

Project:

SDLC - Software Development Life Cycle (Enhancement)

It is a Life Cycle of PLSQL Developer which Consists of

1. Work Request - Monthly Once

2. Change Request - Weekly Once

SDLC:

Company Name: HCL (For Example)

Client Name: BNP (For Example)

Project Name: Share khan (For Example)

Objective: Online Trading

Share khan is an Application made by BNP for their Customers to Buy and Sell the Products by using a Demant Account for Online Trading for the Products Like

1. Equity

* Example of Equity Trading

it is a Part of a trading Business For Example: TCS having 5 Lakhs for a Project but the Project Needs 10 L to Start so TCS will sell the shares of the Project to the Public through a bank to share market like **NSE - National Stock Exchange, BSE - Bombay Stock Exchange** are the two Important Stock Exchange so TCS will Share their Stocks of the Project through the Stock Exchange NSE or BSE so Public Will Buy the Share by Paying the Money.

buy selling the Shares TCS will collect remaining 5 L in the 10 L by Selling the Shares now TCS will have 50% of Owner ship or shares and Remaining 50% will be with People who have buy the Shares this is Called Equity Share

2. Commodity

Examples of Commodity Trading:

1. Grain
2. Precious
3. Orange
4. Oil
5. Beef
6. Natural Gas

And many are there these products can be buy and sell which we cannot see physically but we can invest on them and when it reaches a high Price we can sell them

This type of Trading is called Commodity trading

3. Currency

Investing on Money, Currency, Dollars, and Many these are Called Currency Trading (Buy and Sell)

BNP has two types of Customers

1. Relation Customers (Trade by their Own Money)
2. Institutional Customers (Trade By their Client's Money)

BNP Decided to make an Application for their Customers

Named : Sharekhan

BNP will have Discussion with our Company Business Analyst about the Project they would have detailed Explanation on how many inputs and outputs and how the application to be

- After the Meeting with the Client (BNP) BA will create a BRD (Business Requirement Document)
 - BRD Consist of Detailed Explanation of each page in the Application. The Application Consist of Below Pages:
 - Logging In
 - Transfer Cash (From Bank to Share khan)
 - Check Your Trading Limit (Which Consist of Market Opening and Closing time and to check the Balance and trading Limit Price and Statements in Margin Page)
 - Buy and Sell Shares
 - Track Orders and Trades
 - Check Your Demat Balance
 - View Digital Contracts
 - Withdraw Cash (From Share khan to Bank)
 - By reviewing the BRD Data modeller will design the data base like table, and inputs and their data types as other side Java Developers will start to build the Application Front end and Connect with our Database Using API.
 - Once Data Design has completed it moves to PLSQL Developers
 - PLSQL Developers will make an Impact analysis Document about the Application
 - Then Detailed Design Document has prepared to explain what we are going to do in the Project
 - Test Case is prepared by the PLSQL Developer for Unit Testing
 - Coding process are done by plsqli developers
 - Unit testing is done and results are saved as a Document (pass/ fail)
 - For Next Process the Codes written in Notes are Checked In to the CVS File Manager Tool in which next level can Download or Release the Notes for their Use

- To checking or for testing we have to arrange the notes in ordered to tell them which one should check first. We have to Mail then the Order of the notes which is Called Release Notes.
- Once release notes are mailed they are moved to testing team to check the application
Testing Team starts to check the Application with their Test Cases

If any Bug or Issue has been found by the Team they would raise the Issue or Bug through JIRA tool (Example Tool)

Then we have support to the testing team to clear the Bug.

The testing team which we support are:

The testing teams are

DIT - Development integration testing

SIT - System integration testing

UAT - User acceptance testing

Then the Product or Application or Interface go to Production or live which is the Retailed and Institutional Customers will start to Use the Application.

This is how a Project is made.

once the Project has completed but this Application consists of New Order form Request in which Only One Order can be placed at a time so it can be used by Retail Customers of BNP so Now Institutional Customers Requesting BNP to Create a New Page for the Placing a Bulk Order.

