TriPed – Digital Drawer

A PROJECT REPORT Submitted

in partial fulfillment of the Requirements

for the Degree of

MASTER OF COMPUTER APPLICATION

by

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(AUGUST 2021)

DECLARATION

I hereby declare that the work presented in this report entitled “TriMed- Digital Drawer”, was carried out by me. I have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute.

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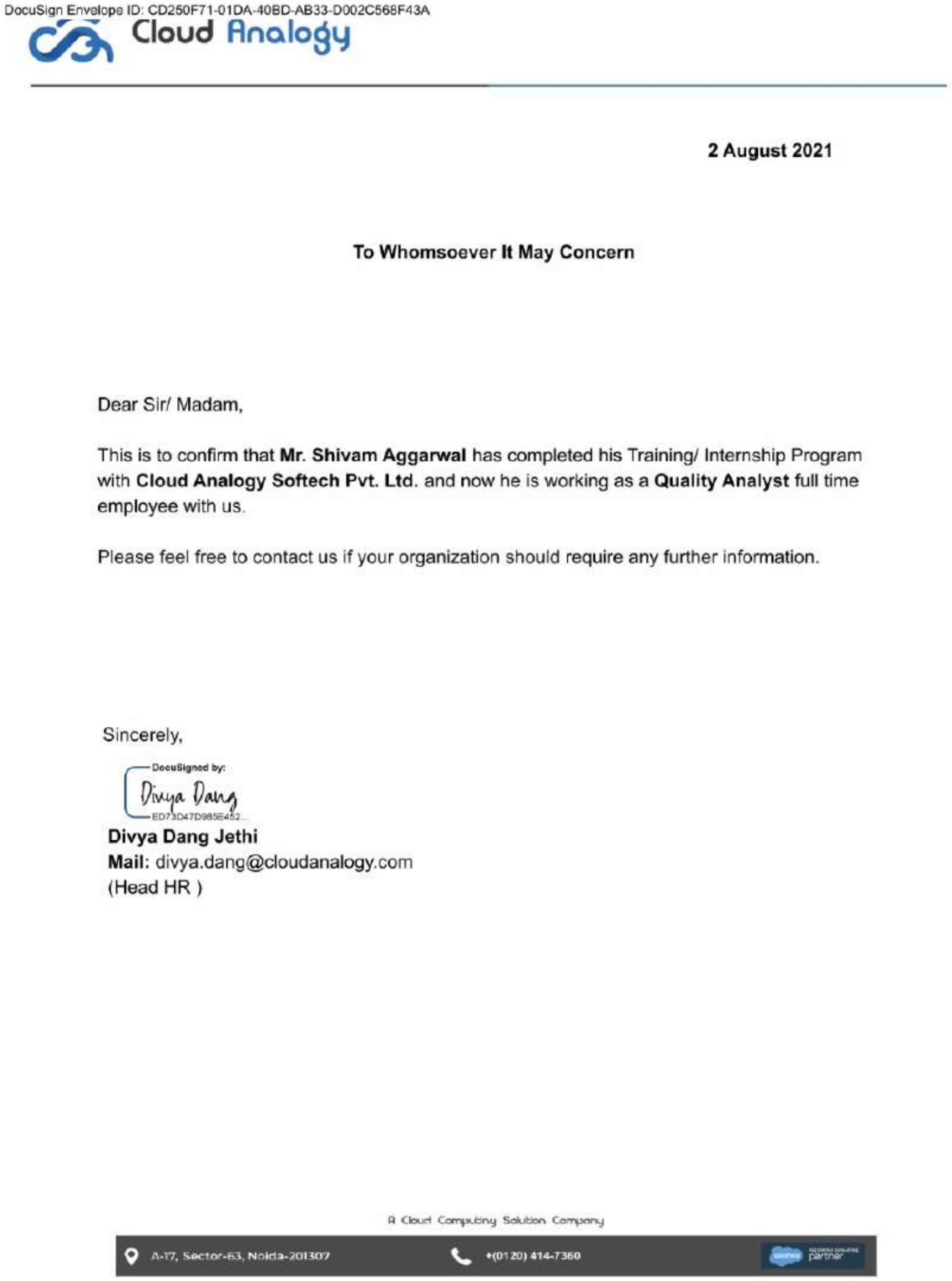

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Cloud Analogy

2 August 2021

To Whomsoever It May Concern

Dear Sir/ Madam,

This is to confirm that **Mr. Shivam Aggarwal** has completed his Training/ Internship Program with **Cloud Analogy Softech Pvt. Ltd.** and now he is working as a **Quality Analyst** full time employee with us.

Please feel free to contact us if your organization should require any further information.

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CERTIFICATE

Certified that **Shivam Aggarwal** (**Univ. Roll No. 1900290149093**) has carried out the project work presented in this report entitled "**TriPed – Digital Drawer**" for the award of **Master of Computer Application** from Dr. A.P.J. Abdul Kalam Technical University, Lucknow under my supervision. The report embodies result of original work, and studies are carried out by the student himself and the contents of the report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University.

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1900290149093

Table of Contents

Declaration ii

Training Certificate iii

Certificate iv

Acknowledgements v

Table of Contents vi- viii

List of Figures ix

List of Tables x

Chapter 1: INTRODUCTION **1**

1.1 Benefits of Testing 1

1.2 Modify Code with Confidence 1

1.3 Identify Bugs Early 1

1.4 Improve System Design 1-2

Chapter 2: LITERATURE REVIEW

2.1 Abstract Review 3

2.2 Introduction 7

Chapter 3: HISTORY OF TESTING 8

Chapter 4: TESTING CONCEPT

4.1 Testing Methodologic: 9

4.2 Level of testing 9

4.3 Type of testing 9

4.4 STLC 9

4.5 Testing 10

4.6 Test planning 10-12

4.7 Test cases 12-13

4.8 Positive Test Cases 13

4.9 Negative Test Cases 14

Chapter 5: CODING 15-67

Chapter 6: SYSTEM TESTING 68

6.1 Software Validation 68

6.2 Software Verification 68-69

6.3 Manual Vs Automated Testing 69

6.4 Testing Approaches 69

6.5 Black box testing 70

6.6 White-box testing 71

6.7 Testing Levels 71

6.8 Unit Testing 72

6.9 Integration Testing 72

6.10 System Testing 72

6.11 Regression Testing 73-74

6.12 Testing vs. Quality Control, Quality Assurance and Audit 74

Chapter 7: SALESFORCE 75

7.1 Salesforce ORG: 76

7.2 Why Salesforce? 76

7.3 Salesforce Lighting ORG 77

7.4 Salesforce Classic ORG 77

7.5 Sandbox ORG 78-80

7.6 Apex jobs 80-81

7.7 Apex classes 81

7.8 Apex Trigger 82

Chapter 8:

8.1 Output screen 83-84

Chapter 9:

9.1 Introduction to Assigned Job 85-87

Chapter 10: Test sheet of TriPed - Digital Drawer

10.1 Manual Test sheet of TriPed – Digital Drawer 88

10.2 Manual Test sheet of TriPed – Digital Drawer 89
After Bug Fixing (Re-Test sheet)

10.3 Automation testing of TriPed – Digital Drawer 90-91

Chapter 11: CONCLUSION 92

Chapter 12: REFERENCE 93-95

List of Figures

Fig 6.1	Black-box Testing	70
Fig 6.2	White box Testing	71
Fig 7.1	Salesforce Profile	76
Fig 7.2	Salesforce Lightning org	77
Fig 7.3	Salesforce Classic org	77
Fig 7.4	Sandbox org Home	78
Fig 7.5	Sandbox org (Patients)	78
Fig 7.6	Sandbox org (Surgeries)	79
Fig 7.7	Sandbox org (Folder Management)	79
Fig 7.8	Sandbox org (Folder Files)	80
Fig 7.9	Apex jobs (1)	80
Fig 7.10	Apex jobs (2)	81
Fig 7.11	Apex Classes	81
Fig 7.12	Apex Trigger	82
Fig 8.1	Surgeries in AWS	83
Fig 8.2	Patients in AWS	83
Fig 8.3	Folder Management in AWS	84
Fig 8.4	Digital Library in Salesforce	84
Fig 10.1	Manual Test sheet of TriPed	88
Fig 10.2	Manual Test sheet of TriPed (Re-Testing)	88
Fig 10.3	TOSCA Test Cases Page	90
Fig 10.4	TOSCA Requirements Page	90
Fig 10.5	TOSCA Modules Page	91
Fig 10.6	TOSCA Execution Page	91

List of Tables

Table 4.1	Template for Test Case	12
Table 4.2	GUI Test Cases:	13
Table 4.3	Positive Test Cases	13
Table 4.4	Negative Test Cases	14

CHAPTER 1

INTRODUCTION

When we write code, we need to run it to ensure that it is doing what we expect it to. Tests are a contract with our code given a value, we expect a certain result to be returned.

While passing tests cannot prove the absence bugs, they do inform us that our code is working in the manner defined by the test. In contrast, a failing test indicates that something is not right. We need to understand why our test failed so we can modify code and or tests, as required.

1.1 Benefits of Testing

A well-thought-out testing strategy paired with thorough test cases provides the following benefits:

1.2 Modify Code with Confidence

If a program does anything of interest, it has interactions between functions, classes, and modules. This means a single line change can break our program in unexpected ways. Tests give us confidence in our code. By running our tests after we modify our code, we can confirm our changes did not break existing functionality as defined by our tests.

In contrast, modifying a code base without tests is a challenge. There is no way of knowing if things are working as intended. We are programming by the seat of our pants, which is quite a risky proposition.

1.3 Identify Bugs Early

Bugs cost money. How much depends on when you find them.

Fixing bugs gets more expensive the further you are in the Software Development Life Cycle (SDLC). True Cost of a Software Bug digs into this issue.

1.4 Improve System Design

This one is a bit controversial, but I think writing code with tests in mind improves system design. A thorough test suite shows that the developer has thought about the problem in some depth. Writing tests forces you to use your own API; this hopefully results in a better interface.

All projects have time constraints and it's quite easy to get into the habit of taking shortcuts that increase coupling between modules leading to complex interdependencies. We must be cognizant of solving problems with spaghetti code.

Knowing we must test our code forces us to write modular code. If something is clunky to test, there might be a better interface we can implement. Taking the time to write tests forces mindfulness upon us; we take a deep breath before looking at the problem from the perspective of a user.

Once you write testable code by using patterns like dependency injection, you'll see how adding structure makes it easier to verify our code is doing what we expect it to

CHAPTER 2

LITERATURE REVIEW

2.1 Abstract Review:

Software Testing is the process used to help identify the correctness, completeness, security, and quality of developed computer software. Testing is a process of technical investigation, performed on behalf of stakeholders, that is intended to reveal quality-related information about the product with respect to the context in which it is intended to operate. This includes, but is not limited to, the process of executing a program or application with the intent of finding errors.

Quality is not an absolute; it is value to some person. With that in mind, testing can never completely establish the correctness of arbitrary computer software; testing furnishes a criticism or comparison that compares the state and behavior of the product against a specification. An important point is that software testing should be distinguished from the separate discipline of Software Quality Assurance (SQA), which encompasses all business process areas, not just testing.[1]

There are many approaches to software testing, but effective testing of complex products is essentially a process of investigation, not merely a matter of creating and following routine procedure. One definition of testing is "the process of questioning a product to evaluate it", where the "questions" are operations, the tester attempts to execute with the product and the product answers with its behavior in reaction to the probing of the tester [citation needed].

Although most of the intellectual processes of testing are nearly identical to that of review or inspection, the word testing is connoted to mean the dynamic analysis of the product—putting the product through its paces. Some of the common quality attributes include capability, reliability, efficiency, portability, maintainability, compatibility and usability. A good test is sometimes described as one which reveals an error; however, more recent thinking suggests that a good test is one which reveal information of interest to someone who matters within the project community. [2]

In general, software engineers distinguish software faults from software failures. In case of a failure, the software does not do what the user expects. A fault is a programming error that may or may not actually manifest as a failure. A fault can also be described as an error in the correctness of the semantic of a computer program A fault can also turn into a failure when the software is ported to a different hardware platform or a different compiler, or when the software gets extended. Software testing is the technical investigation of the product under test to provide stakeholders with quality related information. [3]

Software testing may be viewed as a sub-field of Software Quality Assurance but typically exists independently (and there may be no SQA areas in some companies). In SQA, software process specialists and auditors take a broader view on software and its development. They examine and change the software engineering process itself to reduce the number of faults that end up in the code or deliver faster.

Regardless of the methods used or level of formality involved the desired result of testing is a level of confidence in the software so that the organization is confident that the software has an acceptable defect rate. An arcade video game designed to simulate flying an airplane would presumably have a much higher tolerance for defects than software used to control an actual airliner. [4]

A problem with software testing is that the number of defects in a software product can be very large, and the number of configurations of the product larger still. Bugs that occur infrequently are difficult to find in testing. This has severe consequences for projects to write long-lived reliable software. Another practice is to start software testing at the same moment the project starts, and it is a continuous process until the project finishes. Another common practice is for test suites to be developed during technical support escalation procedures. Such tests are then maintained in regression testing suites to ensure that future updates to the software don't repeat any of the known mistakes. [5]

It is commonly believed that the earlier a defect is found the cheaper it is to fix it. In counterpoint, some emerging software disciplines such as programming and the agile software development movement, by the programmers. Of course, these tests fail initially as they are expected to. Then as code is written it passes incrementally larger portions of the test suites. The test suites are continuously updated as new failure conditions and corner cases are discovered, and they are integrated with any regression tests that are developed. [6]

As engineering practices evolve, so have the software testing practices that form a significant part of the larger set of development efforts. Software testing has been exposed to a lot of challenges in the last decade—if we were to see these challenges as opportunities, the scale, scope, tool set, and team level visibility of the testing discipline have increased manifold. Testing has had to keep pace with the newer technologies that the product team adopts and understand how they might impact testing to devise a holistic test strategy from manual and automated testing fronts. Testing teams are engaged in the life cycle much earlier than they used to be, testing for functionality and compatibility supported platforms; areas such as accessibility and usability are getting a lot more attention; globalization is an important piece of the testing pie; security extends beyond the basic web application testing level. All of these have opened a whole new window of opportunities for the testing team to align with the rest of the product team. [7]

A CRM application accessed through a browser under a fee-based software as a service (SaaS) arrangement is a web application. Online banking and daily crossword puzzles are also considered web applications that don't install software locally. An example of a word-processing cloud application that is installed on a workstation is Word's Microsoft Office 365. The application performs tasks locally on a machine without an internet connection. The comes into play when users save work to an Office 365 cloud server. [8]

Software's development is frequently limited by using development budgets and market, which give a exchange-off for gadget reliability, leading to extended defects and disastrous outcomes. consequently, software computer virus localization techniques are important to identifying and improving faults as fast as feasible. software computer virus localization generation may be divided into light-weight software program malicious program localization era and heavyweight software program bug localization technology in line with one-of-a-kind studies strategies. The light-weight software program malicious program localization technology analyzes the insurance facts or execution trajectory of this system execution, makes use of statistical or statistics mining methods to procedure facts, and finds a group of suspicious malicious program codes for trojan horse localization. It does not contain the dependency of this system, and the time overhead is noticeably small. The heavyweight software program worm localization era performs worm localization via studying the facts dependence and control dependence of this system, which calls for a massive time overhead. [9]

While it's miles feasible in a few cases to generate code at once from a model, most designers need to increase software program without delay in a fashionable programming language. To make certain that their code displays their version, developers often check their software at some point of development and refine their designs and code based totally at the consequences of these assessments. such a system is similar to software program prototyping however is performed mostly to confirm the viability of imposing a proposed design in a target environment. the use of testing in such instances establishes an casual dating among the code and a layout version. Few explicit software program development techniques, however, exist that guide this method of refinement and co-evolution of designs and their implementations. As a result, the behaviors expressed with the aid of models and code regularly diverge later in the improvement lifecycle due to the fact fidelity among them is hard to maintain as adjustments are made to either representation.[10]

Trying out is a crucial interest in software program engineering. within the handiest phrases, its quantities to staring at the execution of a software machine to validate whether it behaves as supposed and perceive capability malfunctions. trying out is broadly used in industry for excellent guarantee: certainly, through without delay scrutinizing the software in execution, it provides a practical feedback of its conduct and as such it stays the inescapable supplement to different evaluation techniques. but testing embraces a diffusion of activities, strategies and actors, and poses many complicated challenges. certainly, with the complexity, pervasiveness and criticality of software growing continuously, ensuring that it behaves according to the preferred tiers of first-class and dependability becomes more essential, and an increasing number of hard and high-priced. earlier studies envisioned that trying out can eat fifty percentage, or maybe greater, of the improvement prices, and a latest targeted survey inside the USA quantifies the high financial influences of an inadequate software program trying out infrastructure. [11]

2.2 Introduction About Project

TriMed – Digital Drawer system is an application that stores all the files of the Patients whoever got the Surgery from Client's End. This is a Web-based application works on the Salesforce. This helps in managing data related to patient and their surgery. The main purpose of this Salesforce application is to maintain Records about the Health of the Patient, in case if Patient don't have any of their Record. Client's Salesforce org must have that always available for future use.

For Non- Salesforce user's we have created a Desktop App for their usage where they don't even have to login to the Salesforce org. They simply have to open the App & can Create, Update or delete any of the records as per the choice. For the Patient's only read right will be available.

CHAPTER 3

History of Testing

The separation of debugging from testing was initially introduced by Glen ford J. Myers in his 1978 book the "Art of Software Testing". Although his attention was on breakage testing it illustrated the desire of the software engineering community to separate fundamental development activities, such as debugging, from that of verification. Drs. Dave Galperin and William Hetzel classified in 1988 the phases and goals in software testing as follows: until 1956 it was the debugging-oriented period, where testing was often associated to debugging: there was no clear difference between testing and debugging. From 1957-1978 there was the demonstration-oriented period where debugging and testing was distinguished now - in this period it was shown that software satisfies the requirements. The time between 1979-1982 is announced as the destruction-oriented period, where the goal was to find errors. 1983-1987 is classified as the evaluation-oriented period intention here is that during the software lifecycle a product evaluation is provided and measuring quality. From 1988 on it was seen as prevention-oriented period where tests were to demonstrate that software satisfies its specification, to detect faults and to prevent faults. Dr. Galperin chaired the IEEE 829-1988 (Test Documentation Standard) with Dr. Hetzel writing the book "The Complete Guide of Software Testing". Both works were pivotal into today's testing culture and remain a consistent source of reference. Dr. Galperin and Jerry E. Durant also went on to develop High Impact Inspection Technology that builds upon traditional Inspections but utilizes a test-driven additive

CHAPTER 4

Testing Concept

4.1 Testing Methodologies

- ✓ Black box Testing:
- ✓ White box Testing.
- ✓ Grey box Testing

4.2 Level of Testing

- ✓ Unit Testing.
- ✓ Module Testing.
- ✓ Integration Testing.
- ✓ System Testing.
- ✓ User Acceptance Testing.

4.3 Types of Testing

- ✓ Smoke Testing.
- ✓ Sanitary Testing.
- ✓ Regression Testing.
- ✓ Re-Testing.
- ✓ Static Testing.
- ✓ Dynamic Testing.
- ✓ Alpha-Testing.
- ✓ Beta-Testing.
- ✓ Monkey Testing.
- ✓ Compatibility Testing.
- ✓ Installation Testing.
- ✓ ADHOC Testing.
- ✓ Ext…

4.4 STLC

- ✓ Test Planning.
- ✓ Test Development.

- ✓ Test Execution.
- ✓ Bug-Tracing.
- ✓ Reporting.
- ✓ Result analysis

4.5 Testing:

- The process of executing a system with the intent of finding an error.
- Testing is defined as the process in which defects are identified, isolated, subjected for rectification and ensured that product is defect free to produce the quality product and hence customer satisfaction.
- Quality is defined as justification of the requirements
- Defect is nothing but deviation from the requirements
- Defect is nothing but bug.
- Testing --- The presence of bugs
- Testing can demonstrate the presence of bugs, but not their absence
- Debugging and Testing are not the same thing!
- Testing is a systematic attempt to break a program or the AUT
- Debugging is the art or method of uncovering why the script /program did not execute properly.

