

Optimization and Performance Improvement in the Automation Testing process of Oracle Point of Service System

Submitted By

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INSTITUTE OF TECHNOLOGY

NIRMA UNIVERSITY

AHMEDABAD-382481

May 2015

Optimization and Performance Improvement in the Automation Testing process of Oracle Point of Service System

Major Project

Submitted in partial fulfillment of the requirements

For the degree of

**Master of Technology in Computer Science and Engineering
(Networking Technologies)**

Submitted By

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Guided By

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DEPARTMENT OF Computer Science And Engineering

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AHMEDABAD-382481

May 2015

Certificate

This is to certify that the Project entitled "Optimization and Performance Improvement in the Automation Testing process of Oracle Point of Service System" submitted by Kotecha Aashka (13MCEN06), towards the partial fulfillment of the requirements for the degree of Master of Technology in Computer Science and Engineering (Networking Technologies) of Institute of Technology, Nirma University, Ahmedabad is the record of work carried out by her under my supervision and guidance. In my opinion, the submitted work has reached a level required for being accepted for examination. The results embodied in this Seminar, to the best of my knowledge, haven't been submitted to any other university or institution for award of any degree or diploma.

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Statement of Originality

I, **Kotecha Aashka**, Roll. No.13MCEN06 , give undertaking that the Major Project entitled ”**Optimization and Performance Improvement in the Automation Testing process of Oracle Point of Service System**” submitted by me, towards the partial fulfillment of the requirements for the degree of Master of Technology in **Computer Science & Engineering(Networking Technologies)** of Institute of Technology, Nirma University, Ahmedabad, contains no material that has been awarded for any degree or diploma in any university or school in any territory to the best of my knowledge.It is the original work carried out by me and I give assurance that no attempt of plagiarism has been made. It contains no material that is previously published or written, except where reference has been made. I understand that in the event of any similarity found subsequently with any published work or any dissertation work elsewhere; it will result in severe disciplinary action.

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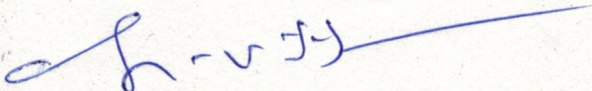
This is to certify that Ms. **Aashka Kotecha**, student of M.Tech (pursuing Institute of Technology, Nirma University) has completed her project with Oracle India Private Limited.

The project was undertaken from June 2, 2014 to May 14, 2015. She worked on "Oracle Retail - Unified Automation Program"

We wish her all the best in her future endeavours.

Yours sincerely

For Oracle India Private Limited.



Ganti V S Sarma
Group Manager - HR Operations



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Abstract

Oracle Retail Point-of-Service (ORPOS) is a point-of-sale application that gives the capacities to complete everyday exchanges and direct every day store exercises. Undertakings, for example, examining things, applying value changes, tendering, and printing receipts and additionally preparing returns and web requests can be performed. Store operations including opening the store, overseeing registers and tills, and shutting the store can be taken care of through Oracle Retail Point-of-Service. Most of the leading Retailers of the world are using ORPOS to enhance their point-of-sale experience with the customers. To make this experience even more better, new features are added in the existing version and a new version is release in the market for the Retail chain owners. Hence it becomes very important to Test the new features, after it gets developed and before it goes in the hands of customers. Also with improving technology, automation field is overpowering manual processes at quite a pace. So this project also involves automating the entire testing process of new version ORPOS 14.1 as well as defining some functions and scripts that will optimize the testing performance of the product

Abbreviations

ORPOS	Oracle Retail Point of Service
ORPM	Oracle Retail Pricing Management
ORMS	Oracle Retail Merchandising System
ORSIM	Oracle Retail Store Inventory Management
POS	Point-of-Sale
CO	Central Office
BO	Back Office

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Chapter 1

Introduction

ORPOS aka Oracle Retail Point of Service gives the responsiveness, flexibility, and versatility expected to meet the point-of-sales needs of even the greatest retailer. It incorporates next-era usefulness that permits retailers to expand store effectiveness. It upgrades client loyalty and venture into International markets. Gives retailers today's must-have client administration capacities and best-in-class features. helps convey a prevalent shopping knowledge with cross-channel and save-the-sale functionality. This integration supports three basic use cases: Sales, Returns, and Order Inquiry. The following describes each of these use cases: [1]

- a. An associate is asked to enter items from an external order system into a customer's transaction. This flow requires that the system contact the external order system to look up the order and bring that order back into the transaction.
- b. An associate is asked to return items that were originally part of an external order. This flow requires the system to contact the external order system to create a return order.
- c. An associate is asked to review an order placed in the external order system. This flow operates much like the flow in use case 1.

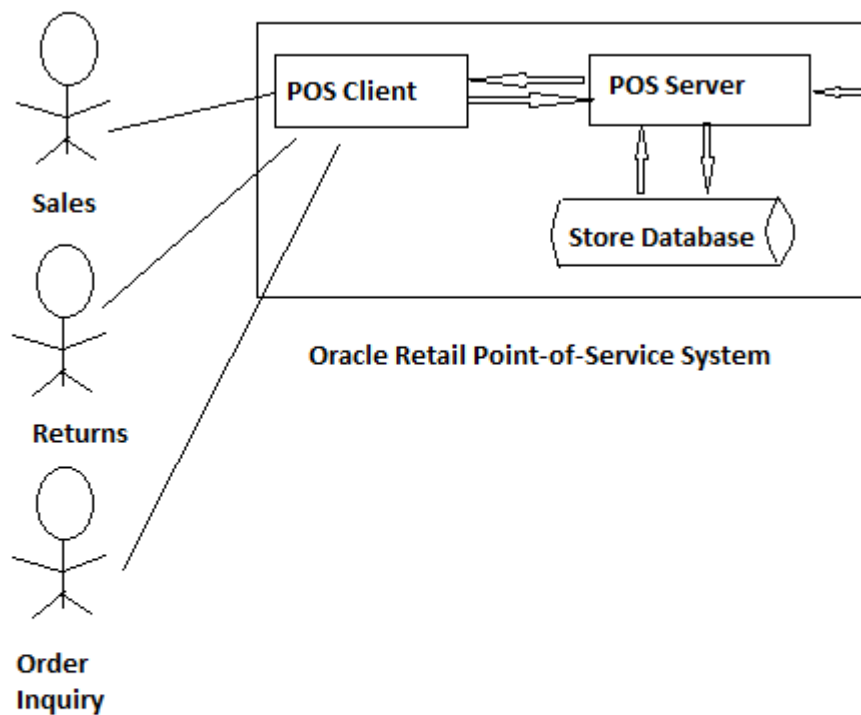


Fig: Work Flow of ORPOS

- d. The Point-of-Service system must interact with the external order system to find orders and make updates to those orders. This interaction will always be initiated from the Point-of-Service system.

1.1 History [5]

The foundations of ORPOS lie in giving adaptability, responsiveness, and versatility to address the needs of the biggest retailers, enhancing client administration and

expanding benefit. It's Easy-to-utilize graphical user interface expands benefit and paces representative training Centralized exchange information encourages security for returns, non-receipted returns, cross-store returns, and cross-channel returns.

1.2 Operational Flows [5]

1.2.1 External Order Query

Sales associates need the ability to look up orders from their Point-of-Service terminals. They have the ability to enter search criteria and have the system return to them any matches to the criteria. If the remote order system is unavailable, the system displays an error message to inform the associate.

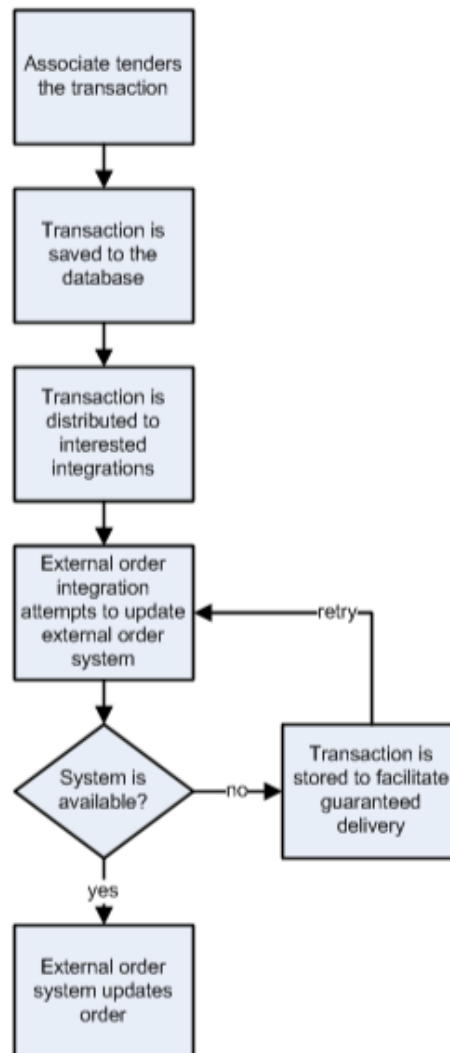
1.2.2 External Order Update

Once a sales associate tenders an order, the system updates the remote system with the tender information and moves the order through the completion process. It is imperative that the updated order get sent to the remote system, so the Point-of-Service system provides for guaranteed delivery.

