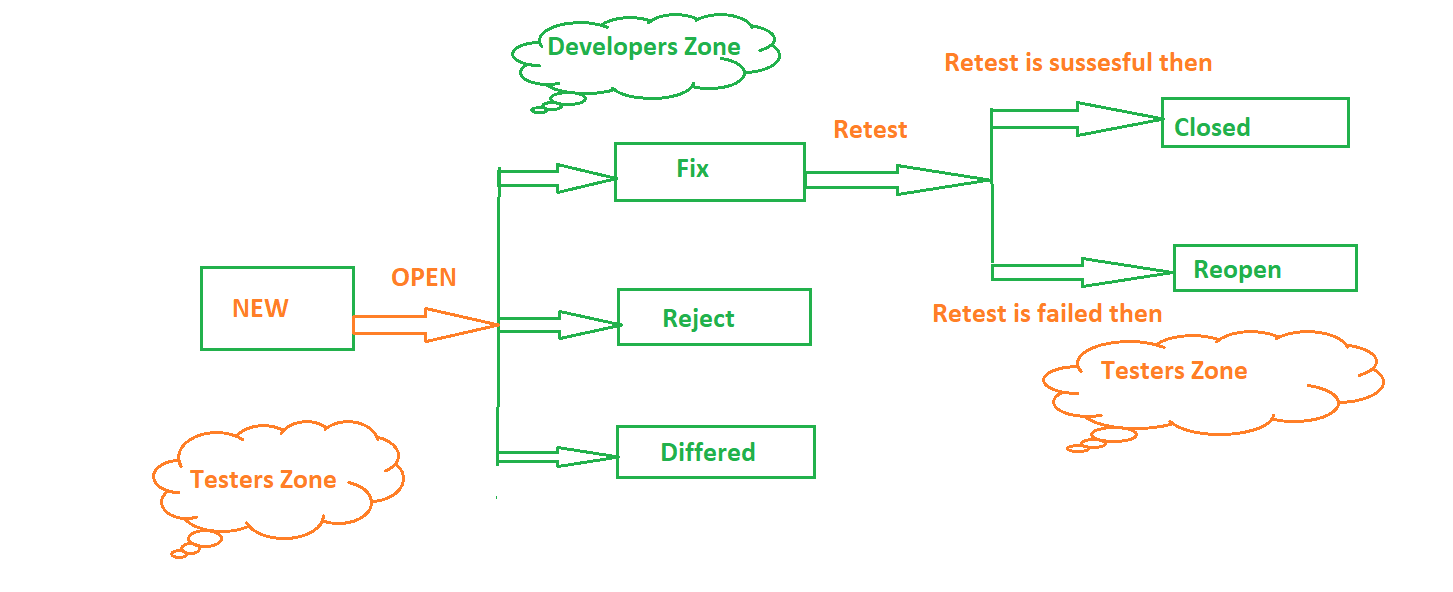
**HPALM/JIRA/rally – whenever you’re going raise an defect depends on the impact to application as well requirement.**

**Data base testing , SQL , UNIX**, DWH, ETL , BI

Additional knowledge - Python () + Selenium

What is Test case review and types review?

**Defect Life Cycle**



**New** : First time when tester log the defect the status is new

**Open:** It is an under-analysis stage between new and Fix.

**Fixed:** Developeris agreed to provide fix for the raised defect.

**Reject:** Developer does not ready to accept that it is defect in that case the status will be rejected.

**Possibilities :**

* Same defect has been raised by your team member(Duplicate)
* He is not all ready that he is made a mistake in his design and he will argue he has developed as per requirement .

**Differed:** Developer agreed that defect is legal and he is ready to give the fix not in on-going release but he will fix the defect in upcoming release.

**Retest :** Once the defect has been fixed by developer then it will come under retest status and tester will retest the defect, if the issue resolved then he will write a comment **“Defect retest is successful and it is good to close”** and assigned back to test team lead or test manager and they will verify and close the defect.