TEST Methodologic:

- ▪ Black box Testing is the testing process in which tester can perform testing on an application without having any internal structural knowledge of application.
- ▪ Usually Test Engineers are involved in the black box testing.
- ▪ White box Testing is the testing process in which tester can perform testing on an application with having internal structural knowledge.
- ▪ Usually, The Developers are involved in white box testing.
- ▪ Gray Box Testing: is the process in which the combination of black box and white box tonics are used.

4.6 Test Planning:

1. Test Plan is defined as a strategic document which describes the procedure how to perform various testing on the total application in the most efficient way.
This document involves the scope of testing,

1. Objective of testing,
2. Areas that need to be tested,
3. Areas that should not be tested,
4. Scheduling Resource Planning,

Areas to be automated, various testing Test Development:

- ▪ Areas to be automated, various testing Test Development:

- Test case Development (check list)
- Test Procedure preparation. (Description of the Test cases).
- Implementation of test cases. Observing the result.
- Expected value is nothing but expected behavior of application.
- Actual value: is nothing but actual behavior of application
- Bug Tracing: Collect all the failed cases, prepare documents.
- Reporting Prepare document (status of the application) tools used

Types of Testing:

- **Smoke Testing**: is the process of initial testing in which tester looks for the availability of all the functionality of the application to perform detailed testing on them. (Main check is for available forms)
- **Sanity Testing**: is a type of testing that is conducted on an application initially to check for the proper behavior of an application that is to check all the functionality are available before the detailed testing is conducted by on them.
- **Regression Testing**: is one of the best and important testing. Regression testing is the process in which the functionality, which is already tested before, is once again tested whenever some new change is added to check whether the existing functionality remains same.

Re-Testing is the process in which testing is performed on some functionality which is already tested before to make sure that the defects are reproducible and to rule out the environment's issues if at all any defects are there.

- **Static Testing**: is the testing, which is performed on an application when it is not been executed: GUI, Document Testing
- **Dynamic Testing**: is the testing which is performed on an application when it is being executed: Functional testing.
- **Alpha Testing**: it is a type of user acceptance testing, which is conducted on an application when it is just before released to the customer.

Types of Testing:

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Test Case Document Contains: Test Scope (or) Test objective

- Test Scope:
- Test coverage is provided for the screen "Academic status entry" form of a student module of university management system application
- Areas of the application to be tested
- Test Scenario:

4.7 Test Cases:

Template for Test Case

TC No.	Description	Expected Result	Actual Result	Result Status

Table 4.1

Guidelines for Test Cases:

GUI Test Cases:

TC No.	Description	Expected value	Actual value	Result Status
1	Check for all the features in the screen	The screen must contain all the features		
2	Check for the alignment of the objects as per the validations	The alignment should be in proper way		

Table 4.2

Total no. of features that need to be check

- Look & Feel
- Look for Default values if at all any (date & Time, if at all any require)
- Look for spell check
- Example for GUI Test Cases:

4.8 Positive Test Cases:

- The positive flow of the functionality must be considered
- Valid inputs must be used for testing
- Must have the positive perception to verify whether the requirements are justified.

Example for Positive Test cases:

TC No	Description	Expected value	Actual value	Result
1.	Check for the data Time Auto Display	The date and time of the system must be displayed	The date and time of the system must be displayed	Success
2.	Enter the vali lecture id into the lecture id field	It should accept	It should accept	Success

Table 4.3

4.9 Negative Test Cases:

- Must have negative perception.
- Invalid inputs must be used for test.

Example for Negative Test cases:

TC No	Description	Expected value	Actual value	Result
1	Try to modify the information date and time	Modification should be allowed	Modification is not allowing	Failure
2	Enter invalid data into the faculty form Click on Save	It should Not accept invalid Data save should not Allowed	It’s accepting invalid data & saving that	Failure

Table 4.4

Chapter 5

Coding

Classes

```
/*
This file is generated and isn't the actual source code for this
managed global class.
This read-only file shows the class's global constructors,
methods, variables, and properties.
To enable code to compile, all methods return null.
*/
global class CampaignBatch implements Database.AllowsCallouts,
Database.Batchable<SObject> {
    global Boolean runNextJobInChain;
    global CampaignBatch() {


    }
    global CampaignBatch(Boolean runNextJobInChain) {


    }
    global void execute(Database.BatchableContext context, List<SObject> records) {


    }
    global void finish(Database.BatchableContext context) {
    }

    global Database.QueryLocator start(Database.BatchableContext context) {
        return null;
    }
}

/*
This file is generated and isn't the actual source code for this
managed global class.
This read-only file shows the class's global constructors,
methods, variables, and properties.
To enable code to compile, all methods return null.
*/
global class API {
    global API() {

    }
global class ListCampaignDefaults {
    global ListCampaignDefaults() {

    }
}
global class MailChimpList {
    global MailChimpList() {
    }
}
global class TemplateInfoResponse {
    global TemplateInfoResponse() {


    }
}
global class TemplatesInfoResponse {
    global TemplatesInfoResponse() {


    }
}
}
```