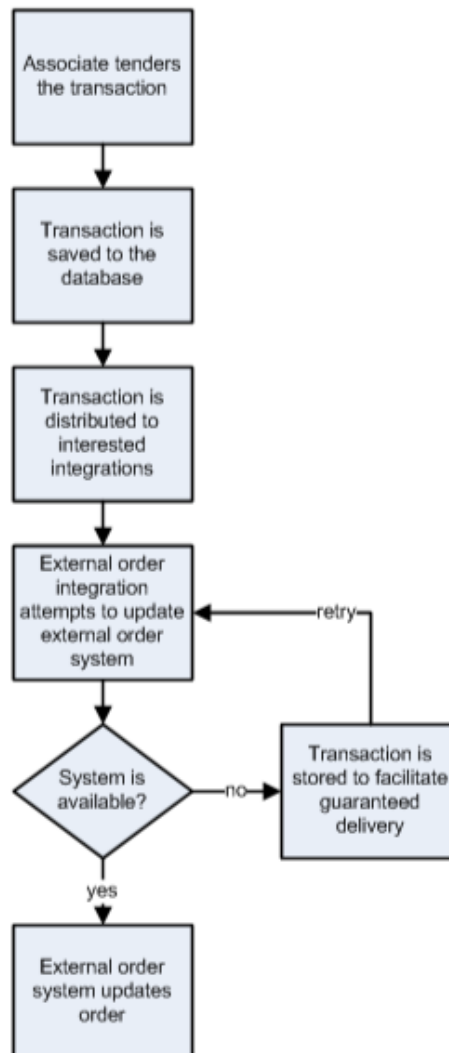
1.2.3 Key Capabilities

The following are some of the major capabilities that are present with Oracle Retail Point-of-Service System:

- a. Passes on an unrivaled shopping information with cross-channel, save-the-deal, and optional line-busting handiness.
- b. Assembles benefit and paces representative training with an intuitive, easy to-use graphical customer interface.
- c. Consolidates customer buy, profile, and devoted information to assemble customer closeness.



- d. Guarantees exact evaluating at the point-of-sale with strong special valuing abilities, including best arrangement” and favored client.
- e. Engages cross-store stock interest limit.
- f. Centralized recuperate trade data to support returns.
- g. Completes remarkable business goes through easy to change parameters.
- h. Sureties overhaul thing expense for non-receipted returns.



- i. Prompt stock updates to Oracle Retail Store Inventory Management.
- j. Unique Identification Number acceptance through Oracle Retail Store Inventory Management.

Chapter 2

Literature Survey (Phase I)

2.1 Integration Enhancements [6]

The following incorporation improvements are incorporated in the current release:

2.1.1 Oracle Retail Price Management

The integration with Oracle Retail Price Management supports new pricing rules:

- a. The Clearance-Item Price category is added on the source and target items to indicate whether the discount rule source and target items criteria apply to regular retail items only, clearance items only, or both. The Data Import (DIMP) and Oracle Retail Point-of-Service are modified to differentiate clearance from regular price changes.
- b. Multi-threshold pricing is supported for the following multi-threshold pricing rules:
 - Buy N of X for Z \$ off
 - Buy N of X for Z % off
 - Buy N or more of X for Z \$ each

c. Transaction-level discounts are supported where the source can be all the items in the store. In addition, the transaction-level discount best deal is introduced. When there are overlapping transaction-level promotions, the best deal that benefits the customer is applied. The following transaction-level promotions are supported:

- Buy \$ N or more of X, get Z\$ off the transaction total
- Buy \$ N or more of X, get Z% off the transaction total.
- Buy N of X for Z\$ off the transaction total
- Buy N of X for Z% off the transaction total

2.1.2 Oracle Retail Store Inventory Management

The following upgrades are made to the combination with Oracle Retail Store Inventory Management:

- a. Batch files can be used to integrate with Oracle Retail Store Inventory Management. The use of flat files is an alternative to using a web service. The use of batch files can be scheduled by retailers to push data to Oracle Retail Store Inventory Management. The transactions are written to a flat file, which is read by an Oracle Retail Store Inventory Management batch process. Oracle Retail Sales Audit still sends transactions to Oracle Retail Store Inventory Management, but only those transactions that are modified or audited.
- b. Integration with the Oracle Retail Store Inventory Management web service supports the selection of a security policy. Policy A and Policy B are the available security policies.

2.2 Functional Enhancements [6]

The following practical upgrades are incorporated in this release:

a. Commerce Anywhere

The Oracle Retail POS Suite applications play a significant role in Commerce Anywhere. The applications support accurate, real-time, enterprise-wide inventory visibility. This provides an in-store order experience that enables the consumer to combine both their virtual cart and their physical basket; selling and ordering from the retailer's enterprise catalogue, including items that are not physically in the store. The Oracle Retail POS Suite applications support fulfillment of orders; reserve, receive, pick, ship, and fulfill. The following features are added in support of Commerce Anywhere:

- **Creation of Orders in Different Channels**

Take-with and ordered items are supported within the same transaction. Orders can be created no matter where the desired item is or where the customer wants it. A view of real-time quantity-on-hand and future inventory position is provided by Oracle Retail Store Inventory Management.

- **Extended Product Catalog**

Access is provided to the retailer's enterprise product catalog in addition to the items that have been ranged to the store. Item lookup includes multiple ways to search and return multiple item attributes, descriptions, and product images. An additional set of related item relationships, including substitutions, up-sell, and cross-sell recommendations, is supported by Oracle Retail Merchandise Operations Management.

- **Pick Up of Orders**

Pickup can be done in the store, at another store, or delivery can be set up from anywhere in the supply chain such as the vendor, warehouse, or an alternate store. Partial shipment and partial order pickup are supported.

- **Return Items to a Store from any Channel**

Wherever an order is initiated or fulfilled, centralized transaction retrieval

ensures the return honors the original price paid (including discounts and overrides) and provides tendering controls to enforce the brand's refund policies

2.2.1 User Interface Enhancements [6]

The following enhancements are provided to improve the user interface:

- a. **Dashboard** Oracle Retail Point-of-Service has a configurable dashboard that can be viewed on the Main Options screen. The following are displayed in the dashboard:
 - **Graphical reports:**

The reports that appear depend on how the dashboard is configured from a list of available Oracle Retail Point-of-Service reports. The report data is updated in real time.
 - **Messages:**

The messages can be updated and distributed to stores.
- b. **Navigation** The user interface is enhanced to improve navigation through the application:
 - Navigation buttons include an icon to help clarify the definition of the button.
 - Sliding navigation is added. Selecting a local navigation button displays the next set of local buttons just to the left of the original local navigation buttons. Selecting a local navigation button from the new list either displays a third set of buttons to the left or loads the appropriate screen.
 - The background image extends to the entire size of the screen.
- c. **Currency Rounding** Several countries are moving towards eliminating lower denominations of currency. Retailers can continue to accept these denomina-

tions from customers as a part of their payment. With this enhancement, the amount given for change and refunds can be rounded. The amount can be rounded up or down and also to another denomination. A line is added to the receipt to show the amount of the rounding adjustment made for the transaction. The Cash Rounding Adjustment field is added to the Statistical Summary section of the summary reports. This field contains the total amount of rounding adjustments made for transactions involving cash given for change and refunds.