If the issue remains sustain then with proper retest evidence and comment will reopen the defect and assigned back to developer

**Comment: Issue remains sustain PFA for more details**

**Closed:** After defect fix the test engineer test the defect , if it does not exist then it is closed.

**Reopen:** After defect fix , test engineer retest the defect again , if it still exist then status is reopen.

Q. What is duplicate defect?

Q. What is the difference between reject and differed defect?

Q. If developer has rejected a legal defect, then what will be your approach to make him agree , defect is legal?

**Q. Who is responsible to fill the defect status?**

Developer Tester

Fixed New

Differed Open

Reject Closed (Sr. member/TL/PM )

Reopen (who has tested the defect)

**Severity:** high, medium, low -> application/functionality

Urgent – 2 to 3hrs, Very high – 12 hrs , high – 24 hrs , medium – 48 hrs , low – 72 hrs

**Priority :** High , medium , low -> customer requirement

**Defect management tool : HPALM , JIRA, Rallay**

**Defect id , ticket no**

**Q. Where you write the test cases?**

Excel and we have HPALM\_Addin from that will upload test cases in test plan

**Q. Which are the tab you can access from HAPLM?**

Testing and defects tab

**Q. In HPALM where you upload the test cases from your excel sheet?**

Test plan

Q. Where you will execute the test cases in HPALM?

Test Lab (we will upload test cases from test plan to test lab)

--SQL Interview Questions-----

Create database SQL\_INTERVIEW

---JOINS = CROSS PRODUCT + CONDITION

--A B

--1 1

--1 1

create table A (c1 int )

create table B (c2 int ) -- varchar 0-9,a-z,sc

select \* from A

select \* from B

truncate table A

truncate table B

insert into A values (1),(1),(2),(3)

insert into B values (1),(2),(4),(NULL)

select \* from A

select \* from B

select \* from A inner join B ON A.c1= B.c2

select \* from A full join B ON A.c1= B.c2

select \* from A right join B ON A.c1= B.c2

select \* from A

select \* from B

select \* from A left join B ON A.c1= B.c2

--statement execution order

select dept\_id,sal from emp where sal in (select min(sal) from emp

group by dept\_id

having count(\*)>1 order by dept\_id desc;

--Order Execution

--1.FROM/JOIN - first

--2.WHERE

--3.GROUP BY

--4.HAVING

--5.SELECT

--6.ORDER BY

code name Lead manager

c ram b c

b varun a c

a arun c b

--diffrence

select \* from A , B where A.c1 = b.c2 --equi-join always acts as inner join inner join

select \* from A a1 , A a2 where a1.c1 = a2.c1 --self join - we use one table

--SQL server function

--CHARINDEX

--SUBSTRING

--REPLACE

--CONACT

--A B AB

--123 123 123123

--2345 2345 234523

--1234 234 123423

--we need to combine A and B and we need to display only 6 digits

create table AB (A int,B int)

insert into AB values (123,123),(2345,2345),(1234,234)

select \* from AB

select substring(CONCAT(A,B),1,6) from AB

--NAME

--Rahul Patil

--Varun Kumar

--Shahil@patil

--Shital\_Chavan

--first\_name Last\_name

--Rahul Patil

--Varun Kumar

--Sahil Patil

--Shital Chavan

select name = case

when substring(name ,1,CHARINDEX('@',name)-1) as Firstname

then substring(name ,CHARINDEX('@',name )+1,LEN(name)) as LastName

from fullname

select CHARINDEX('@','Shahil@patil')

CASE WHEN

NAME =

--CASE

--CASE with Update

create table fullname (name varchar(50))

insert into fullname values ('Rahul Patil'),('Varun Kumar'),('Shahil@patil'),('Shital\_Chavan')

select (case when name like '%@%' then substring(name,1,charindex('@',name)-1)

when name like '% %' then SUBSTRING(name,1,charindex(' ',name)-1)

when name like '%[\_]%' then SUBSTRING(name,1,charindex('\_',name)-1)

end),

(case when name like '%@%' then substring (name,charindex('@',name)+1,LEN(name)) end)

as lname from fullname

select \* into EMP\_DETAILS from

(select

case when name like'%[ ]%' then substring(name,1,charindex(' ',name)-1)

when name like'%[@]%' then substring(name,1,charindex('@',name)-1)

when name like'%[\_]%' then substring(name,1,charindex('\_',name)-1) end firstname,

case when name like'%[ ]%' then substring(name,charindex(' ',name)+1,len(name))

when name like'%[@]%' then substring(name,charindex('@',name)+1,len(name))

when name like'%[\_]%' then substring(name,charindex('\_',name)+1,len(name)) end lastname from fullname) a

--We need to write store procedure

Firstname Lastname

select \* from EMP\_DETAILS

create proc sp\_Conversion

as

begin

select

case when firstname = lower(firstname) then upper(firstname)

else firstname end as FirstName ,

case when lastname = lower(lastname) then upper(lastname)

else lastname end as LastName

from EMP\_DETAILS

end

select \* from EMP\_DETAILS

exec sp\_Conversion

--we need to change all the first name and last name with capital letter

--Diffrence between rank and dens\_rank

--What is the diffrence between having and where clause

--diffrence between delete , drop and trucate?