Setup

```
<apex:page tabStyle="MC_Setup__tab" controller="MC4SF.SetupController"
action="{!initPage}">


<apex:stylesheet value="{!URLFOR($Resource.MC4SF__Assets,
'css/apexElemToSLDS.css')}"/>
<apex:stylesheet value="{!URLFOR($Resource.MC4SF__Assets,
'css/introjs.min.css')}"/>
<script src="{!URLFOR($Resource.Assets, 'js/jquery.min.js')}"></script>
<script src="{!URLFOR($Resource.Assets, 'js/intro.min.js')}"></script>


<style>
.introjs-disabled{
  color: #d0d0d0 !important;
}
```

```
.introjs-tooltip {
    max-width: 500px;
    width: 500px;
}
.introjs-tooltiptext {
    padding: 10px 0 10px ;
}

.introjs-helperNumberLayer {
  font-size: 10px;
  width: 24px;
  height: 24px;
  padding: 0;
}
.introjs-tooltipbuttons {
    text-align: center;
}
</style>
<body>

  <div class="slds-scope">

  <c:Header setupFunction="headerSetupObject" />

  <!-- Save Toast notification -->
  <div class="slds-notify_container slds-is-absolute" style="display:none;">
    <div class="slds-notify slds-notify_toast slds-theme_success" role="alert">
    <span class="slds-assistive-text">success</span>
    <span class="slds-icon_container slds-icon-utility-success slds-m-right_small slds-no-flex slds-align-top" title="Description of icon when needed">
     <svg class="slds-icon slds-icon_small" aria-hidden="true">
      <use xmlns:xlink="http://www.w3.org/1999/xlink" xlink:href="/apexpages/slds/latest/assets/icons/utility-sprite/svg/symbols.svg#success"></use>
     </svg>
    </span>
    <div class="slds-notify__content">
     <h2 class="slds-text-heading_small ">Mailchimp setting updated.</h2>
    </div>
    <button class="slds-button slds-button_icon slds-notify__close slds-button_icon-inverse" title="Close">
     <svg class="slds-button__icon slds-button__icon_large" aria-hidden="true">
      <use xmlns:xlink="http://www.w3.org/1999/xlink" xlink:href="/apexpages/slds/latest/assets/icons/utility-sprite/svg/symbols.svg#close"></use>
     </svg>
     <span class="slds-assistive-text">Close</span>
    </button>
   </div>
  </div>
  <!-- </ Save Toast notification -->

  <c:CustomApexPageMessages />

  <div class="slds-p-around_large">
```

```
<!-- Tips card -->
<article class="slds-card">
  <div class="slds-card__header slds-grid">
    <header class="slds-media slds-media_center slds-has-flexi-truncate">
      <div class="slds-media__Figure">
        <svg class="slds-icon slds-icon_x-small slds-icon-text-default" aria-hidden="true">
          <use xmlns:xlink="http://www.w3.org/1999/xlink" xlink:href="/apexpages/slds/latest/assets/icons/utility-sprite/svg/symbols.svg#notification"></use>
        </svg>
      </div>
      <div class="slds-media__body">
        <h2>
            <span class="slds-text-heading_small">Tips</span>
        </h2>
      </div>
    </header>
  </div>
  <div class="slds-card__body slds-card__body_inner">
    <ol style="line-height:1.2rem;">
      <li> 1. This app works best when field mappings are complete. We recommend mapping fields before syncing data. </li>
      <li> 2. The initial hourly sync will upload all Mailchimp subscribers into Salesforce and link them to existing Surgeries and Patients. </li>
      <li> 3. An initial upload usually takes a few minutes but can take several hours for large audiences. </li>
      <li> 4. If the Create Patients from MC option is chosen, the sync process will create a new Lead whenever a Subscriber's email address cannot be found on an existing Salesforce Contact or Lead. Please be sure your org's Lead conFiguration is ready for an initial upload! </li>
    </ol>
  </div>
</article>
<!-- </ Tips Card > -->


        <div class="slds-tabs--default slds-p-vertical_small">


                    <ul class="slds-tabs--default__nav" role="tablist">
                                <li class="slds-tabs__item slds-text-heading--label {!IF($CurrentPage.parameters.rq == 'true', ", ' slds-active')}" title="Item One" role="presentation" id="tabLists"><a href="#" name="tabContentLists" role="tab" tabindex="0" aria-selected="true">Audiences</a></li>
                                <li class="slds-tabs__item slds-text-heading--label {!IF($CurrentPage.parameters.rq == 'true', ' slds-active', ")}" title="Item Two" id="tabQueries"><a href="#" name="tabContentQueries" role="tab" tabindex="-1" aria-selected="false">Member Queries</a></li>
                                <li class="slds-tabs__item slds-text-heading--label" title="Item Three" id="tabFolder Management"><a href="#" name="tabContentFolder Management" role="tab" tabindex="-1" aria-selected="false">Folder Management</a></li>
        <li class="slds-tabs__item slds-text-heading--label" title="Item One"
role="presentation" id="tabSettings"><a href="#" name="tabContentSettings"
role="tab" tabindex="0" aria-selected="true">Settings</a></li>

                </ul>



      <!-- Audiences tab -->

                <div class="slds-tabs__content {!IF($CurrentPage.parameters.rq ==
'true', 'slds-hide', 'slds-show')}" role="tabpanel" id="tabContentLists">

        <section aria-labelledby="anchor-component" class="mode-read-only slds-
scrollable--x">



         <div style="float:right; margin-bottom:15px;">

          <button class="slds-button slds-button_neutral introStep4"
onclick="refreshListsAction();return false;">Refresh all audiences</button>

         </div>



         <apex:form id="listTable">

                        <apex:inputHidden id="mcListId" value="{!mcListId}"/>

                        <apex:actionFunction action="{!refreshLists}"
name="refreshListsAction" rerender="messages"/>

                        <apex:actionFunction action="{!updateLists}"
name="updateListsAction" rerender=""


oncomplete="notifyDone()"/>

                        <apex:actionFunction action="{!syncListNow}"
name="syncListNow" rerender="messages">

                                <apex:param name="mcListId" assignTo="{!mcListId}"
value=""/>

                        </apex:actionFunction>

                        <apex:actionFunction action="{!syncFullListNow}"
name="syncFullListNow" rerender="messages">

                                <apex:param name="mcListId" assignTo="{!mcListId}"
value=""/>

                        </apex:actionFunction>
                <table class="slds-table--bordered">
                    <thead>
                        <tr class="slds-text-heading--label">
                            <th scope="col"><span
class="slds-truncate">Action</span></th>
                            <th scope="col"><span
class="slds-truncate">Audience Name</span></th>
                            <th scope="col"><span
class="slds-truncate">Sync Setting</span></th>
                            <th scope="col"><span
class="slds-truncate">Create Patients from MC</span></th>
                            <th scope="col"><span
class="slds-truncate">Unmapped Fields</span></th>
                            <th scope="col"><span
class="slds-truncate">Last Sync</span></th>
                            <th scope="col"><span
class="slds-truncate">Sync Status</span></th>
                            <th scope="col"><span
class="slds-truncate"># Subscribers</span></th>
                            <th scope="col"><span
class="slds-truncate"># Unsubscribers</span></th>
                        </tr>
                    </thead>
                    <tbody>
                        <apex:repeat value="{!listWrappers}"
var="listWrapper">
                            <tr class="slds-hint-parent">
                                <td data-label="actions">
                                    <apex:outputPanel
layout="none" rendered="{!isMailChimpAdmin}">
                                        <a
href="{!$Page.Mappings}?id={!listWrapper.mcList.Id}&retURL={!$Page.Setup}"
class="introStep5">Map Fields</a>
        &nbsp;|&nbsp;
```

```
                    <a href="#"
onclick="syncList('{!listWrapper.mcList.Id}','{!listWrapper.promptForFullSync}');
return false;" class="introStep6">Sync Audience</a>

                                                                    </apex:outputPanel>

                                                              </td>

                                                              <td data-label="list
name"><a href="/{!listWrapper.mcList.Id}" class="slds-
truncate">{!JSENCODE(listWrapper.mcList.Name)}</a></td>

                                                              <td data-label="sync"
class="slds-truncate">

                   <apex:outputPanel layout="none"
rendered="{!NOT(isMailChimpAdmin)}">

                                                                          <span
class="slds-
truncate">{!JSENCODE(listWrapper.mcList.MC4SF__Sync_Setting__c)}</span>

                                                                    </apex:outputPanel>

                                                                    <apex:selectList
value="{!listWrapper.mcList.MC4SF__Sync_Setting__c}" size="1" styleClass="slds-
select slds-input--small" rendered="{!isMailChimpAdmin}"
onchange="updateListsAction();">


          <apex:selectOptions value="{!syncSettingOptions}"/>

                                                                    </apex:selectList>

                                                              </td>

                                                              <td data-label="create
Patients">

                   <div class="demo-only slds-size_1-of-2">

                    <div class="slds-form-element">

                     <label class="slds-checkbox_toggle slds-grid">

                      <apex:inputCheckbox id="syncSetting"
value="{!listWrapper.mcList.MC4SF__Create_New_Patients_From_MailChimp__c}"
disabled="{!NOT(isMailChimpAdmin)}" onchange="toggleSyncSetting(this); return
false;"/>

                      <span id="toggle-desc" class="slds-checkbox_faux_container" aria-
live="assertive">

                       <span class="slds-checkbox_faux"></span>
```

```
                  </span>
                 </label>
                </div>
               </div>
                                                            </td>
                                                            <td data-label="unmapped
fields"><span class="slds-
truncate">{!listWrapper.mcList.Unmapped_Fields__c}</span></td>
                                                            <td data-label="last
sync"><span class="slds-truncate">{!listWrapper.lastSyncDate}</span></td>
                                                            <td data-label="sync
status"><span class="slds-
truncate">{!listWrapper.mcList.Last_Sync_Status__c}</span></td>
                                                            <td data-
label="subscribers"><span class="slds-
truncate">{!listWrapper.mcList.Member_Count__c}</span></td>
                                                            <td data-
label="unsubscribers">{!listWrapper.mcList.Unsubscribe_Count__c}</td>
                                                    </tr>
                                            </apex:repeat>
                                    </tbody>
                            </table>
       </apex:form>
                    </section>
               </div>
    <!-- / Audiences tab -->


    <!-- Member queries tab -->
                    <div class="slds-tabs__content {!IF($CurrentPage.parameters.rq
== 'true', 'slds-show', 'slds-hide')}" role="tabpanel" id="tabContentQueries">
                            <section aria-labelledby="anchor-component">


       <div style="text-align:right; margin-bottom:15px;">
```

```
          <button class="slds-button slds-button_neutral introStep7"
onclick="newQueryAction();return false;">New Query</button>
        </div>


        <apex:form id="memberQueriesTable">
          <apex:inputHidden id="mcQueryId" value="{!mcQueryId}"/>
          <apex:actionFunction action="{!deleteQuery}" name="deleteQuery"
rerender="memberQueriesTable"/>
          <apex:actionFunction action="{!runQuery}" name="runQuery"
rerender="messages"/>
          <apex:actionFunction action="{!newQuery}" name="newQueryAction" />
                                                <table class="slds-table--bordered slds-max-
medium-table--stacked-horizontal slds-scrollable--x">
                                                          <thead>
                                                                    <tr class="slds-text-heading--
label">
                                                                              <th scope="col"><span
class="slds-truncate">Action</span></th>
                                                                              <th scope="col"><span
class="slds-truncate">Query Name</span></th>
                                                                              <th scope="col"><span
class="slds-truncate">Audience</span></th>
                                                                              <th scope="col"><span
class="slds-truncate">Last Run As</span></th>
                                                                              <th scope="col"><span
class="slds-truncate">Queried Objects</span></th>
                                                                              <th scope="col"><span
class="slds-truncate">Schedule</span></th>
                                                                              <th scope="col"><span
class="slds-truncate">Last Run</span></th>
                                                                              <th scope="col"><span
class="slds-truncate">Last Status</span></th>
                                                                              <th scope="col"><span
class="slds-truncate">Subscribers Added</span></th>
                                                                    </tr>
```

```
                                                            </thead>

                                                            <tbody>

                                                                       <apex:repeat
value="{!queryWrappers}" var="wrapper">

                                                                                  <tr class="slds-hint-
parent">

                                                                                             <td data-
label="action">


          <apex:outputPanel layout="none" rendered="{!isMailChimpAdmin ||
wrapper.mcQuery.MC4SF__Last_Run_As__c == $User.Id}">

                                                                                                                <a
href="{!$Page.MC4SF__QueryFilter}?id={!wrapper.mcQuery.Id}">Edit</a>

                                                                                                                |

                                                                                                                <a
href="#" onclick="executeDeleteQuery('{!wrapper.mcQuery.Id}'); return
false;">Delete</a>


          <apex:outputPanel layout="none" rendered="{!isMailChimpAdmin &&
wrapper.objectNames != null}">


          |


          <a
href="{!$Page.MC4SF__QueryName}?id={!wrapper.mcQuery.Id}">Schedule</a>


          </apex:outputPanel>

                                          <apex:outputPanel layout="none"
rendered="{!wrapper.objectNames != null}">

                                           |

                                            <a href="#"
onclick="executeRunQuery('{!wrapper.mcQuery.Id}'); return false;"
class="introStep8">Run Query</a>

                                          </apex:outputPanel>


          </apex:outputPanel>

                                                                                             </td>
```

```
                                                <td data-
label="query name"><a href="/{!wrapper.mcQuery.Id}" class="slds-
truncate">{!JSINHTMLENCODE(wrapper.mcQuery.Name)}</a></td>

                                                <td data-
label="list"><a href="/{!wrapper.mcQuery.MC_List__c}" class="slds-
truncate">{!JSINHTMLENCODE(wrapper.mcQuery.MC_List__r.Name)}</a></td>

                                                <td data-label="last
run as"><a href="/{!wrapper.mcQuery.Last_Run_As__c}" class="slds-
truncate">{!wrapper.mcQuery.Last_Run_As__r.Name}</a></td>

                                                <td data-
label="queried objects"><span class="slds-
truncate">{!wrapper.objectNames}</span></td>

                                                <td data-
label="schedule"><span class="slds-
truncate">{!wrapper.mcQuery.Run_Daily_At__c}</span></td>

                                                <td data-label="last
run"><span class="slds-truncate">{!wrapper.lastRun}</span></td>

                                                <td data-label="last
status">


    <apex:outputPanel rendered="{!wrapper.mcQuery.MC4SF__Status__c ==
'Error'}" styleClass="slds-truncate"><span
title="{!JSINHTMLENCODE(wrapper.mcQuery.Error_Message__c)}" style="color:
red;">{!JSINHTMLENCODE(wrapper.mcQuery.MC4SF__Status__c)}</span></apex:
outputPanel>

                                            <apex:outputPanel
rendered="{!wrapper.mcQuery.MC4SF__Status__c != 'Error'}" styleClass="slds-
truncate">{!JSINHTMLENCODE(wrapper.mcQuery.MC4SF__Status__c)}</apex:outp
utPanel>

                                                </td>

                                                <td data-
label="subscriers
added">{!wrapper.mcQuery.MC4SF__Subscribers_Added_last_run__c}</td>

                                            </tr>

                                        </apex:repeat>

                                    </tbody>

                                </table>

    </apex:form>
```

```
                                    </section>

                            </div>

    <!-- / Member queries tab -->


    <!-- Folder Management tab -->

                            <div class="slds-tabs__content slds-hide" role="tabpanel"
id="tabContentFolder Management">

                                    <section aria-labelledby="anchor-component"
class="slds-scrollable--x">


       <div style="text-align:right; margin-bottom:15px;">

         <button class="slds-button slds-button_neutral introStep9"
onclick="refreshFolder ManagementAction(); return false;">Refresh MC Folder
Management</button>

       </div>

       <apex:form id="Folder ManagementForm">

       <apex:actionFunction action="{!refreshFolder Management}"
name="refreshFolder ManagementAction" rerender="messages"/>

       <apex:actionFunction action="{!syncCampaignNow}"
name="syncCampaignNowAction" rerender="messages">

         <apex:param name="mcCampaignId" assignTo="{!mcCampaignId}"
value=""/>

       </apex:actionFunction>

                                            <table class="slds-table--bordered slds-max-
medium-table--stacked-horizontal">

                                                    <thead>

                                                            <tr class="slds-text-heading--
label">

           <apex:outputPanel rendered="{!isMailChimpAdmin || isMailChimpUser}">

                                                                      <th scope="col"><span
class="slds-truncate">Action</span></th>

           </apex:outputPanel>

                                                                    <th scope="col"><span
class="slds-truncate">Campaign Name</span></th>
```

```
                                                                        <th scope="col"><span
class="slds-truncate">Audience</span></th>
                                                                        <th scope="col"><span
class="slds-truncate">View In Mailchimp</span></th>
                                                                        <th
scope="col">Status</th>
                                                                        <th scope="col"><span
class="slds-truncate">Send Time</span></th>
                                                                        <th scope="col">Emails
Sent</th>
                                                                        <th scope="col"><span
class="slds-truncate">Clicks</span></th>
                                                                        <th scope="col"> <span
class="slds-truncate">Opens</span></th>
                                                                        <th scope="col"> <span
class="slds-truncate">Forwards</span></th>
                                                                        <th scope="col"><span
class="slds-truncate">Unsubscribes</span></th>
                                                               </tr>
                                                      </thead>
                                                      <tbody>
                                                               <apex:repeat
value="{!campaignWrappers}" var="campaignWrapper">
                                                                        <tr class="slds-hint-
parent">
             <apex:outputPanel rendered="{!isMailChimpAdmin || isMailChimpUser}">
               <td data-label="action"><a href="#" class="introStep10"
onclick="syncCampaignNowAction('{!campaignWrapper.mcCampaign.Id}')">Update
Stats</a></td>
             </apex:outputPanel>
                                                                                 <td data-
label="campaign name"><a href="/{!campaignWrapper.mcCampaign.Id}" class="slds-
truncate">{!JSINHTMLENCODE(campaignWrapper.mcCampaign.Name)}</a></td>
                                                                                 <td data-
label="list"><a href="/{!campaignWrapper.mcCampaign.MC_List__c}" class="slds-
truncate">{!JSINHTMLENCODE(campaignWrapper.mcCampaign.MC_List__r.Name)
}</a></td>
```

```
                <td data-label="view-in-mailchimp">

                  <apex:outputLink
value="{!campaignWrapper.mcCampaign.MC4SF__MailChimp_Link__c}"
target="_blank"
rendered="{!campaignWrapper.mcCampaign.MC4SF__MailChimp_Link__c !=
null}">{!JSINHTMLENCODE(campaignWrapper.mcCampaign.MC4SF__MailChimp
_Link__c)}</apex:outputLink>

                  <apex:outputLink
value="https://{!globalSettings.MC4SF__Data_Center__c}.admin.mailchimp.com/Fold
er Management/" target="_blank"
rendered="{!campaignWrapper.mcCampaign.MC4SF__MailChimp_Link__c ==
null}">https://{!globalSettings.MC4SF__Data_Center__c}.admin.mailchimp.com/Fold
er Management/</apex:outputLink>

                </td>

                <td data-
label="status">{!JSINHTMLENCODE(campaignWrapper.mcCampaign.MC4SF__Stat
us__c)}</td>

                                                    <td data-label="send
time"><span class="slds-truncate">{!campaignWrapper.sendTime}</span></td>

                                                    <td data-
label="emails sent"><span class="slds-truncate"><apex:outputText
value="{0,number,#,##0}"><apex:param
value="{!campaignWrapper.mcCampaign.MC4SF__Emails_Sent__c}"/></apex:output
Text></span></td>

                                                    <td data-
label="clicks"><apex:outputText value="{0,number,#,##0}"><apex:param
value="{!campaignWrapper.mcCampaign.MC4SF__Clicks__c}"/></apex:outputText>
</td>

                                                    <td data-
label="opens"><apex:outputText value="{0,number,#,##0}"><apex:param
value="{!campaignWrapper.mcCampaign.MC4SF__Opens__c}"/></apex:outputText>
</td>

                                                    <td data-
label="forwards"><apex:outputText value="{0,number,#,##0}"><apex:param
value="{!campaignWrapper.mcCampaign.MC4SF__Forwards__c}"/></apex:outputTex
t></td>

                                                    <td data-
label="unsubscribes"><apex:outputText value="{0,number,#,##0}"><apex:param
value="{!campaignWrapper.mcCampaign.MC4SF__Unsubscribes__c}"/></apex:outpu
tText></td>
```

```
                                                            </tr>
                                                      </apex:repeat>
                                                </tbody>
                                          </table>
      </apex:form>
                                    </section>
                              </div>
      <!-- Settings tab -->
      <div class="slds-tabs__content slds-hide" role="tabpanel" id="tabContentSettings">
                                    <section aria-labelledby="anchor-component" 
class="slds-scrollable--x slds-p-around_small">
        <apex:form id="settingsForm">
          <apex:actionFunction action="{!toggleHourlyJob}" 
name="toggleHourlyJobAction" oncomplete="notifyDone()" rerender="messages"/>
          <apex:actionFunction action="{!updateCreatePatients}" 
name="updateCreatePatientsAction" rerender="" oncomplete="notifyDone(); 
setCreatePatients({!createPatients});"/>
          <div class="slds-form slds-form_stacked">


            <h1 class="slds-text-heading_medium slds-p-vertical_xx-small introStep3" 
style="display:inline-block;">Data Sync</h1>
            <p class="slds-p-bottom_x-small">
              Enabling will schedule a series of batch tasks. The data sync updates your 
Mailchimp subscriber fields with the corresponding contact/lead field data each hour 
and updates the Salesforce Surgeries/Patients with the Mailchimp subscriber campaign 
activity each night.
            </p>


            <div class="slds-form-element slds-p-bottom_large">
              <label class="slds-checkbox_toggle slds-grid">
                <span class="slds-form-element__label slds-m-bottom_none" style="line-
height: 1.5rem;">Data Sync</span>
                <apex:inputCheckbox id="enableHourlySync" 
value="{!hourlyJobScheduled}" disabled="{!NOT(isMailChimpAdmin)}" />
```

```
            <span id="toggle-desc" class="slds-checkbox_faux_container" aria-live="assertive">
              <span class="slds-checkbox_faux"></span>
            </span>
          </label>
        </div>


        <h1 class="slds-text-heading_medium slds-p-vertical_xx-small introStep2" style="display:inline-block;">Allow Mailchimp to create Patients in Salesforce</h1>
        <p class="slds-p-bottom_x-small">
          Enabling this feature will allow Mailchimp to create new Patients in Salesforce for email addresses that don't match existing Patients or Surgeries.
        </p>


        <div class="slds-form-element">
          <label class="slds-checkbox_toggle slds-grid">
            <span class="slds-form-element__label slds-m-bottom_none" style="line-height: 1.5rem;">Mailchimp Lead Creation</span>
            <apex:inputCheckbox id="createPatients" value="{!createPatients}" disabled="{!NOT(isMailChimpAdmin)}" onchange="updateCreatePatientsAction(); return false;"/>
            <span id="toggle-desc" class="slds-checkbox_faux_container" aria-live="assertive">
              <span class="slds-checkbox_faux"></span>
            </span>
          </label>
        </div>


       </div>
     </apex:form>
                                </section>
                        </div>
   <!-- / Settings tab -->
```

```
        </div>
  package com.example.TriPed;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.webkit.WebSettings;
import android.webkit.WebView;
import android.webkit.WebViewClient;

public class extends AppCompatActivity {
    public WebView mywebview;

   protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_youtube_app);

        mywebview = (WebView) findViewById(R.id.webview);


mywebview.loadUrl("https://www.youtube.com/results?search_query=kiet+career+mae
stro");

        WebSettings =mywebview.getSettings();

        webSettings.setJavaScriptEnabled(true);

        mywebview.setWebViewClient(new WebViewClient());

    }
    @Override
    public void onBackPressed() {
        if(mywebview.canGoBack()){
            mywebview.goBack();
        }
        else {
            super.onBackPressed();
        }

    }
}                                                </footer>
                                    </div>
                        </section>
                        <div class="slds-backdrop slds-backdrop_open"></div>
            </div>
</div>
</body>

<script>
  var clickedMcListId = null;
  var fullListProcessed = [];
  var headerSetupObject = function(){
    var setupObj;
    setupObj = {
      title : "Mailchimp for Salesforce",
      pageHeading : "Setup",
      pageDescription : "ConFigure the Mailchimp for Salesforce application"
    }
    return setupObj;
  };
```

```
//Assign the current state of the create Patients when the page loads.
window.createPatients = ('{!createPatients}' === 'true');

function setCreatePatients(createPatients){
  window.createPatients = createPatients;
  if(!createPatients){
    $('[id$="syncSetting"]').each(function() {
      var el = $(this);
      if(el.prop("checked") == true){
        el.prop("checked", false);
      }
    });
    updateListsAction();
  }
}

function toggleSyncSetting(el) {

  var createPatients = window.createPatients;
  if(!createPatients){
    if($(el).prop("checked") == true){
      $(el).prop("checked", false);
      alert('Before enabling this setting, please turn on \'Allow Mailchimp to create
Patients in Salesforce\' in Setting tab.');
    }else{
      updateListsAction();
    }
  }else{
    updateListsAction();
  }
```

```
}

function executeDeleteQuery(id) {
          if (confirm('Are you sure you want to delete this query?')) {
                    $('input[id$="mcQueryId"]').val(id);
                    deleteQuery(id);
    return false;
          }
}

function executeRunQuery(id) {
          $('input[id$="mcQueryId"]').val(id);
          runQuery();
  return false;
}

// For toast messages
function notifyDone(){
  $('.slds-notify_container').show().delay(800).fadeOut('slow');
}

$('[id$="enableHourlySync"]').on('click', function(event){
  var unmappedFields = {!haveUnmappedFields};
  var notChecked = $('[id$="enableHourlySync"]').is(':checked');
  if(notChecked && unmappedFields){
    if (!(confirm('Some Mailchimp fields have not been mapped to Salesforce fields.
We recommend mapping fields BEFORE turning on the Data sync.'))) {
      event.stopPropagation();
      return false;
    }
  }
```

```
    toggleHourlyJobAction();
  });

  if(!({!hourlyJobScheduled})){
    setPageMessages('INFO','The Mailchimp for Salesforce has been set up and is ready to start synchronizing data. Click the "Data Sync" button on the Settings tab to start the magic.');
  }

  // Handle changing the active tab and its content
  $('.slds-tabs__item').on('click', function(event) {
            $('.slds-tabs__item').removeClass('slds-active');
            $(this).addClass('slds-active');
    $('.slds-tabs__content').removeClass('slds-show').addClass('slds-hide');
            $('#'+event.target.name).removeClass('slds-hide').addClass('slds-show');
  });


  $(function() {

      $('.freddie').css('width', '35px').addClass('introStep1');

      $('div.links').prepend('<an id="tourLink" href="#">Take a Tour of the Mailchimp Settings</a> | ');

      $('#tourLink').click(function() {
          showTour();
          return false;
      });

      $('span.helpLink').closest('a').attr('id', 'helpLink').attr('href', '#');
      $('#helpLink').click(function() {
          showHelp();
      });

      $('#goBackButton').click(function() {
          $.unblockUI();
      });

      $('#helpCloseButton').click(function() {
          $.unblockUI();
      });

      if ({!IF(dontShowTour, 'false', 'true')}) {
          showTour();
      }

  });



  function showTour() {
      var steps = [];

      steps.push(
          {
              element: $('.introStep1')[0],  //RK: Done
              intro: '<b>WELCOME TO THE SALESFORCE SETUP
  PAGE</b><br/><br/>Mailchimp for Salesforce features the ability to update subscriber
  information based on the contact/lead fields in Salesforce, create new Patients from
  Mailchimp subscribers, and view Mailchimp campaign activity and reports within your
  Salesforce account.<br/><br/>Click the \"Next\" button to take a tour of the Mailchimp
  for Salesforce application. If you have additional questions, check out the
```

```
documentation in the Mailchimp Knowledge Base.<br/><br/><a
href="http://eepurl.com/B_Bdb">About Mailchimp for Salesforce.</a><br/><a
href="http://eepurl.com/CqRNz">Install Mailchimp for Salesforce.</a><br/><a
href="http://eepurl.com/bdNhqv">Mailchimp for Salesforce Features.</a><br/>',

          position: 'right'
      }
    );

    steps.push(
      {
          element: $('.introStep2')[0],  //RK: Done
          intro: '<b>ALLOW MAILCHIMP TO CREATE SURGERY IN
SALESFORCE</b><br/><br/>Enabling this feature will allow Mailchimp to create
new Patients in Salesforce for email addresses that don\'t match existing Patients or
Surgeries.',
          position: 'right'
      }
    );

    steps.push(
      {
          element: $('.introStep3')[0],  //RK: Done
          intro: '<b>TURN ON/OFF DATA SYNC</b><br/><br/>Enabling the data
sync feature will schedule a series of batch tasks. The data sync updates your
Mailchimp subscriber fields with the corresponding contact/lead field data each hour,
and it updates the Salesforce Surgeries/Patients with the Mailchimp subscriber
campaign activity each night.',
          position: 'right'
      }
    );

    steps.push(
      {
        element: $('.introStep4')[0],  //RK: Done
        intro: '<b>REFRESH ALL AUDIENCES</b><br/><br/>The "Refresh All Audiences" button updates all of the audience field data. This button updates Salesforce with the Mailchimp audiences, audience fields, and groups.',
        position: 'left'
      }
    );

    if ($('.introStep5').length > 0) {
      steps.push(
        {
          element: $('.introStep5')[0],     //RK: Done
          intro: '<b>MAP FIELDS</b><br/><br/>The "Map Fields" link takes you to the field mapping page for each audience. You can edit the field mapping for existing audience fields or create new Mailchimp audience fields. The field mapping settings are used to match Mailchimp audience fields with their corresponding contact/lead fields.<br/><br/>The permissions for the Patients, Surgeries, and accounts should be set to "Public Read/Write" for the Mailchimp for Salesforce app to work properly. To edit these permissions, go to Setup > Administer > Security Controls > Sharing Settings.',
          position: 'right'
        }
      );
    }

    if ($('.introStep6').length > 0) {
      steps.push(
        {
          element: $('.introStep6')[0], //RK: Done
          intro: '<b>SYNC AUDIENCE</b><br/><br/>The "Sync Audience" link updates Salesforce with the Mailchimp audience settings, fields, tags, and groups. If the sync settings for the audience allow subscriber activity, then this link will update the Surgeries/Patients with the Mailchimp campaign activity.',
          position: 'right'
        }
      );
    }


    steps.push(
      {
        element: $('.introStep7')[0],   //RK: Done
        intro: '<b>NEW QUERY</b><br/><br/>The "New Query" button takes you to the query builder. Queries function to subscribe Surgeries/Patients to the Mailchimp audience, and to update existing Mailchimp audience subscribers based on the corresponding Surgeries/Patients in Salesforce. When updating existing subscribers, the Salesforce data will overwrite the Mailchimp audience field data. Using the filters on step two of the query builder, it’s possible to query all of the Surgeries/Patients or to query specific Surgeries/Patients based on their Salesforce field data.',
        position: 'left'
      }
    );


    if ($('.introStep8').length > 0) {
      steps.push(
        {
          element: $('.introStep8')[0], //RK: Done
          intro: '<b>RUN QUERY</b><br/><br/>The "Run Query" link functions to manually run an existing query. Queries function to subscribe Surgeries/Patients to the Mailchimp audience, and to update existing Mailchimp audience subscribers based on the corresponding Surgeries/Patients in Salesforce.',
          position: 'right'
        }
      );
    }


    steps.push(
      {
        element: $('.introStep9')[0],    //RK: Done
```

```
            intro: '<b>REFRESH MC FOLDER MANAGEMENT</b><br/><br/>The
"Refresh MC Folder Management" button allows the user to manually update the
campaign activity data for all Folder Management.',
            position: 'left'
        }
    );

    if ($('.introStep10').length > 0) {
        steps.push(
            {
                element: $('.introStep10')[0],     //RK: Done
                intro: '<b>UPDATE STATS</b><br/><br/>The "Update Stats" link allows
the user to manually update the campaign activity data for a particular campaign.',
                position: 'right'
            }
        );
    }


    introJs().onbeforechange(function(targetEl) {
      if($(targetEl).hasClass('introStep2'))
        $('#tabSettings a').click();
      if($(targetEl).hasClass('introStep3'))
        $('#tabSettings a').click();
      if($(targetEl).hasClass('introStep4'))
        $('#tabLists a').click();
      if($(targetEl).hasClass('introStep5'))
        $('#tabLists a').click();
      if($(targetEl).hasClass('introStep6'))
        $('#tabLists a').click();
      if($(targetEl).hasClass('introStep7'))
```

```
     $('#tabQueries a').click();
    if($(targetEl).hasClass('introStep8'))
     $('#tabQueries a').click();
    if($(targetEl).hasClass('introStep9'))
     $('#tabFolder Management a').click();
    if($(targetEl).hasClass('introStep10'))
     $('#tabFolder Management a').click();
   }).setOption('steps', steps).start();


   $('.introjs-tooltipbuttons').after('<div style="text-align: center; font-size: 11px; color: #666; margin-top: 10px;"><input id="dontShowCheckbox" type="checkbox" style="vertical-align: middle; margin-right: 5px;" {!IF(dontShowTour, 'checked="checked"', '')}/>Don\'t show this again</div>');


   jQuery('#dontShowCheckbox').click(function() {

Visualforce.remoting.Manager.invokeAction('{!$RemoteAction.SetupController.setDontShowTour}', jQuery(this).is(':checked'), function(result, event) {
     });
   });


 }


 function showHelp() {
   $.blockUI({
     message: $('#helpDialog'),
     css: {
       'border-radius': '8px',
       'padding': '10px'
     }
   });
 }
```

```
/**
 * Determines if the prompt for full sync should be displayed or not.
 * @param listId - Clicked List
 * @param promptForFullSync - true/false if this is a full sync
 */
function syncList(listId, promptForFullSync) {
	//Convert to an actual boolean
	const promptForFullSyncBoolean = (promptForFullSync === "true");
	//Check if the listId was already processed for full sync
	const fullSyncAlreadyProcessed = fullListProcessed.filter(recId => recId == 
listId).length > 0;
	//Assign to variable so that the variable can be used in other functions
	clickedMcListId = listId;

	if (promptForFullSyncBoolean && !fullSyncAlreadyProcessed) {
		//Show Modal
		let modalDiv = $('[id$="syncModal"]');
		modalDiv.removeClass('slds-hide');
	} else {
		//Process now, Call Action Function
		syncListNow(listId);
	}
}

/**
 * The user wants to sync the entire audience
 */
function syncAll() {
	//Close Modal
	closeSyncModal();
```

```
          turnOffPromptForList()
                    .then(res => {
                              //Call Action Function
                              syncFullListNow(clickedMcListId);
                              addToProcessed(clickedMcListId);
                              clickedMcListId = null;
                    })
                    .catch(err => {
                              alert(err);
                    });
}

/**
 * The user wants to skip the full sync.
 */
function skipFullSync() {
          //Close Modal
          closeSyncModal();
          turnOffPromptForList()
                    .then(res => {
                              //Call Action Function
                              syncListNow(clickedMcListId);
                              addToProcessed(clickedMcListId);
                              clickedMcListId = null;
                    })
                    .catch(err => {
                              alert(err);
                    });
}
```

```
/**
 * Updates the MC List Record to not prompt the user anymore
 * @returns {Promise<unknown>}
 */
function turnOffPromptForList() {
        return new Promise((resolve, reject) => {
                Visualforce.remoting.Manager.invokeAction(

'{!$RemoteAction.SetupController.setPromptFlagToFalse}',
                                clickedMcListId,
                                function (result, event) {
                                        if (event.status) {
                                                resolve(result);
                                        } else {
                                                reject(event.message);
                                        }
                                }
                );
        });
}

/**
 * Closes the modal
 */
function closeSyncModal() {
        //Hide Modal
        let modalDiv = $('[id$="syncModal"]');
        modalDiv.addClass('slds-hide');
}

/**
```

```
   * Adds id to array so that we don't prompt the user again
   * @param mcListId
   */
  function addToProcessed(mcListId) {
            fullListProcessed.push(mcListId);
  }

</script>

</apex:page>
```