So Now BNP Meets Our BA for creating a New Page

Once Project is Completed and Customer Bring any New Change Like to Create New things in the Project it is Called WORK REQUEST

So now Work request has raised by customers

WORK REQUEST Process:

WR Received monthly once

Client name BNP

Application: Share khan

Objective: Online trading

Users: Retail customer, Institutional customers

Institutional customers raised a new request to Business analyst to create a new web page to place bulk trade orders

As per customers' requirements

1. Business analyst create a model page and document BRD with the inputs given by customers

Which consists of

1. Exchange

2. Script

3. Quantity

4. Market price

5. Limit price

2. Java developers create the web page of the application

3. Data modlers design the table for the new page with columns and data types to be used in the table columns with the help of Business requirement Document BRD

4. Plsql developers will create a impact analysis document by understanding BRD and Data modelers table design on what impact will happen by the work request

5. After impact analysis report a DETAIL DESIGN DOCUMENT is prepared to show what developers are going to do in the table

6. Test cases are made for the unit testing

7. Coding process are done by plsql developers

8. Unit testing is done and results are saved pass/ fail

9. The coding documents are checked in CVS file manager tool

10. Release notes are mailed to release manager

11. Release manager check out the Notes to testing team

After release notes are send we are supporting to testing team if any bug is raised through JIRA tool it should be done within the SLA - Service level agreement

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Production or live

CHANGE REQUEST:

Now Institutional Customers Requirements have been completed.

As Same Retail Customers Need an Additional Change in the New Order Form Page

In New Order Form Page Consists Of

1. Exchange
2. Script
3. Quantity
4. Market price
5. Limit price

They Need to Add Additional One More Column in the Table **Order_Type**

This Requirement is Raised by Customers to BNP Now BNP has Raising the Request to Us (HCL) . This Type of Request is Called CHANGE REQUEST. TO Modify an already Made Project or to add any feature for Old One is Called Change Request.

- BA Makes a BRD
- Data modeller will Design the Data Types and table
- PLSQL Developer Will Create an Impact Analysis on the Page and Impact of Adding the Extra Colum **Order_type**.
- Impact Analysis Document has Made
- Detail Designed Document has Prepared by PLSQL Developer
- Test Cases are Prepared For Testing
- Coding has made to Add New Column **Order_Type**.
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Performance tuning: (Production Support Life Cycle)

This Topic Comes For INCIDENT REQUEST and PROBLEM REQUEST

The institutional clients ask for a new page to place their bulk orders.

So, client asked us to prepare the new page called **bulk orders**.

We (pl/sql developers) usually get the WR **monthly once**.

We understand the BRD given by BA and table design document prepared by the data modeller.

And bulk orders front page created by the Java developers. We asked java developers to call the previous procedure itself. While placing the bulk orders, for example 1000 inputs, the sp_trade_now procedure will loop for 1000 times and 1000 rows will be inserted in t_orders table.

So, performance got slow.

Level 1:

- L1 team interact with the customers and raised **the incident request (bugs in WR)**.
- The incident request is, the query is running for 4 hours i.e. customers got the order placed successfully feedback after 4 hours only. L1 team set the priority level and they escalated to L2 team.

Level 2:

- L2 team analysed the problem and found this is because of **table lock**.
- Whenever more than one user accesses the table in same time, table will be locked.
- To avoid the table lock, user must commit or session to be killed.
- L2 team found the locked object using **v\$locked_object** and **all_objects**.

Query to find the locked object is:

```
Select b. owner, b.object_name, a.oracle_username, a.os_user_name
from v$locked_object a, all_objects b
where a.object_id=b.object_id;
```

Level 3:

- So L2 team escalated the **IR** to L3 team, to kill the session.
- L3 team get the session_id(sid) and serial number of that session from **v\$session** and killed the session using the following the command and given the temporary fix.

Alter system kill session'sid,serial#';

Problem request (PR):

The repeated IR's will be raised as a PR by the L1 team for the permanent fix.

Again, L2 team analyzed and asked the L3 team to create the new procedure called **sp_bulk_orders** and new table called **t_xml_orders** having only one column named as **orders** in **xmltype datatype** and asked the java developers to **call this new procedure(in API)** and give the **input in xml**. Now the procedure will be called only one time and it will store only one row in a xml rather than 1000 rows. Now the query is running for **1 second only**. Like this we did performance tuning to reduce the running time of the query. Java developers will **generate the xml** from the customer's 1000 orders input and give us as an input. We will get that xml as a string using **clob datatype and store in t_xml_orders as a xml using xmltype datatype**. Then we will give the output to java developer's in **refcursor using sys_refcursor** datatype by extracting the xmltype using **extract function and xmlsequence function**. Refcursor is a datatype to store the result of the query. mostly refcursor is used to return the results to the client.

- Last WR : bulk orders Last IR and PR : query is running for 4 hours to produce the order placed successfully output.
- Last created stored procedure : sp_bulk_orders
- Last created table : t_xml_orders Last used datatypes in that procedure and table : xmltype,refcursor,clob