--Suppose i am having table in that we want to count how many time the same record is getting loaded?

--Duplicate

--EMP and dept Location

--find out maximum salary of an employee for each loaction along with its department?

--max()

--join

--group by loc,dept

select MIN(e\_sal) from employee

select MIN(E\_SAL) from employee where E\_SAL >()

select MAX(E\_SAL) from employee where E\_SAL in (

select top 3 E\_SAL from employee order by E\_SAL asc )

select MAX(E\_SAL) from employee where E\_SAL in (

select top 2 E\_SAL from employee order by E\_SAL asc )

--all the details second minimum salary employee

select \* from employee e1

where 3 = (select count(e2.E\_SAL) from employee e2 where e1.E\_SAL <= e2.E\_SAL )

select \* from employee e1

where 4 = (select distinct(COUNT(E\_SAL)) from employee e2 where e1.E\_SAL >= e2.E\_SAL )

Select \* from

(select \* , Dense\_rank () over ( order by E\_SAL Desc) as ranking from Employee)

as Temp where ranking = 3

select MAX(E\_Sal) from employee

------------------------------------------------

--Display hihest marks of each subject along with student

create table student\_marks(Name varchar(20),Science int,Maths int,English int)

insert into student\_marks values ('Mohan',4,9,1),('amit',2,3,6),('Amar',0,1,4),('Sagar',5,7,2),('Kiran',7,6,0)

select \* from student\_marks

--Science > Maths> English as Science

--Maths > Science > English as Maths

--English > Maths > Science as English

select \* from student\_marks

--Part two output

select name,Case

when Science > Maths and Maths > English then Science

when Maths > Science and Science > English then Maths

When English > Maths and Maths > Science then English

end as Student\_Marks

from student\_marks

--Part one

select name,Case

when Science > Maths and Maths > English then 'Science'

when Maths > Science and Science > English then 'Maths'

When English > Maths and Maths > Science then 'English'

end as Student\_Marks

from student\_marks

--

--Part one output

--Name Max\_Marks

--amit English

--Amar English

--Sagar Maths

--Kiran Science

--Mohan Maths

--English > maths >

--Part Two output

--Name Max\_Marks

--amit 6

--Amar 4

--Sagar 7

--Kiran 7

--Mohan 9

--Focused Topics in SQL

--Constraint - Unique , Pk , FK ,Default , NOT NULL, Check

--Clause - WHERE, Order by ,Group by\*\*\* , Having\* (diff between where and having), IS NULL

--Operators - Arithamtic operators by using case statement, LIKE\*\*\*, IN,Between

--Aggrgate Functions - Max\*, Min\*,avg,sum,count \*\*\*

--Joins\*\*\* (Very important) -- inner join , outer,left,right

--Self Join, equi\_join

--SET operator - union,union all,intersection\*,EXCEPT/MINUS\*\*\*

--Anonotical functions - Rank\*\*, dense\_rank\*\* and Row\_number(delete duplicates)\*\*

--SQL system defined keywords :TOP,CASE\*\*\*\*,OVER BY , PARTITION BY\*\*\*

--Statements - DELETE,DROP,TRUNCATE, case with updates ,ALTER constraint\*

--SQL Server Function : Cast,convert,substring,charindex,replace ,concat,concat\_ws,stuff,coalese\*\*

--When more depth Knowlege then

--Depth SQL : View\*\*, SP\*, trigger\* , INDEX

--Encrytion and decrytion : EncryptByKey,DecryptByKey

--Pivot and unpivot

select \* from EMPLOYEE

--Write SQL query to incresee even id employees by 1000 and odd employees by 1500.

select \*, case

when EID%2 =0 Then E\_sal + 1000

When EID %2 =1 then E\_SAL + 1500

end as SAL\_INC

from EMPLOYEE

--------------------------------------------------------------------------

--in sales table,

-- Date fruits amount

-- 01/01/22 mango 20

-- 01/01/22 apple 30 --('2022-01-01','Apple',30)

-- 05/04/22 mango 50 --('2022-04-05','Mango',20)

-- 05/04/22 apple 30 --('2022-04-05','Apple',20)

--write a query to get difference between amt of fruits date wise

--output

--Date Difference

--01/01/22 10

--05/04/22 20

create table Fruit\_Sales (Date\_ID date,Fruits varchar(30),Amount int)

insert into Fruit\_Sales values ('2022-01-01','Apple',50),('2022-01-01','Mango',20),('2022-01-01','Apple',30),

('2022-04-05','Mango',50),('2022-04-05','Apple',20)