- d. **Cross-Border Returns** Cross-border returns enables the processing of the return of items in a different country than where the items were originally purchased. The system processes the return in the local country's currency and uses the local store's pricing and tax. The original transaction is updated with the return information in order to maintain the correct status of the original transaction and prevent multiple returns against the same item.
- e. **Customer Display** The customer display is a separate display from the associate-facing Oracle Retail Point-of-Service display. It provides a view for the customer of the transaction as the cashier is scanning items and completing the transaction. The following information can be displayed in the transaction panel of the dashboard:
 - Scrolling receipt with item information including images, description, and price.
 - Transaction summary including subtotal, discounts, quantity purchased, tax, and Total. The image and message panels are configurable for the retailer's brand and messaging. The images and messages have start and end dates and times to enable displaying date and time-specific promotional material as appropriate.

2.3 Technical Enhancements [6]

The following technical enhancements are included in this release:

- Payment Provider
- Fiscal Printer Support
- NCR 82XRT Register
- Novell SLEPOS

2.4 Main Sub-Products of Oracle Retail Point-of-Service

The complete ORPOS is divided into 3 sub-products:

- a. Oracle Retail Back Office (BO)
- b. Oracle Retail Central Office (CO)
- c. Oracle Retail Point-of-Sale (POS)

2.4.1 Oracle Retail Back Office (BO): [1]

Oracle Retail Back Office is a Browser based application that offers access to basic store information irrespective of location in the store. It gives continuous access to precise data over the store giving the capacity to respond rapidly to business requirements and patterns. With the ability to profitably perform significant store operations and look at in-store data, retailers can upgrade customer organization and enhance advantages.

- a. **Do what needs to be done at all places, at all times:** In today's hyper-focused business sector, retailers are under more weight to lessen costs while

expanding deals. Additionally it is harder than at some other time in late memory to enlist and hold reliable, client administration arranged arrangements so store administrators must contribute to a greater degree a chance on personnel organization. Then again, key store operations, for instance, reporting and examination, should regardless be performed to help best-in-class customer organization at the point-of-sale and to development advantages.. Then again, key store operations, for instance, reporting and examination, should regardless be performed to help best-in-class customer organization at the point-of-sale and to development advantages. Oracle Retail Back Office gives retailers the adaptability to put store administration and reporting usefulness wherever its required on the front enroll, the back-office PC, or tablet gadgets so retailers can put everything in order anyplace, at whatever time.

b. **Gain Real-Time Access and Maintain Accurate Information** Oracle Retail Back Office gives retailers nonstop access to exact information across stores so they can better meet customer demands. Oracle Retail Back Office:

- Allows administrators do what needs to be done from the point-of-sale as required.
- Incorporates a thorough and simple to-utilize reporting framework, empowering administrators to analyze their organizations and make fact-based choices with respect to their store surroundings.
- Gives far reaching reporting capacity leveraging Oracle's BI Publisher with different review and yield choices, putting constant functional betterment at the easy access when and where it is required.
- Permits supervisors to finish start-of-day/ end-of-day money administration systems.
- Incorporates store-level representative, security, and time support.
- Empowers administrators to set up, perspective, and keep up thing, cost,

and advancement documents for store-particular groupings and occasions. Progressed peculiarities incorporate Customer Specific Pricing and Promotions and advanced "Purchase/Get" Promotion capacities.

- c. **Improve Operational Efficiency** Oracle Retail Back Office lets retailers oversee in-store design data including parameters, trade rates and security settings. Approved clients can alter parameters to match store-particular policies. Respond to business needs and patterns rapidly by setting up, review, and keeping up thing, cost, and advancement records (counting packs and best arrangements) for store-particular collections and occasions. Alternately utilize those documents as a reinforcement when correspondences issues keep the right records from being downloaded from corporate. Oracle Retail Back Office features include: start-of-day and end-of-day operations; register open and close; till open and reconciliation; bank deposits; employee, item, price, and promotional events maintenance; security; and store configuration.
- d. **Settle on Better Decisions with More-Accurate Reporting Information:**

Through its facilitated reporting pack, Oracle Retail Back Office enables the customized time of reports for enormous business wide access to the continuous information that drives improved decision making. The incorporated reporting package in Oracle Retail Back Office outfits retailers with a few methodologies to evaluate key business estimations for deals, laborers, and register/till reporting. Reporting limits join the ability to see, print, extraordinarily named, add to top decisions or fare reports; automated report arranging. With this industry-heading and simple to utilize bundle, administrators can make and spare custom report settings to a "My Favorites" reports area, plan automatic reporting, and rapidly make specially appointed perspectives leaving more of an opportunity to break down and follow up on the information to enhance results going ahead. Numerous fare alternatives, including email, print, and document

arrangements, permit clients to impart and power business sagacity anyplace, at whatever time. Oracle Retail Back Office, a browser based application, gives retailers the flexibility to put store organization and reporting helpfulness wherever its needed.

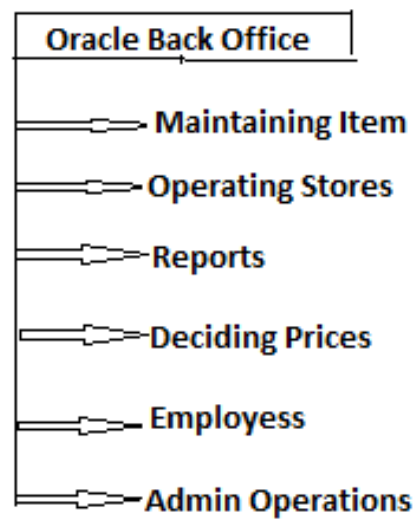


Fig:Oracle retail BO

2.4.2 KEY CAPABILITIES OF BO

Improve operational efficiencies with:

- a. Regional store parameter upkeep and framework design.
- b. Special occasion administration.
- c. Start-and end-of-day operations.
- d. Time and participation support.
- e. Role and security maintenance.
- f. Build responsiveness with remote access to all locations in store and enterprise.
- g. Enhance decision making with the most careful, easy to-use incorporated reporting pack.

2.5 Oracle Retail Central Office (CO): [2]

In Retail business, most critical functions are done at corporate level. There is a need for an application that enables easy management of data movement and access real-time information at the enterprise level. Oracle Central Office (CO) is one such application. CO is a browser based application. Oracle Retail Central Office is a scalable, all-in-one application that enables retailers to effectively oversee operations and better manage stores to ensure excellent customer service. Taking into account industry principles, this adaptable arrangement gives the capacity to oversee client data, encourage information development and get to constant data crosswise over channels.

- a. **Manage Stores Effectively and Improve Customer Service** Oracle Retail Central Office gives retailers the convenient, complete, also exact data expected

to successfully deal with their stores and guarantee prevalent client administration. Taking into account industry guidelines, Oracle Retail Central Office is a holding nothing back one application that lets retailers regulate ongoing customer information and give progressing access to that information from any store. It encourages information development and gives access to continuous data crosswise over channels. It moreover gives the ability to administer cross-channel trades and the electronic journal, including access to electronic customer marks for survey and misfortune counteractive action works out. Oracle Retail Central Office consolidates parameter organization, so the business can more easily and dependably complete store arrangements. Furthermore its complex information administration abilities power inherent work process innovations. Oracle Retail Central Office provides these advantages:

- Gives centralized administration of exchange data and any store can fetch data from it.
- Decreases shrink and distinguishes training lacks, with access to constant exchange, e-journal, and signature-catch data.
- Diminishes introduction to burglary by encouraging centralized exchange recovery which is mindful of transaction returns.
- Guarantees store strategy consistency by means of parameter administration, including job failure alerts.
- Takes care of the requests of big business, channel, and store faculty for adaptability and versatility through the utilization of Web services.

b. **Improve Operational Efficiency** Oracle Retail Central Office lets retailers manage store level transaction and configuration data from a central location, while services expose the data to authorized applications and the Oracle Retail Central Office web application allows the retailer to execute the application from anywhere. Oracle Retail Central Office features include:

- Transaction Tracker gives enterprise wide conglomeration of exchange, e-journal, and signature data by importing all transaction, e-journal, and captured-signature data.
 - Centralized Client permits an administrator to enter, oversee and store client information and gives Oracle Retail Point-of-Sale the capacity to recover that data from any store.
 - Parameter Support permits an approved administrator to effectively change the benefits of existing parameters for store frameworks.
- c. **Customer Centricity** Centralized Client allows a retailer to administer customer records at Oracle Retail central Office and make and recoup customer records at Oracle Retail Point-of-Sale. This is a phenomenal benefit to retailers as they will now have detectable quality into customer and exchange data at Oracle Retail Central Office. At Oracle Retail Point-of-Sale, this convenience enables an Oracle Retail Point-of-Sale cashier to have the ability to recuperate customer information from a centralized database. Oracle Retail Central Office Centralized Customer feature includes:
- Centralized Client permits an administrator to enter, oversee and store client information.
 - Gives Oracle Retail Point-of-Service the capacity to recover data in any store location.
 - Helps special pricing to particular clients

2.5.1 KEY CAPABILITIES OF CO

- a. Offers centralized administration of client data and real-time access to that data in store location.
- b. Reduces the quantity of third-party applications expected to oversee information development also get to constant data crosswise over channels.