Campaign

```
<apex:page standardController="MC4SF__MC_Campaign__c" readOnly="true" extensions="MC4SF.CampaignOverrideController">
        <div class="slds-scope">
                <!-- Make VisualForce compiler happy. -->
                <apex:outputPanel style="display: none;">

        {!JSINHTMLENCODE(MC4SF__MC_Campaign__c.MC4SF__Report_Secure_URL__c)}
{!JSINHTMLENCODE(MC4SF__MC_Campaign__c.MC4SF__Report_URL__c)}
{!JSINHTMLENCODE(MC4SF__MC_Campaign__c.MC4SF__Report_Password__c)}
                </apex:outputPanel>
                <c:Header setupFunction="headerSetupObject"/>
                <div id="spinner" style="height: 6rem; display: none;">
                        <div class="slds-spinner_container" style="position: fixed;z-index: 10000;">
                                <div role="status" class="slds-spinner slds-spinner_medium">
                                        <span class="slds-assistive-text">Loading</span>
                                        <div class="slds-spinner__dot-a"></div>
                                        <div class="slds-spinner__dot-b"></div>
                                </div>
                        </div>
                    </div>
                    <apex:outputPanel rendered="{!MC4SF__MC_Campaign__c.Id ==
null}">
                        <div class="slds-notify slds-notify_alert slds-theme_alert-texture
slds-theme_error" role="alert">
                            <span class="slds-assistive-text">error</span>
                            <span class="slds-icon_container slds-icon-utility-ban
slds-m-right_x-small" title="Description of icon when needed">
                                <svg class="slds-icon slds-icon_x-small" aria-
hidden="true">
                                    <use
xmlns:xlink="http://www.w3.org/1999/xlink"
xlink:href="/apexpages/slds/latest/assets/icons/utility-
sprite/svg/symbols.svg#ban"></use>
                                </svg>
                            </span>
                            <h2>MC Folder Management cannot be created from
Salesforce.com.</h2>
                        </div>
                    </apex:outputPanel>
                </div>
                <apex:outputPanel rendered="{!MC4SF__MC_Campaign__c.Id != null}">
                    <apex:form >
                        <div class="slds-grid slds-wrap">
                            <div class="slds-container_fluid">
                                <div class="slds-section slds-is-open">
                                    <h3 class="slds-section__title slds-
theme_shade">
                                        <span class="slds-truncate"
title="MC Campaign Detail" style="margin-left: 25px;">MC Campaign Detail</span>
                                    </h3>
                                    <div aria-hidden="false" class="slds-
section__content">
```

```
                            <div class="slds-grid slds-wrap"
style="margin-left: 15px;">
                                <apex:repeat
value="{!$ObjectType.MC4SF__MC_Campaign__c.FieldSets.MC4SF__CampaignDet
ail}" var="field">
                                    <div class="slds-p-
horizontal--small slds-size--1-of-2">
                                        <div
class="slds-form-element slds-hint-parent slds-has-divider--bottom">
                                            <span
class="slds-form-element__label">{!field.Label}</span>
                                            <div
class="slds-form-element__control">
    <span class="slds-form-element__static">
        <apex:outputField value="{!MC4SF__MC_Campaign__c[field]}"/>
    </span>
    </div>
                                        </div>
                                    </div>
                                </apex:repeat>
                            </div>
                        </div>
                    </div>
                </div>
                <div class="slds-container_fluid">
                    <div class="slds-section slds-is-open">
                        <h3 class="slds-section__title slds-
theme_shade">
                            <span class="slds-truncate"
title="Campaign Stats" style="margin-left: 25px;">Campaign Stats</span>
                        </h3>
                        <div aria-hidden="false" class="slds-
section__content">
                            <div class="slds-grid slds-wrap"
style="margin-left: 15px;">
                                <apex:repeat
value="{!$ObjectType.MC4SF__MC_Campaign__c.FieldSets.MC4SF__Folder
Managementtats}" var="field">
                                    <div class="slds-p-
horizontal--small slds-size--1-of-2">
                                        <div
class="slds-form-element slds-hint-parent slds-has-divider--bottom">
                                            <span
class="slds-form-element__label">{!field.Label}</span>
                                            <div
class="slds-form-element__control">

    <span class="slds-form-element__static">

        <apex:outputField value="{!MC4SF__MC_Campaign__c[field]}"/>

    </span>

    </div>
                                        </div>
                                    </div>
                                </apex:repeat>
                            </div>
                        </div>
                    </div>
                </div>
                <div class="slds-container_fluid">
                    <div class="slds-section slds-is-open">
                        <h3 class="slds-section__title slds-
theme_shade">
```

```
                                                  <span class="slds-truncate"
title="Aggregate Hourly Campaign Stats" style="margin-left: 25px;">Aggregate Hourly
Campaign Stats</span>

                                             </h3>

                                             <div aria-hidden="false" class="slds-
section__content">

                                                  <div class="slds-grid slds-wrap"
style="margin-left: 15px;">

                                                       <apex:repeat
value="{!$ObjectType.MC4SF__MC_Campaign__c.FieldSets.MC4SF__AggregateHo
urlyFolder Managementtats}" var="field">

                                                            <div class="slds-p-
horizontal--small slds-size--1-of-2">

                                                                 <div
class="slds-form-element slds-hint-parent slds-has-divider--bottom">

                                                                      <span
class="slds-form-element__label">{!field.Label}</span>

                                                                      <div
class="slds-form-element__control">

     <span class="slds-form-element__static">

          <apex:outputField value="{!MC4SF__MC_Campaign__c[field]}"/>

     </span>

     </div>
                                                                 </div>
                                                            </div>
                                                       </apex:repeat>
                                                  </div>
                                             </div>
                                        </div>
                                   </div>
                                   <div class="slds-container_fluid">
```

```
                    <div class="slds-section slds-is-open">
                        <h3 class="slds-section__title slds-
theme_shade">
                            <span class="slds-truncate"
title="Unsubscribes/Bounces" style="margin-left:
25px;">Unsubscribes/Bounces</span>
                        </h3>
        <div class="slds-form-element__control">

    <span class="slds-form-element__static">

        <apex:outputField value="{!MC4SF__MC_Campaign__c[field]}"/>

    </span>

    </div>
                                    </div>
                                    </div>
                                </apex:repeat>
                            </div>
                        </div>
                    </div>
            </div>
                <div class="slds-container_fluid">
                    <div class="slds-section slds-is-open">
                        <h3 class="slds-section__title slds-
theme_shade">
                            <span class="slds-truncate"
title="Related Records" style="margin-left: 25px;">Related Records</span>
                        </h3>
                        <div aria-hidden="false" class="slds-
section__content">
<div class="slds-grid slds-wrap" style="margin-left: 15px;">
```

```
<apex:repeat
value="{!$ObjectType.MC4SF__MC_Campaign__c.FieldSets.MC4SF__RelatedRecor
ds}" var="field">
<div class="slds-p-horizontal--small slds-size--1-of-2">
<div class="slds-form-element slds-hint-parent slds-has-divider--bottom">
                                            <span
class="slds-form-element__label">{!field.Label}</span>
<div class="slds-form-element__control">

    <span class="slds-form-element__static">

        <apex:outputField value="{!MC4SF__MC_Campaign__c[field]}"/>

    </span>

    </div>
                                        </div>
                                    </div>
                                </apex:repeat>
                            </div>
                        </div>
                    </div>
                </div>
                <div class="slds-container_fluid">
                    <div class="slds-section slds-is-open">
                        <h3 class="slds-section__title slds-
theme_shade">
                            <span class="slds-truncate"
title="Tracking" style="margin-left: 25px;">Tracking</span>
                        </h3>
                        <div aria-hidden="false" class="slds-
section__content">
                            <div class="slds-grid slds-wrap"
style="margin-left: 15px;">
```

```
                                <apex:repeat
value="{!$ObjectType.MC4SF__MC_Campaign__c.FieldSets.MC4SF__Tracking}"
var="field">
                                    <div class="slds-p-
horizontal--small slds-size--1-of-2">
                                        <div
class="slds-form-element slds-hint-parent slds-has-divider--bottom">
                                            <span
class="slds-form-element__label">{!field.Label}</span>
                                            <div
class="slds-form-element__control">
    <span class="slds-form-element__static">
        <apex:outputField value="{!MC4SF__MC_Campaign__c[field]}"/>
    </span>
    </div>
                                        </div>
                                    </div>
                                </apex:repeat>
                            </div>
                        </div>
                    </div>
                </div>
                <div class="slds-container_fluid">
                    <div class="slds-section slds-is-open">
                        <h3 class="slds-section__title slds-
theme_shade">
                            <span class="slds-truncate"
title="Options" style="margin-left: 25px;">Options</span>
                        </h3>
                        <div aria-hidden="false" class="slds-
section__content">
```

```
                            <div class="slds-grid slds-wrap"
style="margin-left: 15px;">
                                <apex:repeat
value="{!$ObjectType.MC4SF__MC_Campaign__c.FieldSets.MC4SF__Options}"
var="field">
                                    <div class="slds-p-
horizontal--small slds-size--1-of-2">
                                        <div
class="slds-form-element slds-hint-parent slds-has-divider--bottom">
                                            <span
class="slds-form-element__label">{!field.Label}</span>
                                            <div
class="slds-form-element__control">
    <span class="slds-form-element__static">
        <apex:outputField value="{!MC4SF__MC_Campaign__c[field]}"/>
    </span>
    </div>
                                        </div>
                                    </div>
                                </apex:repeat>
                            </div>
                        </div>
                    </div>
                </div>
                <div class="slds-container_fluid">
                    <div class="slds-section slds-is-open">
                        <h3 class="slds-section__title slds-
theme_shade">
                            <span class="slds-truncate"
title="Campaign Report" style="margin-left: 25px;">Campaign Report</span>
                        </h3>
```

```
                                                <div aria-hidden="false" class="slds-
section__content">
                                                        <div class="slds-grid slds-wrap"
style="margin-left: 15px;">
                                                                <div class="slds-p-
horizontal--small slds-size--1-of-1">
                                                                        <apex:iframe
src="CampaignReport?id={!MC4SF__MC_Campaign__c.Id}"/>
                                                                </div>
                                                        </div>
                                                        <div class="slds-grid slds-wrap"
style="margin-left: 15px;">
                                                                <div class="slds-p-
horizontal--small slds-size--1-of-1">
                                                                        <div class="slds-
form-element slds-hint-parent slds-has-divider--bottom">
                                                                                <span
class="slds-form-element__label">Campaign Share Report</span>
                                                                                <div
class="slds-form-element__control">
                                                                                        <span
class="slds-form-element__static">

        <apex:outputLink
value="{!SUBSTITUTE(IF(NOT(ISNULL(MC4SF__MC_Campaign__c.MC4SF__Re
port_Secure_URL__c)),
JSENCODE(MC4SF__MC_Campaign__c.MC4SF__Report_Secure_URL__c),
JSENCODE(MC4SF__MC_Campaign__c.MC4SF__Report_URL__c)), 'http://',
'https://')}&p={!URLENCODE(MC4SF__MC_Campaign__c.MC4SF__Report_Passwo
rd__c)}"
id="theLink">{!SUBSTITUTE(IF(NOT(ISNULL(MC_Campaign__c.Report_Secure_
URL__c)), JSENCODE(MC_Campaign__c.Report_Secure_URL__c),
JSENCODE(MC_Campaign__c.Report_URL__c)), 'http://',
'https://')}&amp;p={!URLENCODE(MC_Campaign__c.Report_Password__c)}</apex:
outputLink>

        </span>
                                                                                </div>
```

```
                                    </div>
                                </div>
                            </div>
                        </div>
                    </div>
                </div>
                <div class="slds-container_fluid">
                    <div class="slds-section slds-is-open">
                        <h3 class="slds-section__title slds-
theme_shade">
                            <span class="slds-truncate"
title="System Information" style="margin-left: 25px;">System Information</span>
                        </h3>
                        <div aria-hidden="false" class="slds-
section__content">
                            <div class="slds-grid slds-wrap"
style="margin-left: 15px;">
                                <div class="slds-p-
horizontal--small slds-size--1-of-2">
                                    <div class="slds-
form-element slds-hint-parent slds-has-divider--bottom">
                                        <span
class="slds-form-element__label">Created By</span>
                                        <div
class="slds-form-element__control">
                                            <span
class="slds-form-element__static">
                   <apex:outputlink
value="/{!MC4SF__MC_Campaign__c.CreatedById}">
                    {!MC4SF__MC_Campaign__c.CreatedBy.Name}
                    </apex:outputlink>
                   &nbsp;

    <apex:outputField value="{!MC4SF__MC_Campaign__c.CreatedDate}"/>
```

```
          </span>
                                                                                         </div>
                                                                                 </div>
                                                                         </div>
                                                                         <div class="slds-p-
horizontal--small slds-size--1-of-2">
                                                                                 <div class="slds-
form-element slds-hint-parent slds-has-divider--bottom">
                                                                                         <span
class="slds-form-element__label">Last Modified By</span>
                                                                                         <div
class="slds-form-element__control">
                                                                                                 <span
class="slds-form-element__static">
                                     <apex:outputlink
value="/{!MC4SF__MC_Campaign__c.LastModifiedById}">

          {!MC4SF__MC_Campaign__c.LastModifiedBy.Name}
                                        </apex:outputlink>
                                     &nbsp;

          <apex:outputField
value="{!MC4SF__MC_Campaign__c.LastModifiedDate}"/>

          </span>
                                                                                         </div>
                                                                                 </div>
                                                                         </div>
                                                                 </div>
                                                         </div>
                                                 </div>
                                         </div>
                                 </div>
```

```
            <article class="slds-card">
                <div class="slds-card__header slds-grid">
                    <header class="slds-media slds-media_center slds-
has-flexi-truncate">
                        <div class="slds-media__body">
                            <h2>
                                <span class="slds-text-
heading_small">MC Subscriber Activity</span>
                            </h2>
                            <apex:outputPanel
rendered="{!ISNULL(activities)}">
                                <p class="slds-text-
body_small slds-line-height_reset">
                                    No records to
display
                                </p>
                            </apex:outputPanel>
                        </div>
                    </header>
                </div>
                <apex:outputPanel id="activityList"
rendered="{!NOT(ISNULL(activities))}">
                    <div class="slds-card__body">
                        <table class="slds-table slds-
table_bordered slds-table_cell-buffer">
                            <thead>
                                <tr class="slds-text-
title_caps">
                                    <th scope="col">
                                        <div
class="slds-truncate" title="Activity Name">Activity Name</div>
                                    </th>
                                    <th scope="col">
```

```
                                        <div
class="slds-truncate" title="Timestamp">Timestamp</div>
                                    </th>
                                    <th scope="col">
                                        <div
class="slds-truncate" title="MC Subscriber">MC Subscriber</div>
                                    </th>
                                    <th scope="col">
                                        <div
class="slds-truncate" title="Action">Action</div>
                                    </th>
                                    <th scope="col">
                                        <div
class="slds-truncate" title="Type">Type</div>
                                    </th>
                                    <th scope="col">
                                        <div
class="slds-truncate" title="Url">Url</div>
                                    </th>
                                </tr>
                            </thead>
                            <tbody>
                                <apex:repeat
value="{!activities}" var="activity">
                                    <tr class="slds-hint-
parent">
                                        <th
scope="row">

    <apex:outputlink
value="/{!activity.Id}">{!JSINHTMLENCODE(activity.Name)}</apex:outputlink>
                                        </th>
                                        <th
scope="row">
```

```
    <apex:outputField value="{!activity.MC4SF__Timestamp__c}"/>
                                        </th>
                                        <th
scope="row">

    {!JSINHTMLENCODE(activity.MC_Subscriber__r.Name)}
                                        </th>
                                        <th
scope="row">

    {!JSINHTMLENCODE(activity.MC4SF__Action__c)}
                                        </th>
                                        <th
scope="row">

    {!JSINHTMLENCODE(activity.MC4SF__Type__c)}
                                        </th>
                                        <th
scope="row">

    {!JSINHTMLENCODE(activity.MC4SF__URL__c)}
                                        </th>
                                    </tr>
                                </apex:repeat>
                            </tbody>
                        </table>
                    </div>
                    <footer class="slds-card__footer">
                        <div>
                                <apex:commandLink
value="Show less «" action="{!showLessActivity}" reRender="activityList"
rendered="{!moreActivity==true && !ISNULL(activities)}"/>
                            </div>
                        </div>
                    </footer>
                </apex:outputPanel>
            </article>
            <article class="slds-card">
                <div class="slds-card__header slds-grid">
                    <header class="slds-media slds-media_center slds-
has-flexi-truncate">
                        <div class="slds-media__body">
                            <h2>
                                <span class="slds-text-
heading_small">MC Campaign Hourly Stats</span>
                            </h2>
                            <apex:outputPanel
rendered="{!ISNULL(stats)}">
                                <p class="slds-text-
body_small slds-line-height_reset">
                                    No records to
display
                                </p>
                            </apex:outputPanel>
                        </div>
                    </header>
                </div>
                <apex:outputPanel id="statList"
rendered="{!NOT(ISNULL(stats))}">
                    <div class="slds-card__body">
                        <table class="slds-table slds-
table_bordered slds-table_cell-buffer">
                            <thead>
                                <tr class="slds-text-
title_caps">
                                    <th scope="col">
```

```
                                                                    <div
class="slds-truncate" title="MC Subscriber Activity">MC Subscriber Activity</div>
                                                              </th>
                                                              <th scope="col">
                                                                    <div
class="slds-truncate" title="Statistics Hour">Statistics Hour</div>
                                                              </th>
                                                              <th scope="col">
                                                                    <div
class="slds-truncate" title="Emails Sent">Emails Sent</div>
                                                              </th>
                                                              <th scope="col">
                                                                    <div
class="slds-truncate" title="Unique Opens">Unique Opens</div>
                                                              </th>
                                                              <th scope="col">
                                                                    <div
class="slds-truncate" title="Recipents Click">Recipents Click</div>
                                                              </th>
                                                        </tr>
                                                  </thead>
                                                  <tbody>
                                                        <apex:repeat
value="{!stats}" var="stat">
                                                              <tr class="slds-hint-
parent">
                                                                    <th
scope="row">

      <apex:outputlink value="/{!stat.Id}">{!stat.Name}</apex:outputlink>
                                                                    </th>
                                                                    <th
scope="row">
```

```
            <apex:outputField value="{!stat.MC4SF__Statistics_Hour__c}"/>
                                                                        </th>
                                                                        <th>
                                                </table>
                                            </div>
                                            <footer class="slds-card__footer">
                                                <div class="slds-clearfix">
                                                    <div class="slds-float_left">
                                                        <apex:commandLink
value="Show more »" action="{!showMoreStat}" reRender="statList"
rendered="{!moreStat==false && !ISNULL(stats)}"/>
                                                        <apex:commandLink
value="Show less «" action="{!showLessStat}" reRender="statList"
rendered="{!moreStat==true && !ISNULL(stats)}"/>
                                                    </div>
                                                </div>
                                            </footer>
                                    </apex:outputPanel>
                            </article>
                    </apex:form>


            </apex:outputPanel>
            <script src="{!URLFOR($Resource.Assets, 'js/jquery.min.js')}"></script>
            <script>
                    // Replace Campaign Share Report URL with URL that contains
password. The password needs to be URL encoded which can't be done in a formula
field.
                    var shareUrl =
'{!SUBSTITUTE(IF(NOT(ISNULL(MC_Campaign__c.Report_Secure_URL__c)),
JSINHTMLENCODE(MC_Campaign__c.Report_Secure_URL__c),
JSINHTMLENCODE(MC_Campaign__c.Report_URL__c)), ' http : //',
'https://')}&p={!URLENCODE(MC_Campaign__c.Report_Password__c)}';
```

```
        $('td.labelCol:contains("Campaign Share
Report")').siblings('.data2Col').find('a').text(shareUrl).attr('href', shareUrl);


        (function (myContext) {
            myContext.ForceUI = myContext.ForceUI || {};


            myContext.ForceUI.isSalesforce1 = function () {
                return ((typeof sforce != 'undefined') && sforce &&
(!!sforce.one));
            }
        })(this);


        var spinner = document.getElementById("spinner");


        var headerSetupObject = function () {
            var setupObj;
            setupObj = {
                title: "MC Campaign",
                pageHeading:
"{!JSINHTMLENCODE(MC_Campaign__c.Name)}",
                buttons:
("{!JSINHTMLENCODE(MC_Campaign__c.Name)}"
                    ? this.createButtons()
                    : null)
            }
            return setupObj;
        }


        function createButtons() {
            buttonsArr = [
                {
                    title: "Refresh Campaign Stats",
                    onclick: "refreshStats"
                }
            ];
            return buttonsArr;
        }

        function refreshStats() {
            spinner.style.display = '';

    Visualforce.remoting.Manager.invokeAction('{!$RemoteAction.CampaignOverr
ideController.loadCampaign}',
'{!JSENCODE(MC_Campaign__c.MailChimp_ID__c)}', function (result, event) {
                spinner.style.display = 'none';
                if (event.status) {
                    var response = result;
                    if (response != 'Success') {
                        alert(response);
                    } else {
                        ForceUI.isSalesforce1()?
sforce.one.navigateToSObject('{!MC_Campaign__c.Id}'): (top.location.href =
'/{!MC_Campaign__c.Id}');
                    }
                } else {
                    alert('Error Refreshing Campaign.');
                }
            });
        }
    </script>
</apex:page>
```

CHAPTER 6

System Testing & Implementation

Software Testing is evaluation of the software against requirements gathered from users and system specifications. Testing is conducted at the phase level in software development life cycle or at module level in program code. Software testing comprises of Validation and Verification.