SELECT \* FROM Fruit\_Sales

select DATE\_id, max(amount)-min(amount) as DIFFRENCE

from Fruit\_Sales

group by DATE\_ID

--

select Date\_ID,

Max(amount) over(partition by date\_id order by amount) -Min(amount) over(partition by date\_id order by amount)

from Fruit\_Sales

--2022-01-01 20

--2022-01-01 30

**UNIX**

SED:

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* **To print the square of first 5 numbers**

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cat employee

grep ‘manager’ employee

cat -n employee

1)crontab 2) ps 3) kill 4) top 5) nslookup 6) netstat and 7) ping

SKANDA

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* Replace string in a file
* Delete or remove specific line
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File.txt

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Additional press release examples

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2. Product updates

**Ans: sed 's/Product/Order/g' newfile**

**Q; write command to replace the word Product with Order by checking case sensitivity?**

sed "s/\<product\>/Order/gi" newfile

**Q. Delete first line and last line from file?**

**Q. How to delete header and footer from file ?**

sed -i '1d;$d' newfile

command sed

“^” – denote start of the line

“$” – denote end of the line

“^$” – empty line

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sed -n '/^$/p' newfile

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**Q. How to display 2nd and 4th line from file?**

sed -n '2,4p' newfile - it will display 2,3,4 lines

sed -n '2p;4p' newfile - only 2nd and 4th line

**Q. remove top 4 line from file ?**

Sed ‘1,4d’ newfile

**Q. remove bottom 4 lines from file?**

tac ff | sed '1,4d' |tac

**Q. duplicate each line of file ?**

Sed ‘p’ newfile

**DWH interview Questions**

1. What is DWH ? Its properties ?
2. What is Snowflake Schema ?
3. What are the different schemas in DWH?
4. What is Data Model ?
5. What is Fact Table ?
6. What is Dimension Table ?
7. What is fact less fact table?
8. SCD dimension ?
9. How will you validate SCD2 dimension?
10. Suppose while maintaining Historical and current data , we do not have columns called ETL\_Record\_Flag or Start\_Date and End\_date then how will you identify historical record and current record? Time stamp, updated time stamp
11. What is normal Load/Initial Load or Incremental load/Delta Load?
12. Different types of dimensions and which dimension you have used in your project?
13. Types of facts and which facts are used in your current project?
14. What is DM? do you get any chance to validate DM?
15. What are the different types of tables you have validated in DWH?
16. Difference between OLAP and OLTP.
17. What is ODS?
18. How many tables are there in your project?
19. Parquet , JSON (key: value , key(key: value, key: value))

**ETL Testing:**

* ETL validations – Structure, Count, Duplicate, We are also validating ETL transformation

**How you have validated ETL transformation?**

Basically ETL transformations are mentioned in mapping sheet , as per mapping sheet we are designing test cases , if transformation is applied on single column then we will do column level validation and verify it is working as per mapping sheet.

We can say

Column wise there might be some sort substring or concatenation or some time they apply SCD2

Complex transformation like joiner , CS, lookup transformation

**Look Up transformation :**

Oracle DB (Recent Data ) - SQL Server (All historical data)

Source data --🡪ETL(SSIS) ----🡪 Reference Data

Plan : Offer 5-year-old customer a new wireless device for free.

Free\_Customer Paid\_customer

**What is the template of your mapping sheet?**

**What will be your approach When you attempt for ETL Testing?**

Source 🡪 Landing 🡪 Staging 🡪 DWH 🡪 Reporting Layer (BAL/UDM)

Phase -I

**Phase-1**

We will get requirement document and mapping sheet

We analyse requirement and mapping sheet and identify test case scenarios

After identifying test case scenarios, we will design test cases

Once test case design is competed then will do review along with BA.

Awaiting data to be loaded in ETL layer.

--------------------------------------------------------------------------------------------------------------------------------------

**If you don’t have ETL tool access**

We don’t have access to run ETL jobs/sessions/packages / process / pipeline then developer will run jobs/sessions/packages / process / pipeline and once it is competed then they will send formal email communication by including testing team as well as development team along with manager and team leads

In that email they send spreadsheet , which contains all the package details which run has completed and details of data loading into respective tables.

--------------------------------------------------------------------------------------------------------------------------------------

We start executing test cases and capture evidences if we found an issue then we will raise defect.

**Defect life cycle**

**Regression testing**

**Blocker defect**

**Priority and Severity**

**Same approach we will follow for next layer as well but for each phase we get different mapping sheet.**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**If they have not given mapping and they have given in some text format then what will be your approach?**