- c. Permits access to electronic client signatures for review and loss-prevention activities.
- d. Guarantees store policy consistency through parameter administration, including job failure alerts.
- e. Takes care of the requests of big business, channel, and store staff for exhibity and versatility through utilization of Web services.

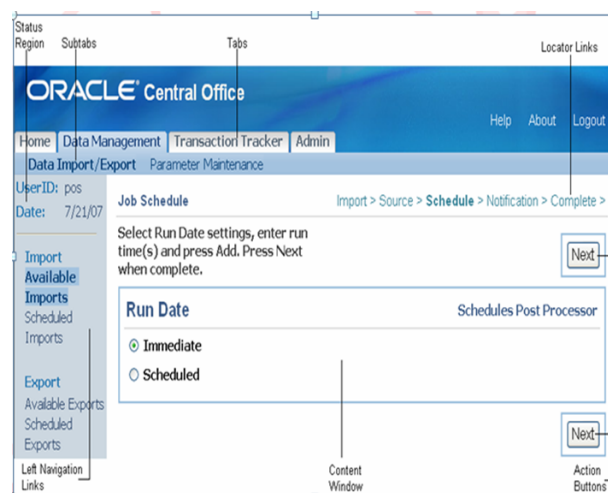


Fig:Oracle Retail CO

2.6 Oracle Retail Point-of-Sale (POS): [3]

- a. Oracle Retail POS is a java based application which is maintained on clients machine.
- b. POS framework is a truncation for the point-of-sale framework, which is an imperative segment of any business nowadays since it is utilized to track deals and stock, process installments and help in keeping clients cheerful by enhancing administration conveyance. Point of sale (additionally called as POS or checkout) is the spot where a retail exchange is finished. It is the time when a

client makes an installment to the trader in return for merchandise or administrations. At the point-of-sale the retailer would compute the sum owed by the client and give choices to the client to pay. The trader will likewise regularly issue a receipt for the exchange.



Fig:Typical POS system

In coordination with the central office and back office, following are the different operations taking place on a POS application:

- **Start a business day i.e. Open a store:**
Business Date and Amount in store Safe is entered and the store is Opened for that business day.
- **Open register:** The Store must be open before one or more registers can be opened
- **Open Tills:** A till is the cash drawer in the register. Float is the amount of money that is in the till when it is opened. Till ID and the Float in the till is entered and the till is opened for transaction processing.

- **Suspend tills:** A till may be suspended so that a cashier can move to another register and keep their current till. The cashier will have the option to remove the cash drawer. The financials will travel with the till when it is used in another register. All suspended tills must be resumed and then closed before the register may be closed.
- **Resume tills:** Suspended tills on a register must be resumed before register is closed. Suspended Tills may be resumed at the same Register or at a different register. All Suspended tills need to be resumed before end of day or store close.
- **Close tills:** Tills are closed at the register in Point-of-Sale. The user is given an option to remove the cash drawer while closing the till. The user is given a choice to reconcile the till at the workstation after closing the till.
- **Close Register:** All tills associated with a register must be closed and reconciled before the register can be closed. All registers must be closed before the store can be closed. A Register Summary Report is automatically printed on closing the register.
- **Close Store / End Of day:** All tills and registers must be closed before the End of Day function may be completed. The user accepts the balance and enters the total amount in the store safe before closing the store.

2.6.1 Benefits of POS system:

- a. **Replacing the traditional Cash Registers:** One of the focal points of any retail business is the cash registers. The capacity to process exchanges and tender cash are key to that effective operation of the enterprise. On the off chance that you have a ton of money exchanges, supplanting the money registers with a POS framework will spare a ton of cash. A POS framework is a computer software and hardware arranged together to track deals and stock as they happen.

- b. **Efficient Transaction Processing:** Most POS frameworks are simply extremely modern cash registers. A decent POS framework will eliminate or even dispose of human blunders that happen in merchant processing of transactions. For instance, most restaurants that don't utilize POS frameworks are powerless to the danger of request lapses because of poor communication in the middle of waiters and kitchen staff. Some retail locations have different sections for sale calculation and credit card processing. A decent POS framework can alter these issues, eliminating employee's mistakes and making correspondence between diverse sections of the business much less demanding.
- c. **Better Record Keeping:** POS frameworks institutionalize the configuration and capturing of exchanges, keeping a record of day by day sales that is sorted out and straightforward. This can be significant to administration organizations, in the same way as restaurants, which depend on exact records like computing tips for representative assessment data. A POS framework records each significant bit of data around an exchange: the representative who performed it, the sum, and the things or services bought.

2.6.2 Current State of Technology

The one thing in a retail location an entrepreneur can't manage without is cash management framework. Whether its the customary, electronic cash register or a fancy mechanized point-of-sale (POS) framework, each store needs a machine to process sales. when the entryways are open and the lights are on, the cash register gets to be more than a safe spot to store cash. It can spare cash, rapidly prepare a client's transactions and precisely keep records. As of now, retail POS Systems are among the highly advanced, effective and easy to understand computer networks in business use. Truth be told, most Point of Sale Systems do a great deal more than simply "Point of Sale" undertakings. Actually for the small-scale retail chain owners, there are Point of Sale Solutions accessible that incorporate completely integrated accounting, inventory tracking management, open-to-purchase forecasting, customer relation management (CRM), service management, rental services, operation reporting and payroll modules. Going before the present day POS, these limits were done uninhibitedly and obliged the manual re-scratching of information, which can provoke passage mistakes. Because of this, the present day point-of-sale is normally called as the Point of Service.

Chapter 3

Proposed Work

a. **Why is ensuring quality of POS system through rigorous testing so important?** In competitive business such as retail, a POS can be a key differentiator. Good POS software package increases efficiency by eliminating unnecessary work and can manage the entire business. If the POS system does not work as expected then grave repercussions might happen:-

- More man power might be needed due to unreliability and slowness of checkouts.
- Risks of incorrect inventory records and employee thefts
- Erroneous Sales reports would not provide correct inventory levels and hence controlling cost would become a challenge.
- Extremely difficult tracking of promotions, discounts, and coupons.
- Incorrect loyalty member data and hence loss of business due to non-repeating customers etc

Unmistakably it is essential for POS applications to be solid, adaptable, effectively viable, exceedingly secured, and effortlessly adjustable by the client and thus it requests a considerable measure of concentrate on viably testing the arrangement before it gets deployed.

3.0.3 How to test POS?

As mentioned earlier, to ensure quality of POS software, proper testing of the application is very crucial. Just like any other application to test a POS a good test plan should be developed too. To test a POS one has to focus on a lot of things, few are listed below:

- a. **Cashier activity:** This incorporates client exchanges, for example, the passage of things, tender, Store Value Cards, rebates and layaway. It likewise incorporates non-client exchanges, for example, cash drawer loans, insignificant money, sums and closings.
- b. **Store Server and Back Office Integration:** Verification of POS communication with store servers and back office frameworks. Register exchanges can be checked against the Electronic Journal for precision.
- c. **Platform check:** In the event that the POS helps multiple-platforms then confirmation of the usefulness on the all the stages ought to be a piece of testing
- d. **Sales:** General deal, Deal with credit/debit/gift card, return, trade, dedication part buy, things, amounts and costs.
- e. **Manage return and exchange:** Return and trade of a thing with diverse tenders (money, credit and so on), with and without receipt.
- f. **Discounts and Promotions:** Item
- g. **Loyalty Members Data:** The framework stays informed regarding what your clients are purchasing and who they are. It stays informed regarding what's offering, at what times of day or week, to which sorts of clients and by which sales representatives. The information gathered from POS terminals is valuable in arranging of long term strategies. A decent POS Framework will likewise have update dates for each one client so you can call or email them before a celebration or birthday.

- h. **Ability to Read a Card** There are various types of cards in the industry today. (Magnetic Stripe, CAV, etc)
- i. **Performance** Pace or the time taken to send a solicitation (read) and get reaction and applying the transaction based standards (ex Refunds/Rebates/Charge and so on)
- j. **Negative Scenarios** Various transaction declined scenarios (Invalid Card/PIN/Expired Card etc.)