6.1 Software Validation

Validation is process of examining whether the software satisfies the user requirements. It is carried out at the end of the SDLC. If the software matches requirements for which it was made, it is validated.

- Validation ensures the product under development is as per the user requirements.
- Validation answers the question – "Are we developing the product which attempts all that user needs from this software?"
- Validation emphasizes on user requirements.

6.2 Software Verification

Verification is the process of confirming if the software is meeting the business requirements and is developed adhering to the proper specifications and methodologies.

- Verification ensures the product being developed is according to design specifications.
- Verification answers the question– "Are we developing this product by firmly following all design specifications?"

- Verifications concentrate on the design and system specifications.
- Target of the test are -
- **Errors** - These are actual coding mistakes made by developers. In addition, there is a difference in output of software and desired output, is considered as an error.
- **Fault** - When error exists fault occurs. A fault, also known as a bug, is a result of an error which can cause system to fail.
- **Failure** - failure is said to be the inability of the system to perform the desired task. Failure occurs when fault exists in the system.

6.3 Manual vs Automated Testing

Testing can either be done manually or using an automated testing tool:

- **Manual** - This testing is performed without taking help of automated testing tools. The software tester prepares test cases for different sections and levels of the code, executes the tests, and reports the result to the manager.

Manual testing is time and resource consuming. The tester needs to confirm whether right test cases are used. Major portion of testing involves manual testing.

- **Automated** - This testing is a testing procedure done with aid of automated testing tools. The limitations with manual testing can be overcome using automated test tools.

A test needs to check if a webpage can be opened in Internet Explorer. This can be easily done with manual testing. But to check if the webserver can take the load of 1 million users, it is quite impossible to test manually.

There are software and hardware tools which helps tester in conducting load testing, stress testing, regression testing.

6.4 Testing Approaches

Tests can be conducted based on two approaches –

- ✓ Functionality testing
- ✓ Implementation testing

When functionality is being tested without taking the actual implementation in concern it is known as black-box testing. The other side is known as white box testing where not only functionality is tested but the way it is implemented is also analyzed.

Exhaustive tests are the best-desired method for a perfect testing. Every single possible value in the range of the input and output values is tested. It is not possible to test each value in real world scenario if the range of values is large.

6.5 Black-box testing

It is carried out to test functionality of the program. It is also called 'Behavioral' testing. The tester in this case, has a set of input values and respective desired results. On providing input, if the output matches with the desired results, the program is tested 'ok', and problematic otherwise.

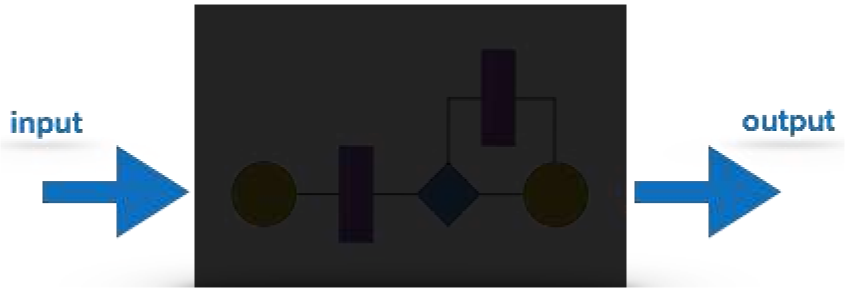


Fig 6.1 Black-box testing

In this testing method, the design and structure of the code are not known to the tester, and testing engineers and end users conduct this test on the software.

Black-box testing techniques:

- ✓ **Equivalence class** - The input is divided into similar classes. If one element of a class passes the test, it is assumed that all the class is passed.
- ✓ **Boundary values** - The input is divided into higher and lower end values. If these values pass the test, it is assumed that all values in between may pass too.
- ✓ **Cause-effect graphing** - In both previous methods, only one input value at a time is tested. Cause (input) – Effect (output) is a testing technique where combinations of input values are tested in a systematic way.

- ✓ **Pair-wise Testing** - The behavior of software depends on multiple parameters. In pairwise testing, the multiple parameters are tested pairwise for their different values.
- ✓ **State-based testing** - The system changes state on provision of input. These systems are tested based on their states and input.

6.6 White-box testing

It is conducted to test program and its implementation, to improve code efficiency or structure. It is also known as 'Structural' testing.

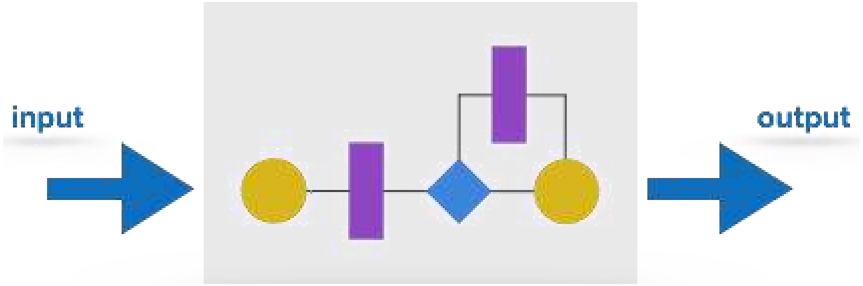


Fig 6.2 White-box testing

In this testing method, the design and structure of the code are known to the tester. Programmers of the code conduct this test on the code.

The below are some White box testing techniques:

- ✓ **Control-flow testing** - The purpose of the control-flow testing to set up test cases which covers all statements and branch conditions. The branch conditions are tested for both being true and false, so that all statements can be covered.
- ✓ **Data-flow testing** - This testing technique emphasis to cover all the data variables included in the program. It tests where the variables were declared and defined and where they were used or changed.

6.7 Testing Levels

Testing itself may be defined at various levels of SDLC. The testing process runs parallel to software development. Before jumping on the next stage, a stage is tested, validated, and verified.

Testing separately is done just to make sure that there are no hidden bugs or issues left in the software. Software is tested on various levels -

6.8 Unit Testing

While coding, the programmer performs some tests on that unit of program to know if it is error free. Testing is performed under white box testing approach. Unit testing helps developers decide that individual units of the program are working as per requirement and are error free.

6.9 Integration Testing

Even if the units of software are working fine individually, there is a need to find out if the units if integrated together would also work without errors.

6.10 System Testing

The software is compiled as product and then it is tested. This can be accomplished using one or more of the following tests:

✓ **Functionality testing** - Tests all functionalities of the software against the requirement.

✓ **Performance testing** - This test proves how efficient the software is. It tests the effectiveness and average time taken by the software to do desired task. Performance testing is done by means of load testing and stress testing where the software is put under high user and data load under various environment conditions.

✓ **Security & Portability** - These tests are done when the software is meant to work on various platforms and accessed by number of persons.

✓ **Acceptance Testing -** When the software is ready to hand over to the customer it must go through last phase of testing where it is tested for user-interaction and response. This is important because even if the software matches all user requirements and if user does not like the way it appears or works, it may be rejected.

✓ **Alpha testing** - The team of developer themselves perform alpha testing by using the system as if it is being used in work environment. They try to find out how user would react to some action in software and how the system should respond to inputs.

✓ **Beta testing** - After the software is tested internally, it is handed over to the users to use it under their production environment only for testing purpose. This is not yet the delivered product. Developers expect that users at this stage will bring minute problems, which were skipped to attend.

6.11 Regression Testing

Whenever a software product is updated with new code, feature, or functionality, it is tested thoroughly to detect if there is any negative impact of the added code. This is known as regression testing.

Testing Documentation

Testing documents are prepared at different stages -

Before Testing

Testing starts with test cases generation. Following documents are needed for reference–

- ✓ **SRS document** - Functional Requirements document
- ✓ **Test Policy document** - This describes how far testing should take place before releasing the product.
- ✓ **Test Strategy document** - These mentions detail aspects of test team, responsibility matrix and rights/responsibility of test manager and test engineer.
- ✓ **Traceability Matrix document** - This is SDLC document, which is related to requirement gathering process. As new requirements come, they are added to this matrix. These matrices help testers know the source of requirement. They can be traced forward and backward.

While Being Tested

The following documents may be required while testing is started and is being done:

- ✓ **Test Case document** - This document contains list of tests required to be conducted. It includes Unit test plan, Integration test plan, System test plan and Acceptance test plan.
- ✓ **Test description** - This document is a detailed description of all test cases and procedures to execute them.
- ✓ **Test case report** - This document contains test case report because of the test.
- ✓ **Test logs** - This document contains test logs for every test case report.

After Testing

- ✓ He is following documents may be generated after testing:
- ✓ **Test summary** - This test summary is collective analysis of all test reports and logs. It summarizes and concludes if the software is ready to be launched. The software is released under version control system if it is ready to launch.

6.12 Testing vs. Quality Control, Quality Assurance and Audit

- ✓ We need to understand that software testing is different from software quality assurance, software quality control and software auditing.
- ✓ **Software quality assurance** - These are software development process monitoring means, by which it is assured that all the measures are taken as per the standards of organization. This monitoring is done to make sure that proper software development methods were followed.
- ✓ **Software quality control** - This is a system to maintain the quality of software product. It may include functional and non-functional aspects of software product, which enhance the goodwill of the organization. This system makes sure that the customer is receiving quality product for their requirement and the product certified as ‘fit for use’.
- ✓ **Software audit** - This is a review of procedure used by the organization to develop the software. A team of auditors, independent of development team examines the software process, procedure, requirements, and other aspects of SDLC. The purpose of software audit is to check that software and its development process both confirm standards, rules, and regulations.

CHAPTER 7

SALESFORCE

Salesforce is a cloud-based technology and one of the largest global web-based Software and Cloud Computing Company which is known as ***"Customer Relationship Management (CRM)"*** product founded in 1999 by former Oracle executive Marc Benioff, Parker Harris, Dave Hoelterhoff, and Frank Dominguez.

Salesforce with their first release offered CRM product and later they released API (Application Programming Interface) for exposing data on their server to clients via protocols. After many updates, Salesforce released a proprietary language called Apex (syntactically like Java).

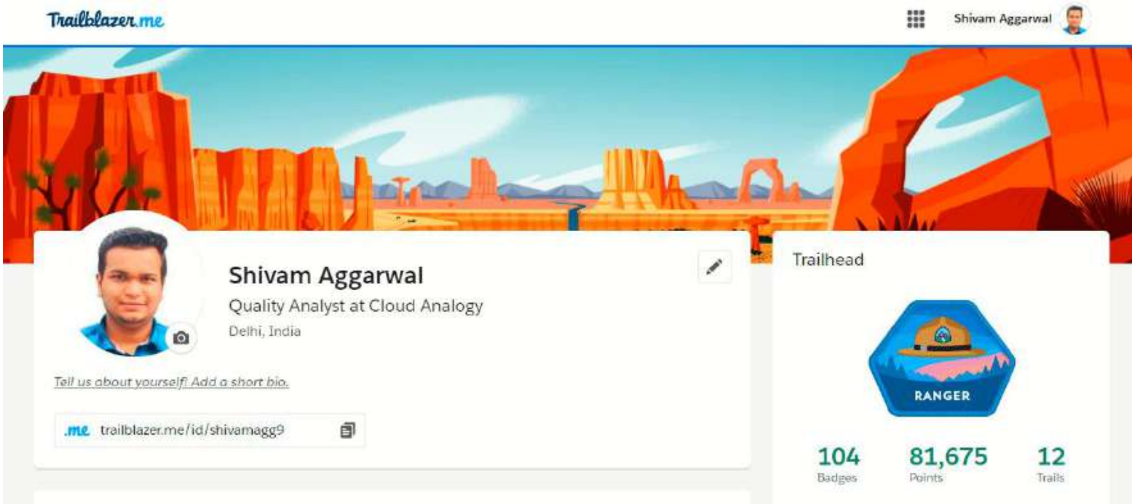
Salesforce is not just a Customer Relationship Management tool, it provides Software, Platform, and Infrastructure as a Service. We can call Salesforce.com as a Salesforce automation (SFA) tools, where the user can develop several applications, Website and portals using drag and drop environment.

- ✓ Salesforce is one type of database which has different and fancy User Interface.
- ✓ Salesforce.com User Interface is built with many support functions like accounts, Surgeries, Sales opportunities, Chatters, Quotes and many more.
- ✓ Salesforce.com cloud application platform is sold as a subscription.

Salesforce.com offers its services through four different clouds:

1. Sales Cloud.
2. Service Cloud.
3. Collaboration Cloud.
4. Force.com Custom Cloud.

7.1 Salesforce org :



Shivam Aggarwal

Quality Analyst at Cloud Analogy

Delhi, India

Tell us about yourself! Add a short bio.

.me trailblazer.me/id/shivamagg9

Trailhead

104	81,675	12
Badges	Points	Trails

Fig 7.1 Salesforce Profile

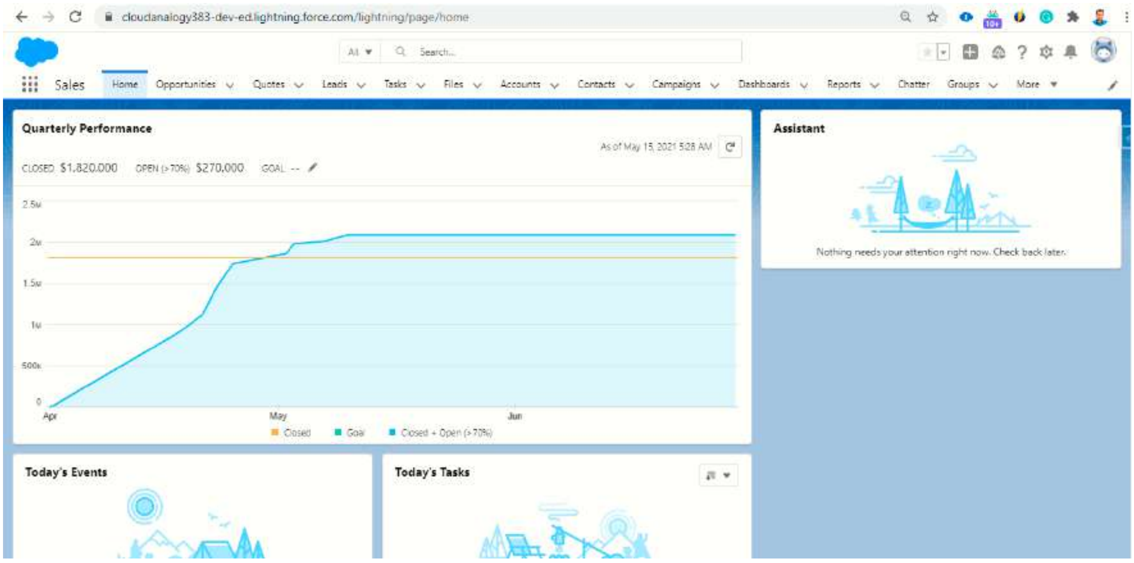
Salesforce org where we can complete the trailhead and learned new skills

7.2 Why Salesforce?

Salesforce is unique and provides the fastest path from Idea to App. In other legacy platforms, to build an application we require hardware, software, permissions access and many more.

- Salesforce is a number one on-demand CRM.
- It requires no infrastructure.
- World’s most trusted cloud.
- We can build anything with our own apps and with Salesforce App Exchange free applications. Powerful and pre-built application available at AppExchange

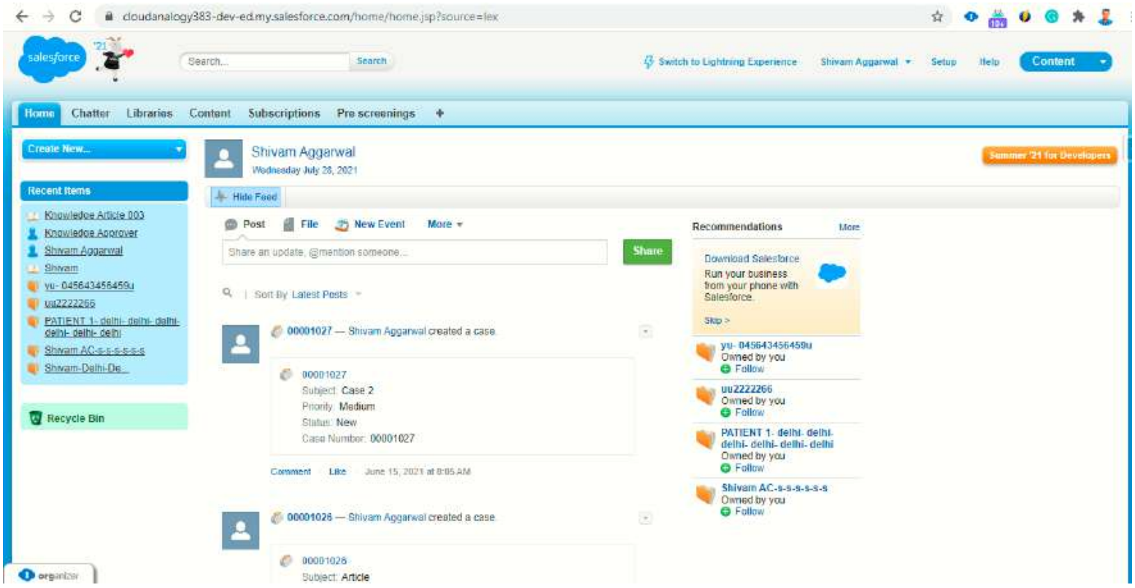
7.3 Salesforce Lighting org



Nothing needs your attention right now. Check back later.