Talking about software testing, this field can be broadly divided into manual and automation testing. Each of which has its own pros and cons, however, as software testers are becoming well versed with latest automation technology, manual testing has started to take back seat in many cases. Lets study them with respect to our subject at hand i.e. POS.

3.0.4 What are the challenges in manual testing of POS?

Testing a POS software package manually can lead to many challenges:-

- a. **Multiple Configurations** Testing a POS application with diverse settings and setups is a lumbering assignment. Test Cases ought to be composed covering every last situation (positive or negative) in point of interest. Thus critical plan ought to be placed in testing of such applications to prevent any moajor issues at the client end.
- b. **Peripheral issues** The fringe issues may be identified with gadgets which are associated with a POS like barcode scanners, scales, printers, towers and cash drawers.
- c. **Complex interfaces** Integration of POS Framework includes various inter-connected frameworks and outsider components. Deliberate test configuration methods are taken after to lessen the unpredictability of interfaces

- d. **Test Lab Maintenance**As a lot of equipment is typically joined with a POS, so it occupies a lot of space to house this hardware fittings. You additionally need to put some exertion and cost into keeping the equipment in great repair.
- e. **Upgrades** Fast innovative progressions require a continuous hardware and software upgrades redesigns which requires more infrastructure.
- f. **PCI Compliance**Mind must be taken to embrace of PCI-consistent, carefully designed framework at all terminals to secure cardholder information and personality.

3.1 How can Automation Testing help?

To save manual testing time, a test automation strategy can be developed. Test automation frameworks decreases time to market and testing expenses while expanding and enhancing test scope, item quality, and end-client acknowledgment. Organizations that expand the extent of mechanized testing have a conclusive playing point over their rivals. It is a proven that automation testing has an edge over manual testing because it provides enhanced test coverage, saves testing time and cost, gives objective testing evidence in the form of customized reports, easy defect tracking for faster troubleshooting. Having said this, before proposing automation testing as a solution, it is important to carefully analyze the ROI on the whole effort. Test automation is a technique to decrease deadlines, cut expenses and enhance quality. Be that as it may before we procure the profits of computerization we need to make huge investments. It is additionally conceivable to ascertain the conceivable returns of the test automation investments. In light of the inputs, (for example, discharges arranged every year, number of regressions testing, size of manual testing group and so forth), a return for capital invested report can be created which:

- a. Investigates the expense included in automation.
- b. Looks at the exertion and expense for both manual testing and test automation.

- c. Provides the break-even period
- d. Presents the saving in percentage

3.2 Challenges handled with automation testing of POS:

The following are the major issues that were raised during automation testing of POS along with the approach adopted to solve those issues:

- 1) Developed a function storePuttyResult in QTP to automate the result retrieval process through Putty.

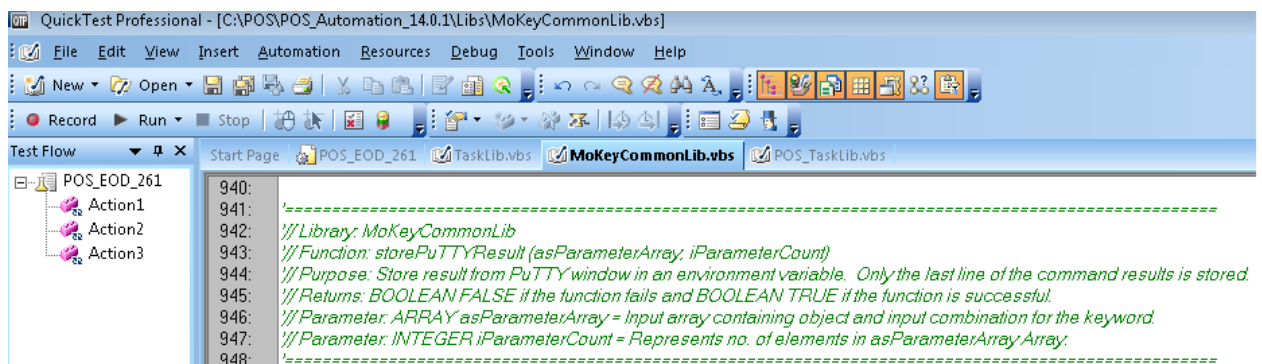


Fig:storePuttyResult Function in QTP

- Work Flow:
 - 1) Certain DB server related operations required logging via a third party software called Putty
 - 2) Earlier this particular operation was done manually to check whether data flow and batch execution was successful or not.
 - 3) This function will launch into Putty and hence launch into the application's DB server and will return a variable to indicate the success of the batch.
- 2) Developed a function `previewReportEnd` to fetch the result from POS UI into local machine.

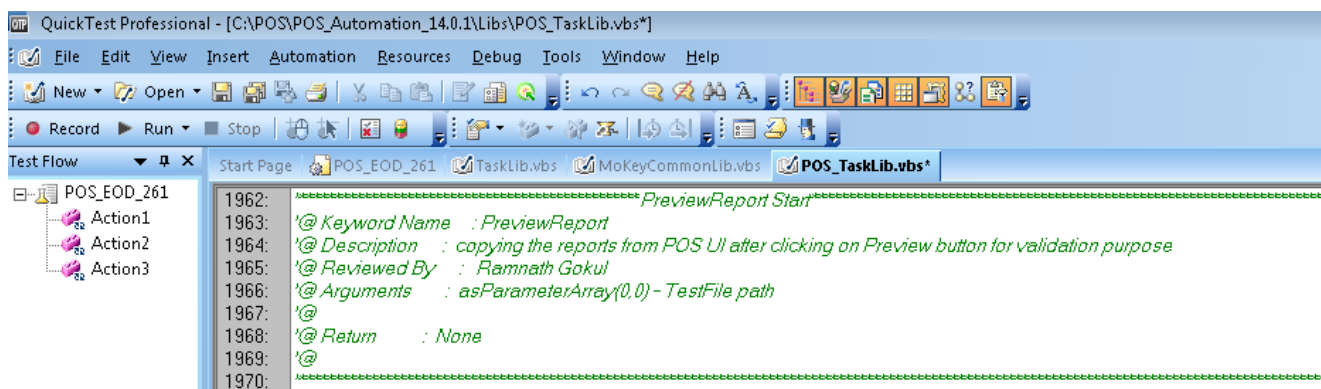


Fig: PreviewReportEnd Function

– Work Flow:

- 1) A report file gives an idea about which test cases failed and passed and the execution time taken by them
- 2) Earlier the results had to be referred in another dedicated HP result viewer or manually read from application .
- 3) This function will fetch the results into an excel sheet and store it on local machine.

	A	B	C	D	E	F	G	H	I	J
1	Test Script Name	Status	Total Validated	Passed	Failed	Start Time	End Time	Time Elapsed		
2	POS_Summary_134	Failed	51	49	2	11/19/2014 ->	11/19/2014 ->	11:07	Time issue	
3	POS_Summary_262	Failed	29	27	2	11/19/2014 ->	11/19/2014 ->	7:59	Till close error	
4	POS_Summary_142	Passed	28	26	2	11/19/2014 ->	11/19/2014 ->	10:03		
5	POS_Summary_235	Failed	26	24	2	11/19/2014 ->	11/19/2014 ->	7:25	Till close error	
6	POS_Summary_246	Failed	26	24	2	11/19/2014 ->	11/19/2014 ->	7:25	mismatch	
7	POS_Summary_248	Failed	21	19	2	11/19/2014 ->	11/19/2014 ->	7:20	Could not find the object	
8	POS_Summary_250	Failed	13	7	6	11/19/2014 ->	11/19/2014 ->	0:03	return reason code not match	
9	POS_Summary_251	Failed	13	7	6	11/19/2014 ->	11/19/2014 ->	0:03	Till close error	
10	POS_Summary_252	Failed	13	7	6	11/19/2014 ->	11/19/2014 ->	0:03	mismatch	
11	POS_Summary_256	Passed	13	7	6	11/19/2014 ->	11/19/2014 ->	0:03		
12	POS_Summary_259	Failed	13	7	6	11/19/2014 ->	11/19/2014 ->	0:02	mismatch	
13	POS_Summary_25	Result File Not Found								
14										

Fig:Output Report after the function

Chapter 4

Automation of Oracle Retail Merchandising System(ORMS)

4.1 Literature Survey (Phase II): [13]

4.1.1 Introduction:

Oracle Retail Merchandising System(ORMS) is a Oracle Fusion Middleware Forms Based system. RMS furnishes clients with a complete application to deal with the principal components of their business, for example, organization and item orders, areas and suppliers.It is called the parent product of all products existing in a Retail Business. It is considered to be the start point of any Integration process. The birth of an item takes place here. the actual flow in an Integrated Business Environment starts from RMS. The arrangement empowers retailers to better oversee, control and perform critical regular promoting exercises from new item prologue to automated renewal to money related stock valuation. As the central source of every single information,RMS gives organizations a precise perspective of unending stock and money related execution over their whole retail business.

4.1.2 Key Features:

- 1) **Managing the most crucial Foundation Data:** RMS empowers clients with a complete application to deal with the central components of their business, for example, organization and item chains, areas and suppliers. Items will be bifurcated into different types like Regular item, Simple Pack Item, Component Pack Item, Fashion Item, etc. Also related information to the items like its location, supplier, area, class, department, orders etc will be resided with RMS.
- 2) **Track and Transfer the stock/inventory at any point in the system:** RMS is all around set to handle the prerequisites of the quick paced multi-channel environment. New channels can be included as required and the hierarchy can be balanced effectively. RMS gives continuous stock perceivability, the alternative to isolate stock by channel and the capacity to screen all transactions, including sales, by channel.
- 3) **Handle the management of necessary Data:** RMS is interesting in that relying upon the retailer's prerequisites; it can go about as either the expert or beneficiary for specific data. Requests can be made inside the Merchandising System itself, or be sent from an outside framework through guidelines based web administrations. Items can be created from a Master Data Management system, a Product Lifecycle Management or an Assortment Planning solution. Items can likewise be drafted from a spreadsheet for creation or support or they can be started inside the Merchandising Framework.
- 4) **Thorough tracking of the expense/cost:** The system handles the defaulting and cost, estimation of assessed landed expense, which gives retailers a more goal premise view for supplier cost assessment and guarantees more exact stock valuation in the buying cycle. Value Added Tax (VAT) can also be computed and tracked within the solution.
- 5) **Centralized Inventory Management:** All stock related transactions whether

moving to-and-fro of the organization come to the RMS. It is supposedly the entry and exit point of any Integration system. The flow starts and stops here. This gives extreme perceivability and exact unending stock to drive choices on replenishment, allotment furthermore, estimating in a business anywhere environment.

- 6) **Globalization:** RMS supports multi-currency, multiple legal entities and multi-language in a single instance. It also extends as a flexible solution to all the retailers residing in different countries and who work on a variety of financial records. It also supports a variety of language as the translation for these languages will be handled by the underlying code in RMS.

4.2 Work Flow and Automation Approach used:

4.2.1 Work Flow:

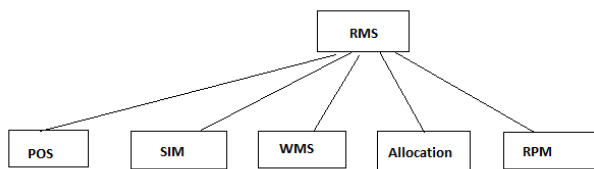


Fig:Work Flow of ORMS

As seen in the above figure, RMS is the parent product of all the retail products. When dealing with the integration of various retail products, the flow starts from RMS. Then as per the functionality, related products are given a call. For an instance, when dealing with a Warehouse Management System, necessary foundation data like Item creation, Order creation etc take place in RMS. Then on-wards necessary warehouse related operations are carried out in RMS. Again if that item needs replenishment, it calls back to RMS. So a to-and-fro flow depending on the functionality takes place making RMS as the start point of any integrated operations.

4.2.2 Automation Approach used:

RMS is a Oracle Fusion Middleware Forms Based system. So an automation tool capable enough to deal with Forms based technology is required to automate the process.

Tool used : Oracle Application Testing Suite(OATS)

OATS is a tool developed by Oracle which uses OpenScript sub-tool based on eclipse platform to automate forms based, web-based, ADF based applications.

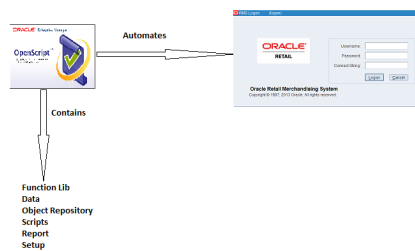


Fig: Work Flow of OATS

4.3 Challenges handled with automation testing of RMS:

The following are the major issues that were raised during automation testing of RMS along with the approach adopted to solve those issues:

- 1) Automated the Putty Batch Login functionality.
 - (1) Requirement : Batches should run via Putty to enable data flow
 - (2) Database Validations should be done after each batch executes
 - (3) Automated the entire to and fro flow between DB, Putty and OATS
- 2) Developed a central library in OATS to handle batches across all the sub-functions of RMS.
 - Earlier the design was so created to enable Putty functionality differently for each sub-functions of RMS.]item Developed a central library to optimize the functionality and enhance the DB calls and Putty calls to make a better design for all areas.
- 3) Contributed to develop the Controller Table Database Design to replace the existing CSV based design.
 - The earlier system made use of a csv file to pass input data to the application.
 - Contributed to develop a design that would replace the csv file and instead fetch data from controller tables and flow into GUI as well as Application Database.

Chapter 5

Scriptless Automation Testing : An efficient approach over Scripted Automation Testing

5.1 Evolution of various Approaches for Automation Testing: [8] [9]

As more number of It organizations are recognizing the need of maintaining the quality of a software, the doors to software testing are getting wide opened. Also a need arises for these leading IT organizations to deliver more quality products to customers keeping in mind the limitation of resources and limited amount of time. This leads to a situation where we need to:

- Identify a tool that will fulfill the needs for particular applications
- Test automation of multi-technology product suites
- Cost-effective approaches

At the centre of any automation framework lies its core engine. The traditional set of tools sit on top of this core framework. The testware development procedure

underwent a succession of generations, which became more enhanced and advanced with every succession of generation.

- 1) 1st Generation-”Record and Playback” : This first generation of automation testing was the heart of Regression Testing. In this method, every testcase is in the form of series of actions and the testdata is hardcoded within the testcases. At the initial stage of this method, very minimal amount of coding is required which is in a way beneficial for the beginners. But with minimum amount of coding, the scripts were kind of unstable and any minor error or changes in the testdata will lead to a havoc for automation. So for an upgraded application to run successfully, corresponding changes have to be made in the test cases.

The major advantage of this method is that the testcases can run smoothly even if unattended for several hours of day which made regression testing quite possible.

Bringing a new change to the AUT will lead to manually record the testcase again which was very expensive and increased the maintenance cost.

- 2) 2nd Generation- ”Scripting + Record and Playback” : An additional feature of scripts was added to the traditional record and playback method. Scripts were made highly modified and customized. The buzz was there in the market that software testing has now turned into software development process as for creating a new test case one needs to create a new script.

This method demanded a lot of technical knowledge, expertise and support. The biggest challenge was to maintain the ever increasing libraries of automation scripts.

- 3) 3rd Generation- ”Data Driven Testing” : The major issue or problem with the previous two generations of automation testing is high demand for maintainability and lack of scope for test coverage. To solve these issues, data driven testing came up with an idea in which the automation scripts are separated from the AUT. The test library is produced using test scripts while the test

data is made independently. At the heart of such type of testing are Driver scripts. By passing various types of data sets to the script, we can eliminate the problem of expansion of scope of test coverage. At the same time this prompts increment in the extent of real automation code and requests loads of time and exertion for upkeep adjustment and changing.

- 4) 4th Generation-"Keyword Driven":To overcome all the limitations of the previous framework and to provide a packet of advantages, comes the Keyword Driven Testing in which the test data itself will direct the testing instead of scripts.The test data makes use of keywords and a sequence of actions to make the test case run. Exactly when the automated test case runs, it will read through the test data and require the vital script showed by the keyword, passing AUT the data for that line. Subsequently, test masters compose scripts containing keywords to perform all essential activities to test the business/practical undertaking for which this script was composed.

The primary preference of this strategy is that it gives full control to the analyzer over the process.In any case, viable use of action keyword script obliges custom coding, and general code backing can devour up time and trade in for spendable dough the occasion of huge scale ventures.