Fig 7.2 Salesforce Lighting org

7.4 Salesforce Classic ORG



00001027 — Shivam Aggarwal created a case

00001027
Subject: Case 2
Priority: Medium
Status: New
Case Number: 00001027

June 15, 2021 at 8:05 AM

00001026 — Shivam Aggarwal created a case

00001026
Subject: Article

Run your business from your phone with Salesforce.

yu- 045643456459u
Owned by you

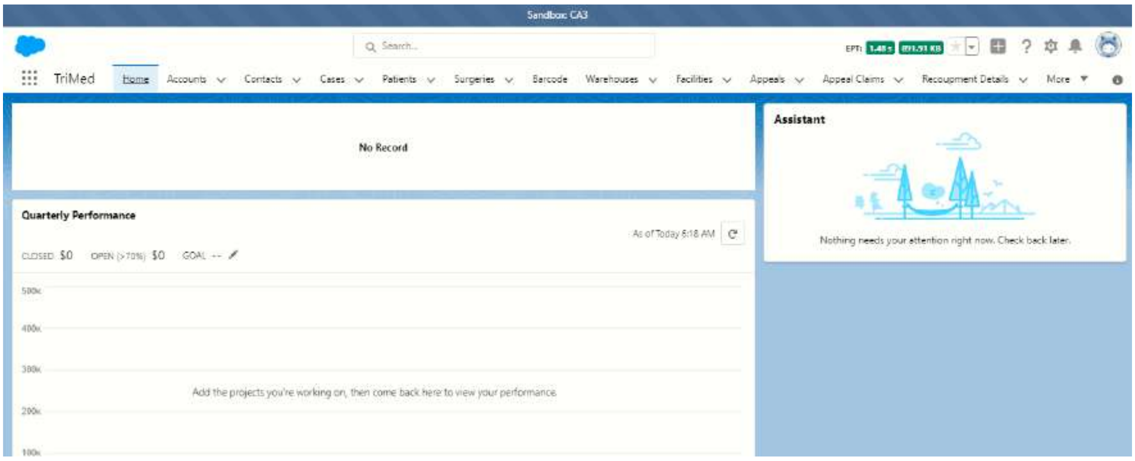
uu2222266
Owned by you

PATIENT 1- delhi- delhi- delhi- delhi- delhi- delhi
Owned by you

Shivam AC-s-s-s-s-s-s
Owned by you

Fig 7.3 Salesforce Classic org

7.5 Sandbox org



No Record

Assistant

Nothing needs your attention right now. Check back later.

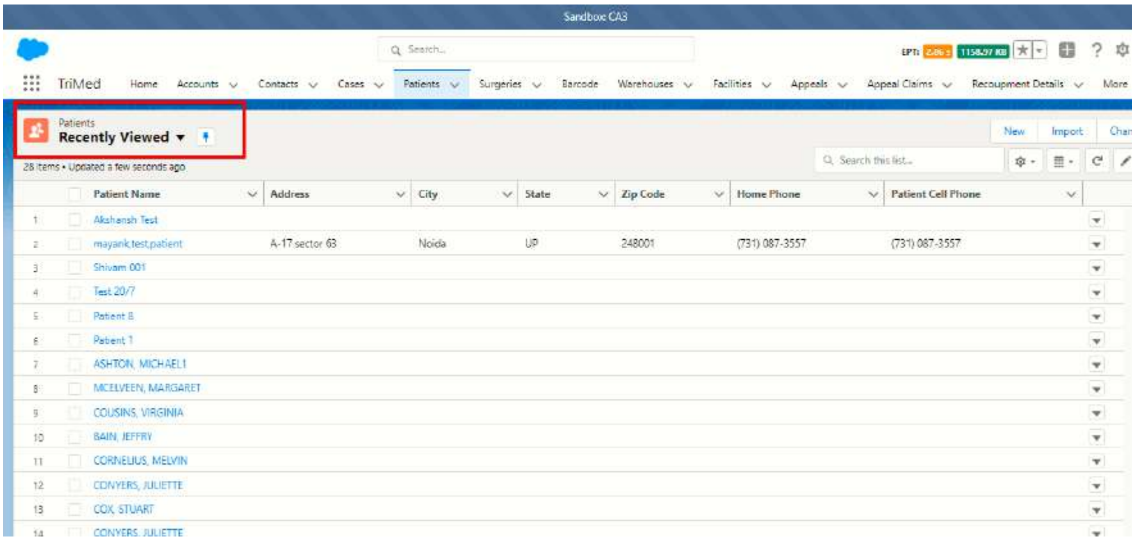
Quarterly Performance

As of Today 6:18 AM

CLOSED $0 OPEN (>70%) $0 GOAL --

Add the projects you're working on, then come back here to view your performance.

Fig 7.4 Sandbox org Home

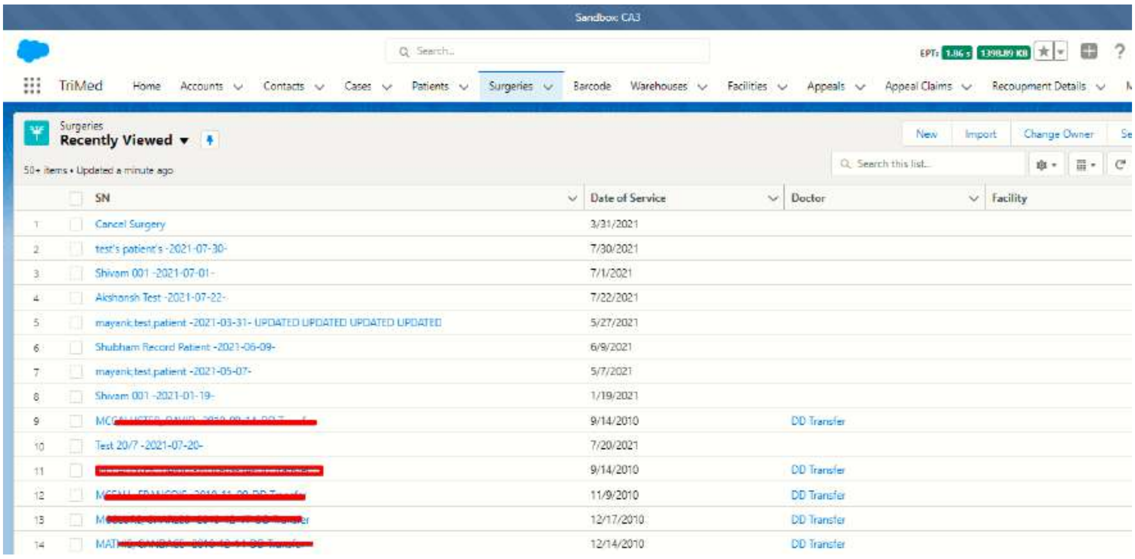


Patients
Recently Viewed

28 items • Updated a few seconds ago

	Patient Name	Address	City	State	Zip Code	Home Phone	Patient Cell Phone
1	Akshansh Test						
2	mayank.test.patient	A-17 sector 63	Noida	UP	248001	(731) 087-3557	(731) 087-3557
3	Shivam 001						
4	Test 20/7						
5	Patient 8						
6	Patient 1						
7	ASHTON, MICHAEL1						
8	MCELVEEN, MARGARET						
9	COUSINS, VIRGINIA						
10	BAIN, JEFFRY						
11	CORNELIUS, MELVIN						
12	CONYERS, JULIETTE						
13	COX, STUART						
14	CONYERS, JULIETTE						

Fig 7.5 Sandbox org (Patients)

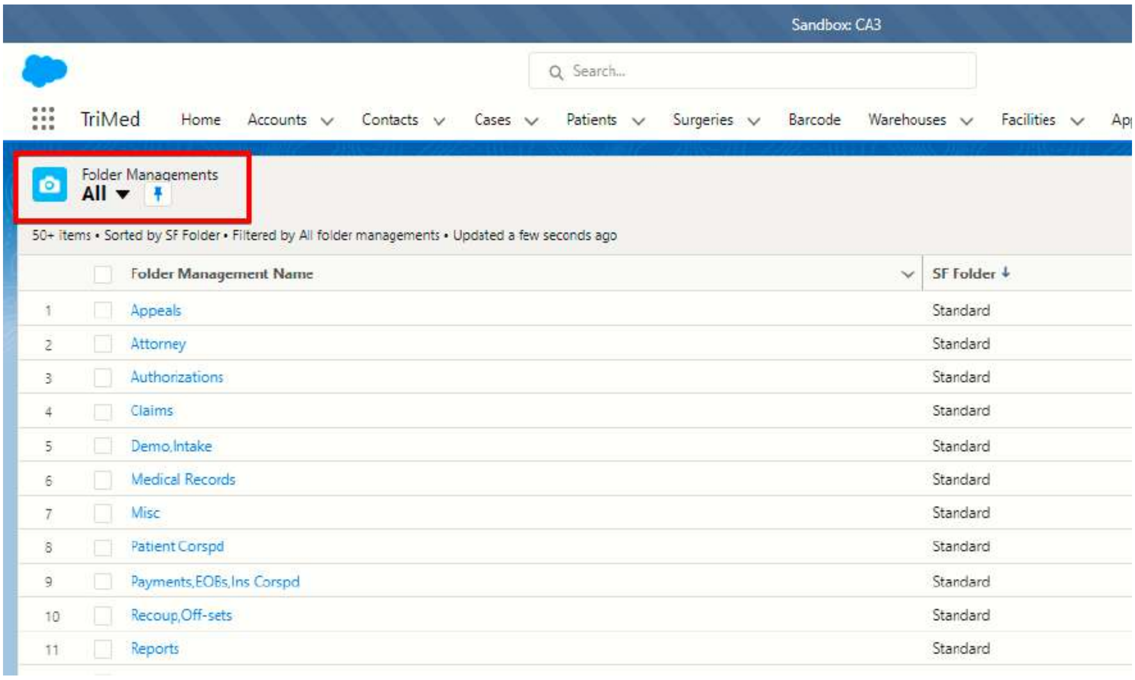


Surgeries
Recently Viewed

50+ items • Updated a minute ago

	SN	Date of Service	Doctor	Facility
1	Cancel Surgery	3/31/2021		
2	test's patient's -2021-07-30-	7/30/2021		
3	Shivam 001 -2021-07-01-	7/1/2021		
4	Akshansh Test -2021-07-22-	7/22/2021		
5	mayank.test.patient -2021-03-31- UPDATED UPDATED UPDATED UPDATED	5/27/2021		
6	Shubham Record Patient -2021-06-09-	6/9/2021		
7	mayank.test.patient -2021-05-07-	5/7/2021		
8	Shivam 001 -2021-01-19-	1/19/2021		
9	[redacted]	9/14/2010	DD Transfer	
10	Test 20/7 -2021-07-20-	7/20/2021		
11	[redacted]	9/14/2010	DD Transfer	
12	[redacted]	11/9/2010	DD Transfer	
13	[redacted]	12/17/2010	DD Transfer	
14	[redacted]	12/14/2010	DD Transfer	

Fig 7.6 Sandbox org (Surgeries)

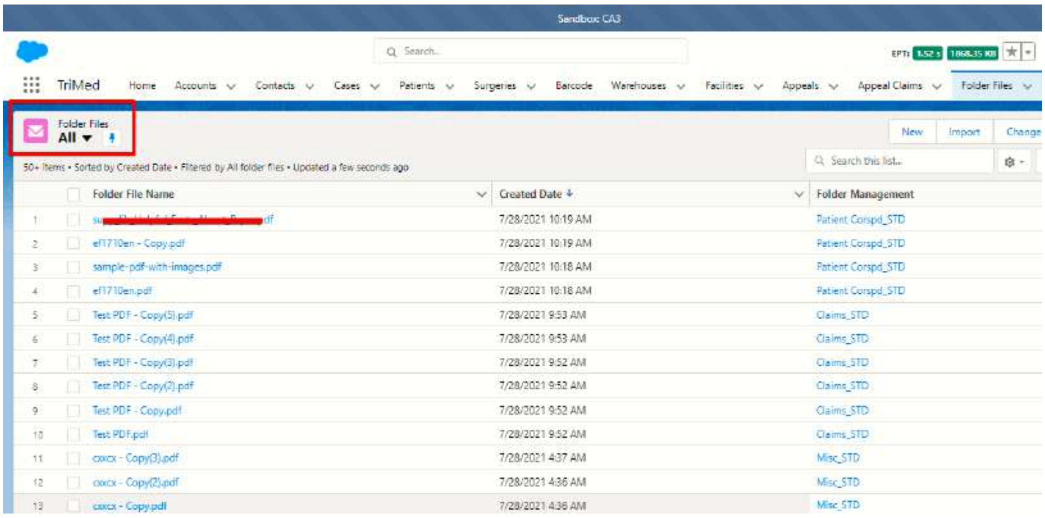


Folder Managements
All

50+ items • Sorted by SF Folder • Filtered by All folder managements • Updated a few seconds ago

	Folder Management Name	SF Folder
1	Appeals	Standard
2	Attorney	Standard
3	Authorizations	Standard
4	Claims	Standard
5	Demo,Intake	Standard
6	Medical Records	Standard
7	Misc	Standard
8	Patient Corspd	Standard
9	Payments,EOBs,Ins Corspd	Standard
10	Recoup,Off-sets	Standard
11	Reports	Standard

Fig 7.7 2 Sandbox org (Folder Management)



Sandbox CA3

TriMed | Home | Accounts | Contacts | Cases | Patients | Surgeries | Barcode | Warehouses | Facilities | Appeals | Appeal Claims | Folder Files

Folder Files
All

New | Import | Change

50+ Items • Sorted by Created Date • Filtered by All folder files • Updated a few seconds ago

	Folder File Name	Created Date	Folder Management
1	[redacted]	7/28/2021 10:19 AM	Patient Corspd_STD
2	ef1710en - Copy.pdf	7/28/2021 10:19 AM	Patient Corspd_STD
3	sample-pdf-with-images.pdf	7/28/2021 10:18 AM	Patient Corspd_STD
4	ef1710en.pdf	7/28/2021 10:18 AM	Patient Corspd_STD
5	Test PDF - Copy(5).pdf	7/28/2021 9:53 AM	Claims_STD
6	Test PDF - Copy(4).pdf	7/28/2021 9:53 AM	Claims_STD
7	Test PDF - Copy(3).pdf	7/28/2021 9:52 AM	Claims_STD
8	Test PDF - Copy(2).pdf	7/28/2021 9:52 AM	Claims_STD
9	Test PDF - Copy.pdf	7/28/2021 9:52 AM	Claims_STD
10	Test PDF.pdf	7/28/2021 9:52 AM	Claims_STD
11	cxxcx - Copy(3).pdf	7/28/2021 4:37 AM	Misc_STD
12	cxxcx - Copy(2).pdf	7/28/2021 4:36 AM	Misc_STD
13	cxxcx - Copy.pdf	7/28/2021 4:36 AM	Misc_STD

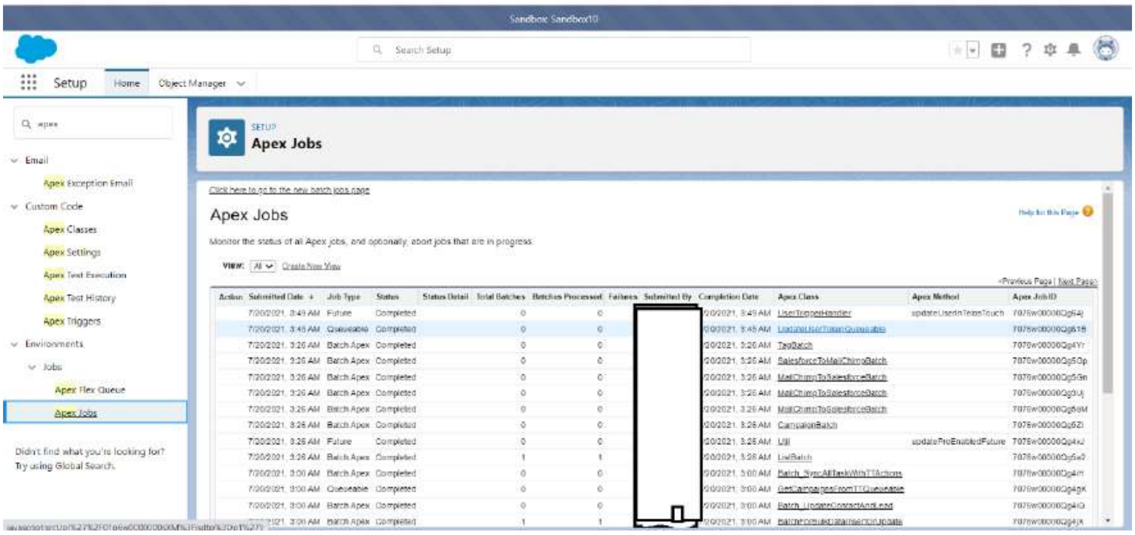
Fig 7.8 Sandbox org (Folder Files)

This is the ORG where I test the component according to test cases scenario.

In this Sandbox org, there the many objects like Patients, Surgeries, Folder Management, Folder Files, Workspace etc. we must test all the object as per requirement when any new changes in org happen then we must perform unit testing as per tickets also we perform regression testing on every component to very that no issue is created in ORG because of any new changes.

7.6 Apex jobs

The Apex job queue lists **all Apex jobs that have been submitted for execution**. Such jobs are listed as Future in the Job Type column, and do not have values in the Total Batches or Batches Processed columns.



Sandbox Sandbox10

Setup | Home | Object Manager

Email
Apex Exception Email
Custom Code
Apex Classes
Apex Settings
Apex Test Execution
Apex Test History
Apex Triggers
Environments
Jobs
Apex Flex Queue
Apex Jobs

Didn't find what you're looking for? Try using Global Search.

SETUP
Apex Jobs

Click here to go to the new batch jobs page

Apex Jobs

Help for this Page

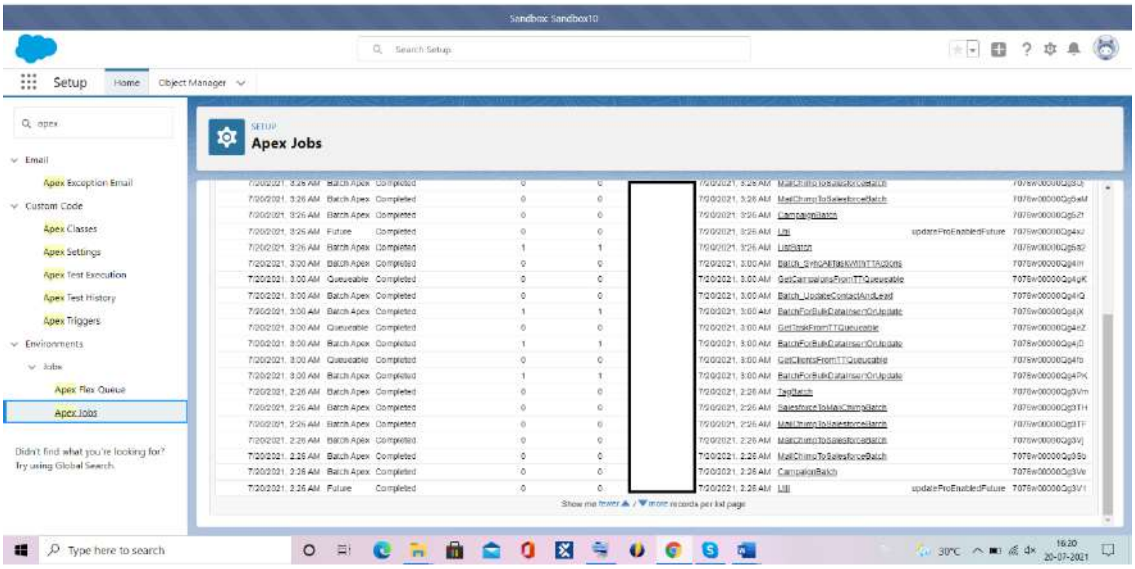
Monitor the status of all Apex jobs, and optionally, abort jobs that are in progress.