- (5) 5th Generation-"Scriptless Testing/ UI Object Map Based": Also known as Advanced Codeless Test Automation.The major advantage of this approach is to eliminate programming of scripts for each and every test case in the tools native language. Traditional Code editors get replaced with GUI based environment. The testers now just need to select the needed object and its corresponding action from a drop down list of values. To use this type of testing, no extraordinary technical knowledge is required.Even Business analyst and Domain experts can move into automation testing via this approach.It resolves the maintainability, reliability, and the ease of development of test scripts.This approach makes the scripts turn UI object specific rather than AUT object specific.And

whenever the AUT undergoes change, you need to only change object map and the data, not the scripts for the UI object class. The only time this needs to be changed is when new UI objects are introduced or when the behavior of existing UI-object-class changes.

5.2 Definition of Scriptless Automation Testing [10]

SCRIPTLESS is an APPROACH to build an OPTIMIZED test automation engine by EMPOWERING testing team to QUICKLY build automated test cases by sequencing READY but REUSABLE code assets to ensure 100 percent test coverage and EXPLOITED ROI release on release.

Traditional Test Automation makes you work hard. Scriptless Test Automation works hard for you.

With this approach, the traditional tool based code editors get replaced by GUI based environment where the needed actions and its corresponding actions are selected from a drop down menu. The GUI is so designed that the user can visualize while creating conditions and iterations. Scriptless automation testing refers to the development of tests in an easily understandable and user-friendly manner that makes it easier for all stakeholders to contribute. Aimed at reducing testing effort and maximizing productivity of automation testers, it eliminates scripting, enabling business and functional experts who do not have any programming skills to create automated tests.

Scriptless indeed means No Scripting in tool's native language but that doesn't imply that there won't be any scripts involved as automation is simply not possible without pieces of code. Explicitly, this means while automating test cases, there is no more need to program scripts for each test case. It will add a layer of abstraction on top of automation tools to hide the complexities of scripting so that each and every stakeholder can easily participate in the process of testing. With this approach, writing testcases means writing it in English like language using simple tools like MS-Excel. Regardless, which basic test automation tool you use, with scriptless approach your

testing group can now effectively automate substantial set of experiments upto 1.5 times speedier than at any other time in recent memory some time recently. Nuggets of script which is already fed into te system will reside on any automation tool and is sequenced in an order and passed to automate the data whenever called.

5.3 Constituents of Scriptless Automation Testing

[12] [14]

instead of spending maximum time in learning or using a particular scripting or programming language, Scriptless automation testing focuses on usage of a easy to use graphical interface provided by drop down menus or Excel like graphical environment. Scriptless testing depends on the use of keyword abstractions as inputs to build test steps and sequences dynamically. For example, a test script for a set of user actions is represented by a sequence of easy-to-understand keywords. These keywords are then automatically translated to concrete low-level scripts in memory.

Object-Action paradigm

Object	Action	Parameters
Browser	Launch	IE
URL	Load	https://xyz.com/login.jsp
Login_Field	isVisible	
Login_Field	SetText	"Username"
Password_Field	SetEncryptedText	"PRebjshrU"
Submit_Button	isEnabled	
Submit_Button	Perform_Click	

Tests can thus be translated to a spreadsheet and saved in a comma separated values

(CSV) format. Low-fidelity prototypes or wireframes are used to create simple test-cases, and the automated test case design can begin even before the application is developed. The listed object names are meta-names that serve as placeholders. The main objective of maintaining a central repository is to reflect any changes that are made across all the test cases which can save both, time and efforts involved in maintaining a script. The underlying scripting engine interprets the keywords and performs the execution in the automation tool.

5.4 Need for Scriptless Automation Testing: [15]

- 1) Reduction in time taken for automation by almost 40% : Time is a crucial factor when it comes to delivering products to the customer. The faster we automate the things, the faster it can get released into the market and reach the customer. Going scriptless ensures your testing team(s) can automate large test suites 1.6 times faster than ever before. This fact holds true even in the crucial cases when a product undergoes a major change.
- 2) Brings out the Best from a testing team: Loads of time which was earlier spent in building test automation can now be saved by using Scriptless approach and hence that time can be utilized to achieve high test coverage. This guarantees your testing group can get bugs at an early phase of item improvement and you assemble prevalent quality item at speeds that you have never experienced previously.
- 3) The domain champs can now participate in test automation: This counts for the biggest advantage in testing field as till date, the business analysts and domain experts were not able to contribute in the test automation process due to lack of scripting and high level of technical knowledge. But by adopting Scriptless approach, they can themselves develop an entire test automation suite or may be an individual test case to ensure that the quality of the product is well

maintained.

- 4) Cut the cost spent on building in-house scripting skills: With this approach, one can avoid rigorous trainings on test automation tools. So adopt this approach and one can start automating test cases in no time irrespective of their limited knowledge in automation testing field.

5.5 Advantages of Scriptless Automation Testing:

- 1) To support various kinds of Optimizations like:
 - Operational Optimization: Utilization of same resources across multiple projects. Maximize test automation tool throughput
 - Financial Optimization: Every resource is profitable. Optimize current test automation tool licenses. Scalability now no more a factor of resources
 - Strategic Optimization: Quality is sync with production.
- 2) Avoid coding which is limited to a particular tool only: Scriptless testing approach adds a layer of abstraction between the user and the tool so as to hide the details of the underlying tool from the user. The user can now start building the automation test case using English like language which is compiled by the scriptless framework into a language which the underlying tool can understand. This facilitates the user to change the underlying tool at any point of time as although scriptless approach collaborates with the automation tool, it still stays independent of it.
- 3) Increases the Automation Speed: The time taken to automate the scripts decreases by a significant margin since now there is no need of using a complex programming language as the test cases are written in plain English

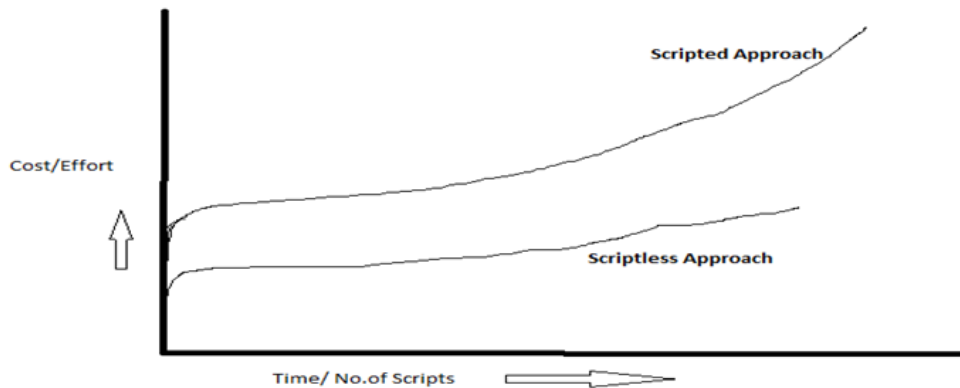


Fig:Cost comparison of both approaches

like language.

- 4) The Investment rate gets fundamentally optimized:Scriptless handles the undertaking of building automation. The automation instrument can now completely focus on stretching its throughput executing the regression testing. The amount of regression cycles that 5 automation tests used to do can now be fulfilled by only 2 such licenses!Since even manual analyzers can pull automation, the prerequisite for masters in sheer number has decreased. With a little number of test automation experts and your group of manual analyzers you can fabricate and oversee extensive scale automation projects.
- 5) No need of high level maintenance:To improve the quality of automation, scriptless approach guides you to resolve any critical dependencies and changes taking place in the automation life cycle.

- 6) Highly Tested product: Since scriptless system on run time compiles an automated test case into what test device will see, there is no opportunity to hard code cases to report achievement.
- 7) Highly Tested Automation Code: Scriptless methodology will create test-cases which are not AUT dependent however are UI object class dependent. So for an AUT with 500 textboxes in its UI all actions are performed by one script that is particular to the object class of text box. The more that script is utilized, the more it is tried by testing each one activity on 500 text boxes.