View: All | Create New View

«Previous Page | Next Page»

Action	Submitted Date	Job Type	Status	Status Detail	Total Batches	Batches Processed	Failures	Submitted By	Completion Date	Apex Class	Apex Method	Apex Job ID
	7/20/2021, 3:49 AM	Future	Completed		0	0		[redacted]	/20/2021, 3:49 AM	UserTriggerHandler	updateUserInTeleTouch	7076w00000Qg64j
	7/20/2021, 3:45 AM	Queueable	Completed		0	0		[redacted]	/20/2021, 3:45 AM	LoadingUserToTeamQueueable		7076w00000Qg618
	7/20/2021, 3:26 AM	Batch Apex	Completed		0	0		[redacted]	/20/2021, 3:26 AM	TagBatch		7070w00000Qg4Yr
	7/20/2021, 3:26 AM	Batch Apex	Completed		0	0		[redacted]	/20/2021, 3:26 AM	SalesforceToMailChimpBatch		7070w00000Qg5Op
	7/20/2021, 3:26 AM	Batch Apex	Completed		0	0		[redacted]	/20/2021, 3:26 AM	MailChimpToSalesforceBatch		7076w00000Qg5Gn
	7/20/2021, 3:26 AM	Batch Apex	Completed		0	0		[redacted]	/20/2021, 3:26 AM	MailChimpToSalesforceBatch		7076w00000Qg3Uj
	7/20/2021, 3:26 AM	Batch Apex	Completed		0	0		[redacted]	/20/2021, 3:26 AM	MailChimpToSalesforceBatch		7076w00000Qg68M
	7/20/2021, 3:26 AM	Batch Apex	Completed		0	0		[redacted]	/20/2021, 3:26 AM	CampaignBatch		7076w00000Qg6Zl
	7/20/2021, 3:26 AM	Future	Completed		0	0		[redacted]	/20/2021, 3:26 AM	Util	updateProEnabledFuture	7076w00000Qg4xJ
	7/20/2021, 3:26 AM	Batch Apex	Completed		1	1		[redacted]	/20/2021, 3:26 AM	ListBatch		7076w00000Qg5e2
	7/20/2021, 3:00 AM	Batch Apex	Completed		0	0		[redacted]	/20/2021, 3:00 AM	Batch_SyncAllTaskWithTTActions		7076w00000Qg4m
	7/20/2021, 3:00 AM	Queueable	Completed		0	0		[redacted]	/20/2021, 3:00 AM	GetCampaignsFromTTQueueable		7076w00000Qg4gK
	7/20/2021, 3:00 AM	Batch Apex	Completed		0	0		[redacted]	/20/2021, 3:00 AM	Batch_UpdateContactAndLead		7076w00000Qg4iQ
	7/20/2021, 3:00 AM	Batch Apex	Completed		1	1		[redacted]	/20/2021, 3:00 AM	BatchForBulkDataInsertionUpdate		7076w00000Qg4jK

Fig 7.9 Apex jobs (1)



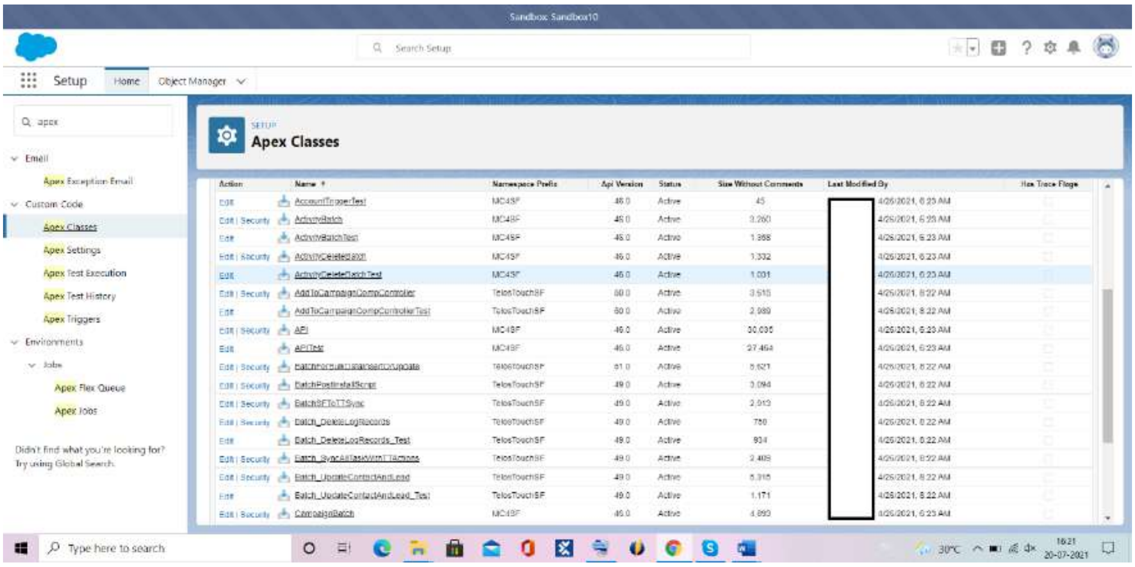
Apex Jobs

7/20/2021, 3:26 AM	Batch Apex	Completed	0	0	[redacted]	7/20/2021, 3:26 AM	MailChimpToSalesforceBatch		7076w00000Qg5Oj
7/20/2021, 3:26 AM	Batch Apex	Completed	0	0	[redacted]	7/20/2021, 3:26 AM	MailChimpToSalesforceBatch		7076w00000Qg5aM
7/20/2021, 3:26 AM	Batch Apex	Completed	0	0	[redacted]	7/20/2021, 3:26 AM	CampaignBatch		7076w00000Qg52t
7/20/2021, 3:26 AM	Future	Completed	0	0	[redacted]	7/20/2021, 3:26 AM	Util	updateProEnabledFuture	7076w00000Qg4xJ
7/20/2021, 3:26 AM	Batch Apex	Completed	1	1	[redacted]	7/20/2021, 3:26 AM	ListBatch		7076w00000Qg5a2
7/20/2021, 3:00 AM	Batch Apex	Completed	0	0	[redacted]	7/20/2021, 3:00 AM	Batch_SyncAllTaskWithTTActions		7076w00000Qg4in
7/20/2021, 3:00 AM	Queueable	Completed	0	0	[redacted]	7/20/2021, 3:00 AM	GetCampaignsFromTTQueueable		7076w00000Qg4gK
7/20/2021, 3:00 AM	Batch Apex	Completed	0	0	[redacted]	7/20/2021, 3:00 AM	Batch_UpdateContactAndLead		7076w00000Qg4iQ
7/20/2021, 3:00 AM	Batch Apex	Completed	1	1	[redacted]	7/20/2021, 3:00 AM	BatchForBulkDataInsertOrUpdate		7076w00000Qg4jX
7/20/2021, 3:00 AM	Queueable	Completed	0	0	[redacted]	7/20/2021, 3:00 AM	GetTaskFromTTQueueable		7076w00000Qg4eZ
7/20/2021, 3:00 AM	Batch Apex	Completed	1	1	[redacted]	7/20/2021, 3:00 AM	BatchForBulkDataInsertOrUpdate		7076w00000Qg4jD
7/20/2021, 3:00 AM	Queueable	Completed	0	0	[redacted]	7/20/2021, 3:00 AM	GetClientsFromTTQueueable		7076w00000Qg4fb
7/20/2021, 3:00 AM	Batch Apex	Completed	1	1	[redacted]	7/20/2021, 3:00 AM	BatchForBulkDataInsertOrUpdate		7076w00000Qg4PK
7/20/2021, 2:26 AM	Batch Apex	Completed	0	0	[redacted]	7/20/2021, 2:26 AM	TagBatch		7076w00000Qg3Vm
7/20/2021, 2:26 AM	Batch Apex	Completed	0	0	[redacted]	7/20/2021, 2:26 AM	SalesforceToMailChimpBatch		7076w00000Qg3TH
7/20/2021, 2:26 AM	Batch Apex	Completed	0	0	[redacted]	7/20/2021, 2:26 AM	MailChimpToSalesforceBatch		7076w00000Qg3TF
7/20/2021, 2:26 AM	Batch Apex	Completed	0	0	[redacted]	7/20/2021, 2:26 AM	MailChimpToSalesforceBatch		7076w00000Qg3Vj
7/20/2021, 2:26 AM	Batch Apex	Completed	0	0	[redacted]	7/20/2021, 2:26 AM	MailChimpToSalesforceBatch		7076w00000Qg3Sb
7/20/2021, 2:26 AM	Batch Apex	Completed	0	0	[redacted]	7/20/2021, 2:26 AM	CampaignBatch		7076w00000Qg3Ve
7/20/2021, 2:26 AM	Future	Completed	0	0	[redacted]	7/20/2021, 2:26 AM	Util	updateProEnabledFuture	7076w00000Qg3V1

Show me fewer ▲ / ▼ more records per list page

Fig 7.10 Apex jobs (2)

7.7 Apex Classes

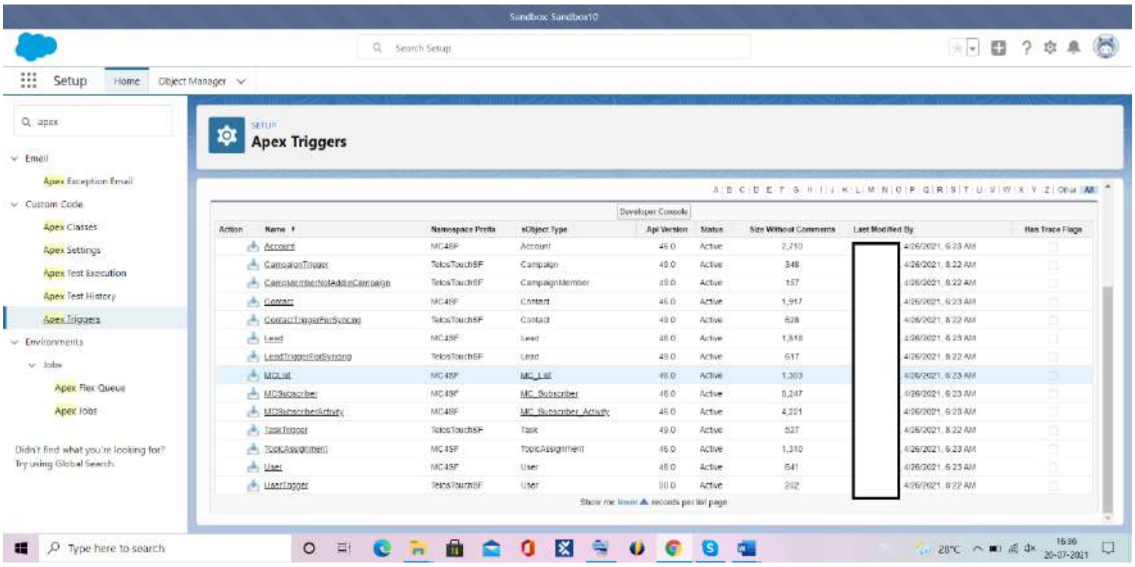


Apex Classes

Action	Name ↑	Namespace Prefix	Api Version	Status	Size Without Comments	Last Modified By	Has Trace Flags
Edit	AccountTriggerTest	MC4SF	46.0	Active	45	[redacted] 4/26/2021, 6:23 AM	☐
Edit | Security	ActivityBatch	MC4SF	46.0	Active	3,260	[redacted] 4/26/2021, 6:23 AM	☐
Edit	ActivityBatchTest	MC4SF	46.0	Active	1,368	[redacted] 4/26/2021, 6:23 AM	☐
Edit | Security	ActivityDeleteBatch	MC4SF	46.0	Active	1,332	[redacted] 4/26/2021, 6:23 AM	☐
Edit	ActivityDeleteBatchTest	MC4SF	46.0	Active	1,001	[redacted] 4/26/2021, 6:23 AM	☐
Edit | Security	AddToCampaignCompController	TelosTouchSF	50.0	Active	3,515	[redacted] 4/26/2021, 8:22 AM	☐
Edit	AddToCampaignCompControllerTest	TelosTouchSF	50.0	Active	2,989	[redacted] 4/26/2021, 8:22 AM	☐
Edit | Security	API	MC4SF	46.0	Active	30,036	[redacted] 4/26/2021, 6:23 AM	☐
Edit	APITest	MC4SF	46.0	Active	27,464	[redacted] 4/26/2021, 6:23 AM	☐
Edit | Security	BatchForBulkDataInsertOrUpdate	TelosTouchSF	51.0	Active	5,621	[redacted] 4/26/2021, 8:22 AM	☐
Edit | Security	BatchPostInstallScript	TelosTouchSF	49.0	Active	3,094	[redacted] 4/26/2021, 8:22 AM	☐
Edit | Security	BatchSFToTTSync	TelosTouchSF	49.0	Active	2,013	[redacted] 4/26/2021, 8:22 AM	☐
Edit | Security	Batch_DeleteLogRecords	TelosTouchSF	49.0	Active	780	[redacted] 4/26/2021, 8:22 AM	☐
Edit	Batch_DeleteLogRecords_Test	TelosTouchSF	49.0	Active	934	[redacted] 4/26/2021, 8:22 AM	☐
Edit | Security	Batch_SyncAllTaskWithTTActions	TelosTouchSF	49.0	Active	2,409	[redacted] 4/26/2021, 8:22 AM	☐
Edit | Security	Batch_UpdateContactAndLead	TelosTouchSF	49.0	Active	5,316	[redacted] 4/26/2021, 8:22 AM	☐
Edit	Batch_UpdateContactAndLead_Test	TelosTouchSF	49.0	Active	1,171	[redacted] 4/26/2021, 8:22 AM	☐
Edit | Security	CampaignBatch	MC4SF	46.0	Active	4,893	[redacted] 4/26/2021, 6:23 AM	☐

Fig 7.11 Apex classes

7.8 Apex Trigger



Action	Name ↑	Namespace Prefix	sObject Type	Api Version	Status	Size Without Comments	Last Modified By	Has Trace Flags
	Account	MC4SF	Account	45.0	Active	2,710	[redacted], 4/26/2021, 6:23 AM	□
	CampaignTrigger	TelosTouchSF	Campaign	49.0	Active	348	[redacted], 4/26/2021, 8:22 AM	□
	CampMemberNotAddinCampaign	TelosTouchSF	CampaignMember	49.0	Active	157	[redacted], 4/26/2021, 8:22 AM	□
	Contact	MC4SF	Contact	45.0	Active	1,917	[redacted], 4/26/2021, 6:23 AM	□
	ContactTriggerForSyncing	TelosTouchSF	Contact	49.0	Active	628	[redacted], 4/26/2021, 8:22 AM	□
	Lead	MC4SF	Lead	46.0	Active	1,618	[redacted], 4/26/2021, 6:23 AM	□
	LeadTriggerForSyncing	TelosTouchSF	Lead	49.0	Active	617	[redacted], 4/26/2021, 8:22 AM	□
	MCList	MC4SF	MC_List	46.0	Active	1,303	[redacted], 4/26/2021, 6:23 AM	□
	MCSubscriber	MC4SF	MC_Subscriber	46.0	Active	6,247	[redacted], 4/26/2021, 6:23 AM	□
	MCSubscriberActivity	MC4SF	MC_Subscriber_Activity	45.0	Active	4,221	[redacted], 4/26/2021, 6:23 AM	□
	TaskTrigger	TelosTouchSF	Task	49.0	Active	527	[redacted], 4/26/2021, 8:22 AM	□
	TopicAssignment	MC4SF	TopicAssignment	45.0	Active	1,310	[redacted], 4/26/2021, 6:23 AM	□
	User	MC4SF	User	46.0	Active	641	[redacted], 4/26/2021, 6:23 AM	□
	UserTrigger	TelosTouchSF	User	50.0	Active	292	[redacted], 4/26/2021, 8:22 AM	□

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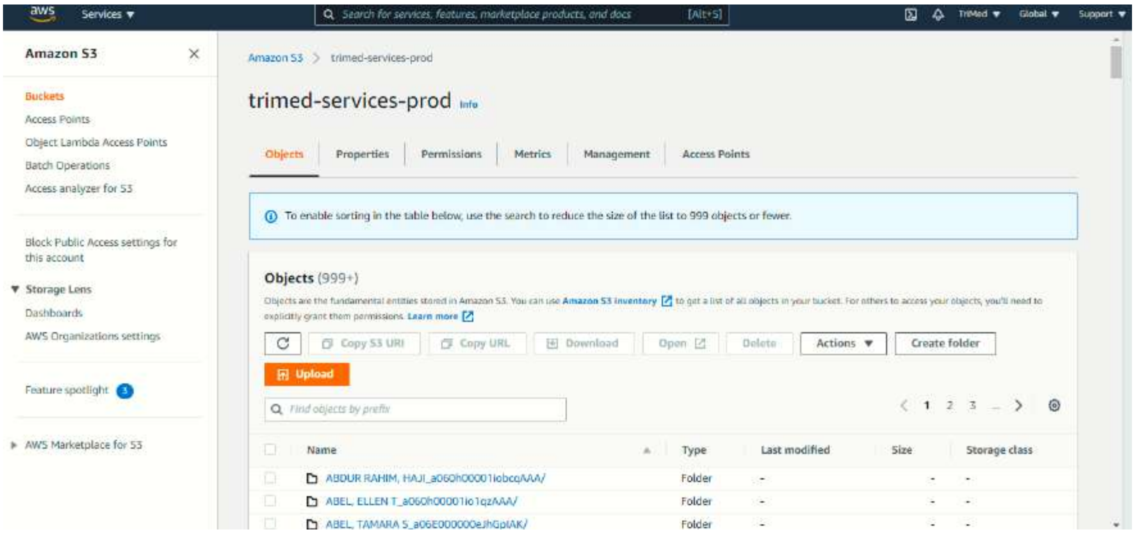
Fig 7.12 Apex Trigger

CHAPTER 8

Output Screen (Syncing to AWS)



trimed-services-prod

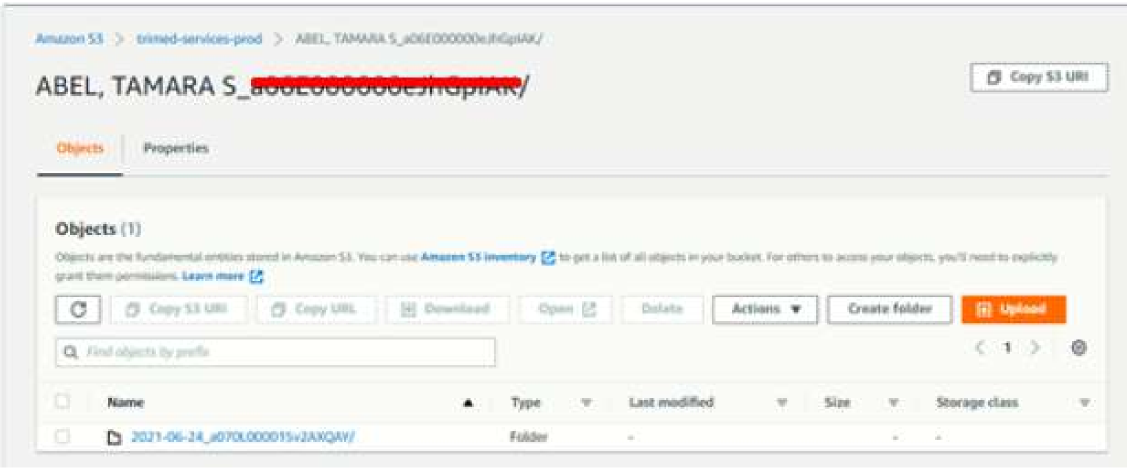
To enable sorting in the table below, use the search to reduce the size of the list to 999 objects or fewer.