5.6 Myths of Scriptless Automation Testing: [11]

- 1) Scriptless is similar to record and playback method: With this approach the user will record the objects of the AUT and playback it for execution. While user is performing operation on the AUT, the recorder keeps generating scripts automatically. Hardcoded test data will be present as an input in the recorded scripts which is unable to handle dynamic situations. As it fails to handle the validation and errors on its own, it is more prone to get errors. The recorded script lacks maintainability, scalability and reliability in the long run.
Now in a Scriptless approach, there is no need for the user to record any objects and they can directly make use of available keywords in the drop down like menus. These available keywords are quite efficient and makes the scripts easily reusable, maintainable and robust. It also provides flexible approach to handle dynamic objects and associate multiple data sets.
- 2) Scriptless is proportionate to script-free: Script-less automation is an experience made conceivable by building keywords (which are basically scripts) that can be again used crosswise over applications, tools, technologies, platforms, and so on. Main ideology is to create a library of simple keywords that is avail-

able for reuse by the functional experts which will allow them to speed up the automation of testcases without using any complex scripting.

Examples of various types of Keywords are Click, Select Item, Enter Text, et-cand operations such as arithmetic, file, database, and many more.

- 3) The reliability and maintainability of Scriptless approach is very less: This approach adds a level of abstraction so that this approach can work well across multiple platforms, various automation tools and vivid applications. This approach will keep a track of all the reusable components and maps hteir dependencies so as to improve the efficiency of application lifecycle.
- 4) Scriptless approach eliminates the need of automation experts: There are no two ways that with the usage of this approach even domain experts and business analysts can contribute to automation but this doesn't imply that we don't need automation experts. We definitely need help of these automation experts to prioritize the tests and to bifurcate as to which test cases can be automated and which cannot be.Only these experts can extend the scriptless framework and lay down a complete planning for the test data.It offers the capacity to utilize the best of both worlds to attain reliable, speedier automation by permitting you to influence your current group's qualities.

5.7 Limitations of Scriptless Automation Testing:

- 1) Without prior knowledge of development background it is not quite possible to implement automation, so the fact that scriptless approach will allow even a total non-technical person to automate is not true.A small team of test engineers and experienced architects must keep in touch with it so as to make the automation approach a hit.
- 2) Scriptless automation is a misnomer.This is not at all a "codeless scripting", which most of the time it is misunderstood as. It is not possible to completely

abstract the code associated with automation from the script.

- 3) At its heart, test automation is an engineering effort to create software that tests software. It requires a particular set of software development skills to build and maintain the framework. This framework usually consists of the logging and error handling but also must include reusability and modularity. Without automation engineers involved in the project, any scriptless solution can quickly devolve into a fragile, non-maintainable nightmare

5.8 Observation Table:

Function	Time Taken by Scripted	Time Taken by Scriptless
Login and Logout in, e-commerce site	52 sec	50 sec
Login and Logout + add 1 item to cart	1.67 min	1.50 min
Login and Logout + add 1 item to cart and other to wish list	2.50 min	2.42 min
Login and Logout + check wallet	1.23 min	1.18 min

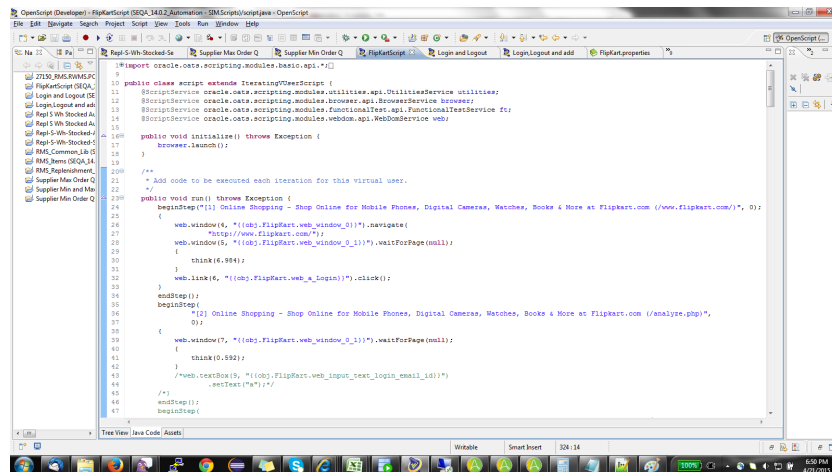
5.9 Approach adopted for Comparison:

The Automation testing of any software, irrespective of the fact that it is scripted or scriptless, makes use of some tools. To show some striking comparison in performance between scripted and scriptless, Different automation tools will be used which will reflect how scriptless automation testing steals the show by saving on time, increasing the users ease with improved GUI based testing technology.

Tool used for Scripted Automation: Oracle OpenScript

Tool used for Scriptless Automation: Automation Anywhere

A web-based application is taken under consideration for testing purpose. for instance "flipkart.com". Now various functions of varying size are designed keeping in mind different test case scenarios. These scenarios are recorded using both the tools and time taken by respective tools will be noted. Hence the point will be proved that Scriptless AUtomation is better than Scripted Automation.



```

1  *Import oracle.atsa.scriping.modules.basic.api.*
2
3  @FlipkartScript (ORA
4  @Login and Logout (S
5  @LoginLogout and web
6  @Page 5 Web Stocked A
7  @Page 5 Web Stocked A
8  @Page 5 Web Stocked A
9  @Page 5 Web Stocked A
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11 @Page 5 Web Stocked A
12 @Page 5 Web Stocked A
13 @Page 5 Web Stocked A
14 @Page 5 Web Stocked A
15
16 public void initialize() throws Exception {
17     browser.launch();
18 }
19
20 /**
21  * Add code to be executed each iteration for this virtual user.
22  */
23 public void run() throws Exception {
24     beginStep("[1] Online Shopping - Shop Online for Mobile Phones, Digital Cameras, Watches, Books & More at Flipkart.com (/www.flipkart.com/)", 0);
25     {
26         web.window(6, "{(obj).Flipkart_web_window_0}").navigate(
27             "http://www.flipkart.com/");
28         web.window(6, "{(obj).Flipkart_web_window_0}").waitForPage(6000);
29         {
30             think(6.984);
31         }
32         web.link(6, "{(obj).Flipkart_web_a_login}").click();
33     }
34     endStep();
35     beginStep(
36         "[2] Online Shopping - Shop Online for Mobile Phones, Digital Cameras, Watches, Books & More at Flipkart.com (/analyze.php)",
37         0);
38     {
39         web.window(7, "{(obj).Flipkart_web_window_0}").waitForPage(6000);
40         {
41             think(0.592);
42         }
43         /*web.textBox(9, "{(obj).Flipkart_web_input_text_login_email_id}")
44             .sendKeys("a");
45         */
46         endStep();
47     }
48     beginStep(

```

Fig:Snapshot of OpenScript Screen

CHAPTER 5. SCRIPTLESS AUTOMATION TESTING : AN EFFICIENT APPROACH OVER

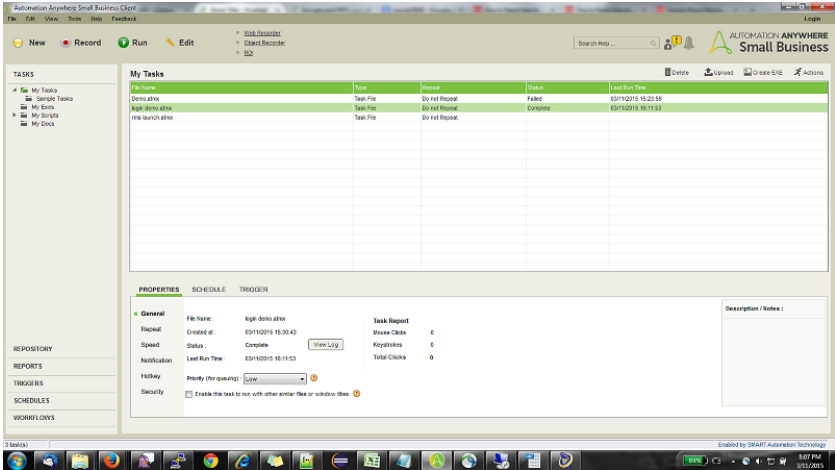


Fig:Snapshot of Automation Anywhere Screen

References

- [1] Oracle Retail Back Office
- [2] Oracle Retail Central Office
- [3] Oracle Retail Point-of-Service
- [4] Oracle Retail Stores Solutions
- [5] Operational Flow
- [6] Enhancements
- [7] Making Scriptless Automation a pleasurable experience
- [8] Evolution of Test Automation Generation
- [9] Evolution of Test Automation Frameworks
- [10] Defining Scriptless Automation Testing
- [11] Myths related to Scriptless Testing
- [12] Constituents of Scriptless Testing
- [13] Oracle Retail Merchandising System
- [14] Components of Scriptless Approach
- [15] Need of Scriptless Approach