Objects (999+)

Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more

□	Name	Type	Last modified	Size	Storage class
□	ABDUR RAHIM, HAJI_a060h00001iobcqAAA/	Folder	-	-	-
□	ABEL, ELLEN T_a060h00001io1qzAAA/	Folder	-	-	-
□	ABEL, TAMARA S_a06E000000eJhGpIAK/	Folder	-	-	-

Fig 8.1 Surgeries in AWS



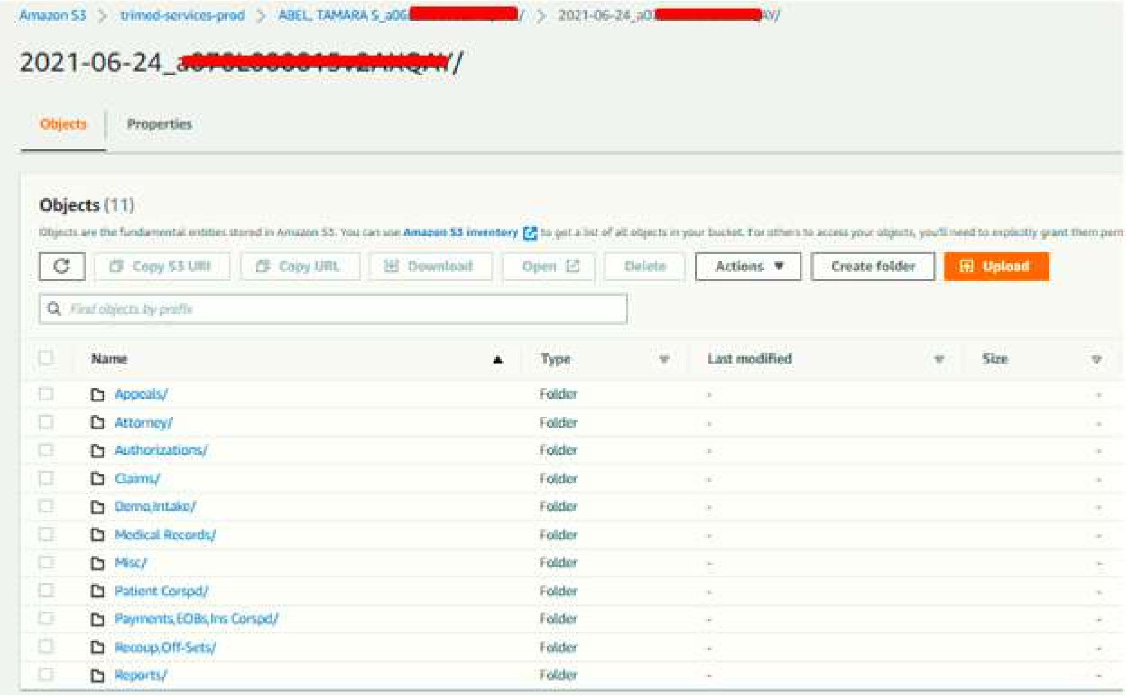
ABEL, TAMARA S_[redacted]/

Objects (1)

Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more

□	Name	Type	Last modified	Size	Storage class
□	2021-06-24_a070L000015v2AXQAY/	Folder	-	-	-

Fig 8.2 Patients in AWS



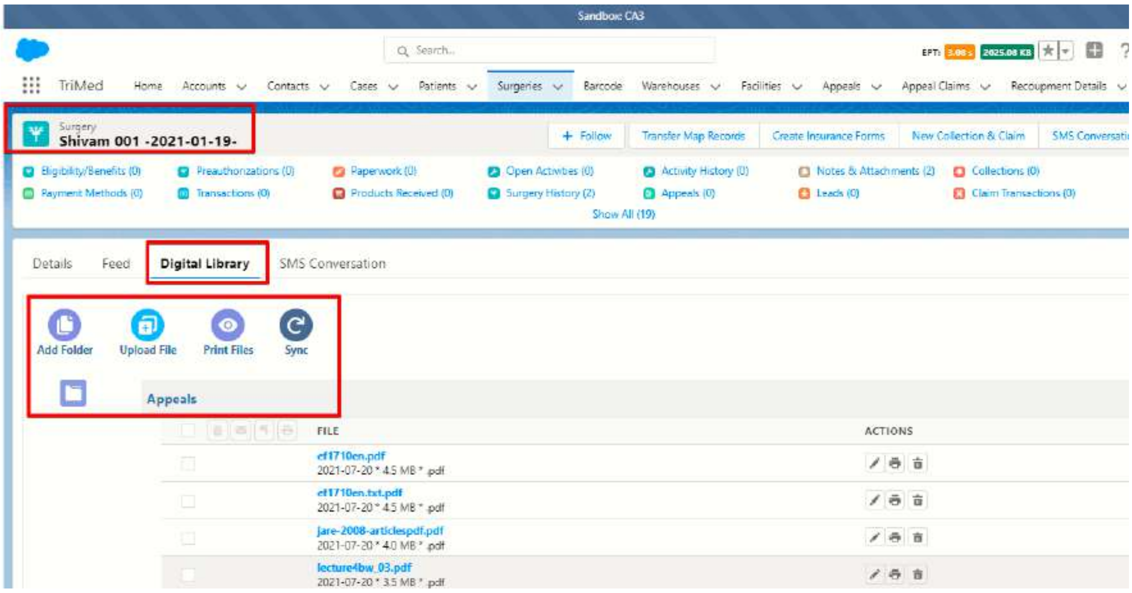
2021-06-24_[redacted]/

Objects (11)

Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them perm

□	Name ▲	Type	Last modified	Size
□	Appeals/	Folder	-	-
□	Attorney/	Folder	-	-
□	Authorizations/	Folder	-	-
□	Claims/	Folder	-	-
□	Demo,Intake/	Folder	-	-
□	Medical Records/	Folder	-	-
□	Misc/	Folder	-	-
□	Patient Corspd/	Folder	-	-
□	Payments,EOBs,Ins Corspd/	Folder	-	-
□	Recoup,Off-Sets/	Folder	-	-
□	Reports/	Folder	-	-

Fig 8.3 Folder Management in AWS



FILE	ACTIONS
ef1710en.pdf 2021-07-20 * 4.5 MB * .pdf	
ef1710en.txt.pdf 2021-07-20 * 4.5 MB * .pdf	
jare-2008-articlespdf.pdf 2021-07-20 * 4.0 MB * .pdf	
lecture4bw_03.pdf 2021-07-20 * 3.5 MB * .pdf	

Fig 8.4 Digital Library in Salesforce

CHAPTER 9

Introduction to Assigned Job

As a Tester my main work is to test every possible functionality of each component of the module. I must create test cases for the assigned testing task. In this I must choose the best scenario to explain the component
and then write description for the component and test the functionality that the component is working fine or not. When component is working fine than I saved it as pass and moved to the next scenario of the component but when the component is failed, I must create evidence for the same and create bug which I assigned to the development team to correct the failure scenario and then again doing the retesting for the component that all the things is working fine as per acceptance criteria.

Key Points:

- Work closely with project managers and developers and handle multiple work
- Execute manual and automated test cases, analyze results, report, and track defects, verify fixes, and perform follow-up work to resolve issues
- Lead teams to create and execute test plans and scripts that will determine optimal application performance according to specifications
- Work closely with project managers and developers and handle multiple priorities simultaneously
- Assists and cooperates with co-workers, supervisor, and management
- Work with automation team to develop and execute automated tests
- Responsible for all aspects of the QA cycle for assigned projects
- Developing Test Cases, Test Strategies and Test Plans that will ensure comprehensive test coverage
- Conducting hands on functional, and system integration testing; report, track and follow up on issues in a timely manner
- Working closely with technical and non-technical peers and senior management to promote successful delivery of products and services
- Supporting continuous improvement of the current test process
- Knowledge in writing basic SQL queries and end to end workflow
- Solid expertise in testing Buy/Sell Side Order Management Systems
- Assist with developing test plan timeline

Conversational agent or Chatbot is a program that generates response based on given inPut to emulate human conversations in text or voice mode. These applications are designed to simulate human-human interactions. Chatbots are predominantly used in business and corporate organizations including government, nonprofit and private ones. Their functioning can range from customer service, product suggestion, product inquiry to personal Associate. Many of these chat agents are built using rule-based techniques, retrieval techniques or simple machine learning algorithms. In retrieval-based techniques, chat agents scan for keywords within the input phrase and retrieves relevant answers based on the query strings. They rely on keyword similarity and retrieve text is pulled from internal or external data sources including world wide web or organizational database. Some other advanced chatbots are developed with natural language processing (NLP) techniques and machine learning algorithms. Also, there are many commercial chat engines available, which help build chatbots based on client data input signed to simulate human-human interactions. Chatbots are predominantly used in business and corporate organizations including government, nonprofit and private ones. Their functioning can range from customer service, product suggestion, product inquiry to personal Associate. Many of these chat agents are built using rule-based techniques, retrieval techniques or simple machine learning algorithms.

In retrieval-based techniques, chat agents scan for keywords within the input phrase and retrieves relevant answers based on the query string. They rely on keyword similarity and retrieve text is pulled from internal or external data sources including world wide web or organizational database. Some other advanced chatbots are developed with natural language processing (NLP) techniques and machine learning algorithms. Also, there are many commercial chat engines available, which help build chatbots based on client data input.

3 Ways to Test:

There are 3 ways you can do testing.

1. **Manual testing** is the most hands-on type of testing and is employed by every team at some point. Of course, in today’s fast-paced software development lifecycle, manual testing is tough to scale.

2. **Manual testing** is the most hands-on type of testing and is employed by every team at some point. Of course, in today's fast-paced software development lifecycle, manual testing is tough to scale.
3. **Automated testing** uses test scripts and specialized tools to automate the process of software testing.
4. **Continuous testing** goes even further, applying the principles of automated testing in a scaled, continuous manner to achieve the most reliable test coverage for an enterprise. Keep reading to learn more about the differences between automated testing vs. manual testing and how continuous testing fits in.

Types of Automation Testing

There are several tests automation types — and frameworks and tools to support them

Considering automating tests? Find out:

- Why test automation is important.
- Which tests you should automate.
- How automated testing should work.

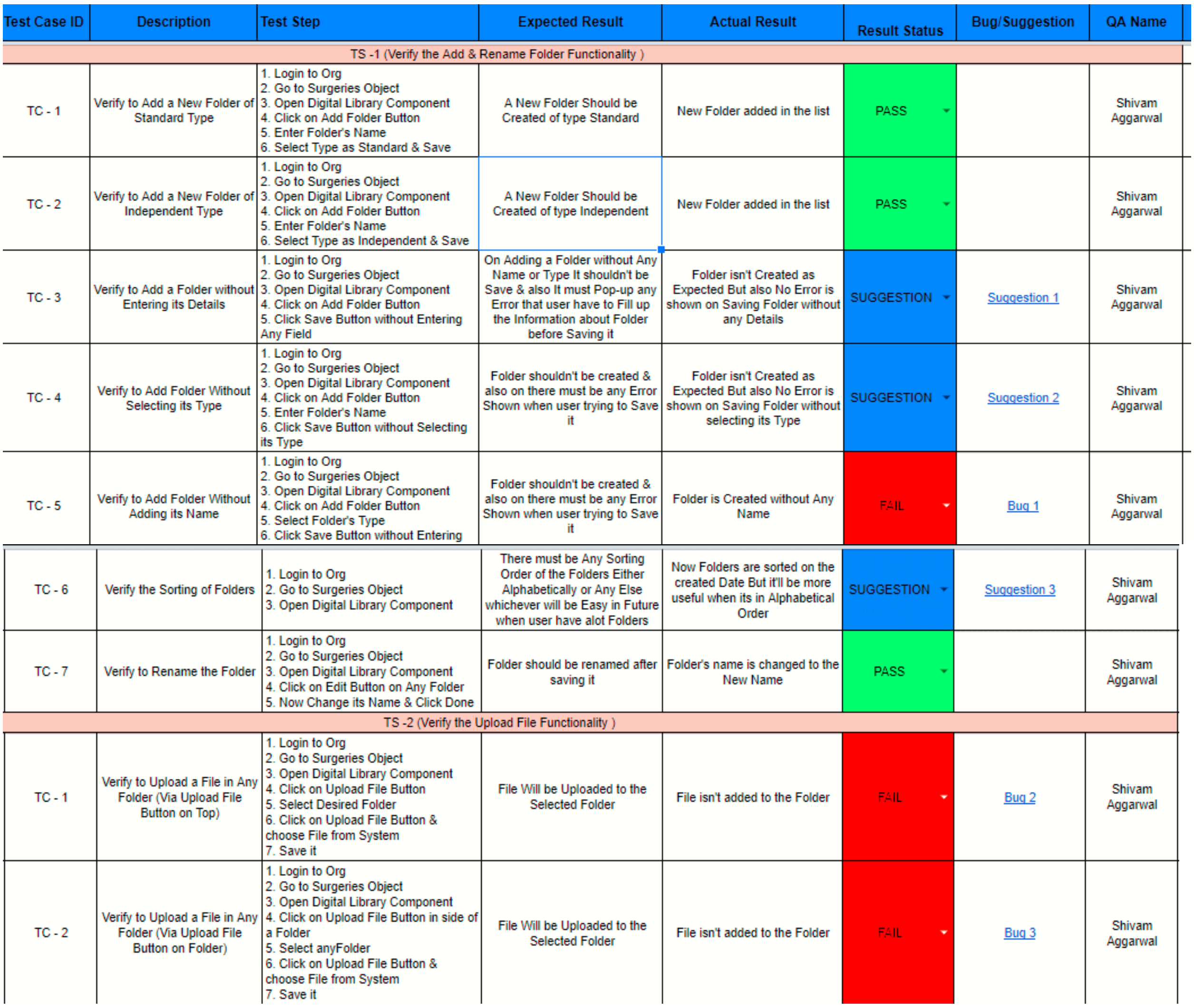
In Automation Testing My job is to creating Buckets in Q-Test and Run through Automation.

And write test cases for the related tickets and verify it Manually.

CHAPTER 10

Manual Test sheet of TriPed – Digital Drawer

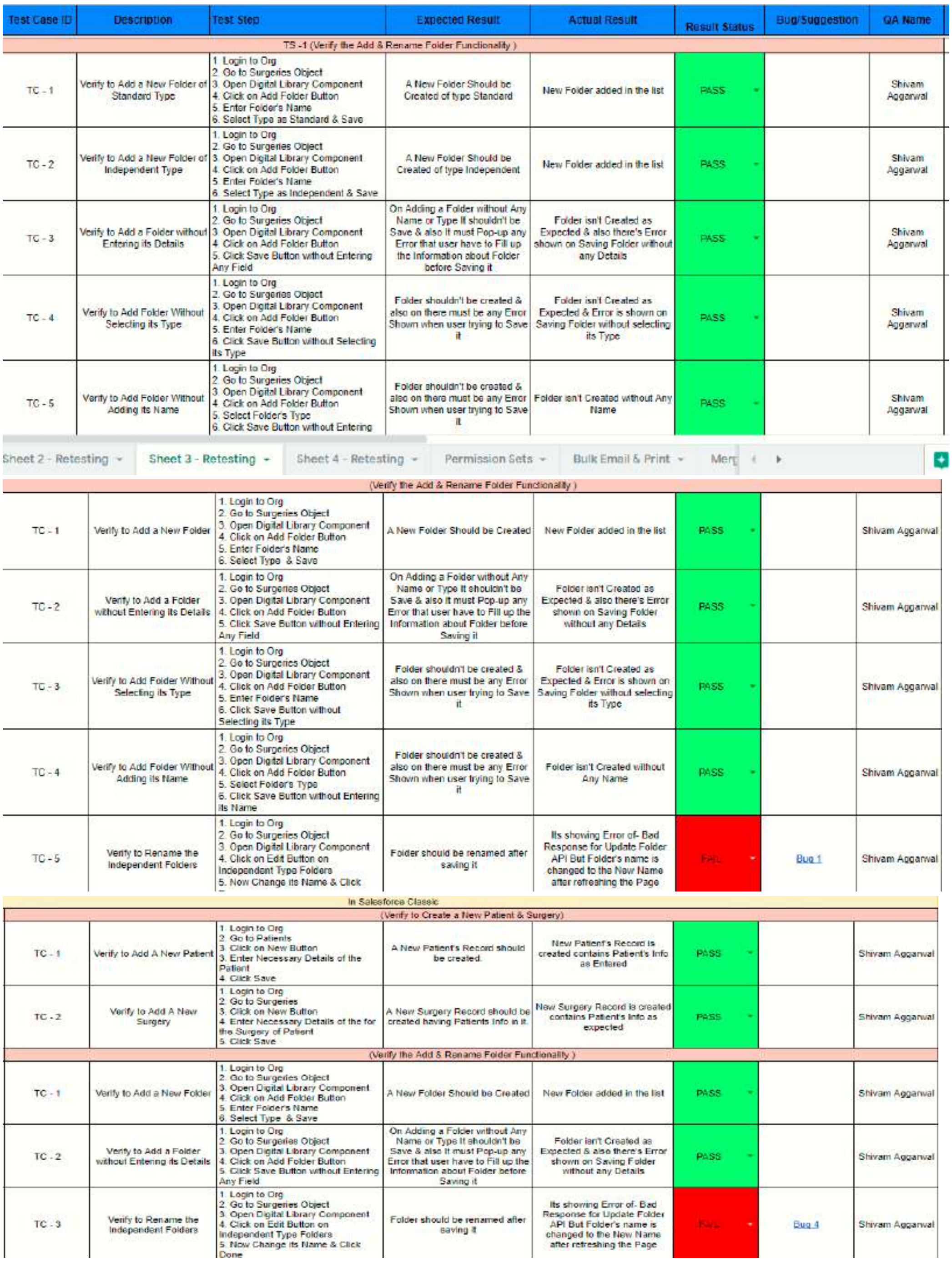
10.1 Manual Test sheet of TriPed – Digital Drawer



Test Case ID	Description	Test Step	Expected Result	Actual Result	Result Status	Bug/Suggestion	QA Name
TS -1 (Verify the Add & Rename Folder Functionality)							
TC - 1	Verify to Add a New Folder of Standard Type	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Add Folder Button 5. Enter Folder's Name 6. Select Type as Standard & Save	A New Folder Should be Created of type Standard	New Folder added in the list	PASS		Shivam Aggarwal
TC - 2	Verify to Add a New Folder of Independent Type	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Add Folder Button 5. Enter Folder's Name 6. Select Type as Independent & Save	A New Folder Should be Created of type Independent	New Folder added in the list	PASS		Shivam Aggarwal
TC - 3	Verify to Add a Folder without Entering its Details	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Add Folder Button 5. Click Save Button without Entering Any Field	On Adding a Folder without Any Name or Type It shouldn't be Save & also It must Pop-up any Error that user have to Fill up the Information about Folder before Saving it	Folder isn't Created as Expected But also No Error is shown on Saving Folder without any Details	SUGGESTION	Suggestion 1	Shivam Aggarwal
TC - 4	Verify to Add Folder Without Selecting its Type	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Add Folder Button 5. Enter Folder's Name 6. Click Save Button without Selecting its Type	Folder shouldn't be created & also on there must be any Error Shown when user trying to Save it	Folder isn't Created as Expected But also No Error is shown on Saving Folder without selecting its Type	SUGGESTION	Suggestion 2	Shivam Aggarwal
TC - 5	Verify to Add Folder Without Adding its Name	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Add Folder Button 5. Select Folder's Type 6. Click Save Button without Entering	Folder shouldn't be created & also on there must be any Error Shown when user trying to Save it	Folder is Created without Any Name	FAIL	Bug 1	Shivam Aggarwal
TC - 6	Verify the Sorting of Folders	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component	There must be Any Sorting Order of the Folders Either Alphabetically or Any Else whichever will be Easy in Future when user have alot Folders	Now Folders are sorted on the created Date But it'll be more useful when its in Alphabetical Order	SUGGESTION	Suggestion 3	Shivam Aggarwal
TC - 7	Verify to Rename the Folder	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Edit Button on Any Folder 5. Now Change its Name & Click Done	Folder should be renamed after saving it	Folder's name is changed to the New Name	PASS		Shivam Aggarwal
TS -2 (Verify the Upload File Functionality)							
TC - 1	Verify to Upload a File in Any Folder (Via Upload File Button on Top)	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Upload File Button 5. Select Desired Folder 6. Click on Upload File Button & choose File from System 7. Save it	File Will be Uploaded to the Selected Folder	File isn't added to the Folder	FAIL	Bug 2	Shivam Aggarwal
TC - 2	Verify to Upload a File in Any Folder (Via Upload File Button on Folder)	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Upload File Button in side of a Folder 5. Select anyFolder 6. Click on Upload File Button & choose File from System 7. Save it	File Will be Uploaded to the Selected Folder	File isn't added to the Folder	FAIL	Bug 3	Shivam Aggarwal

Fig 10.1 Manual Test sheet of TriPed

10.2 Manual Test sheet of TriPed – Digital Drawer after Bug Fixing (Re-Test sheet)



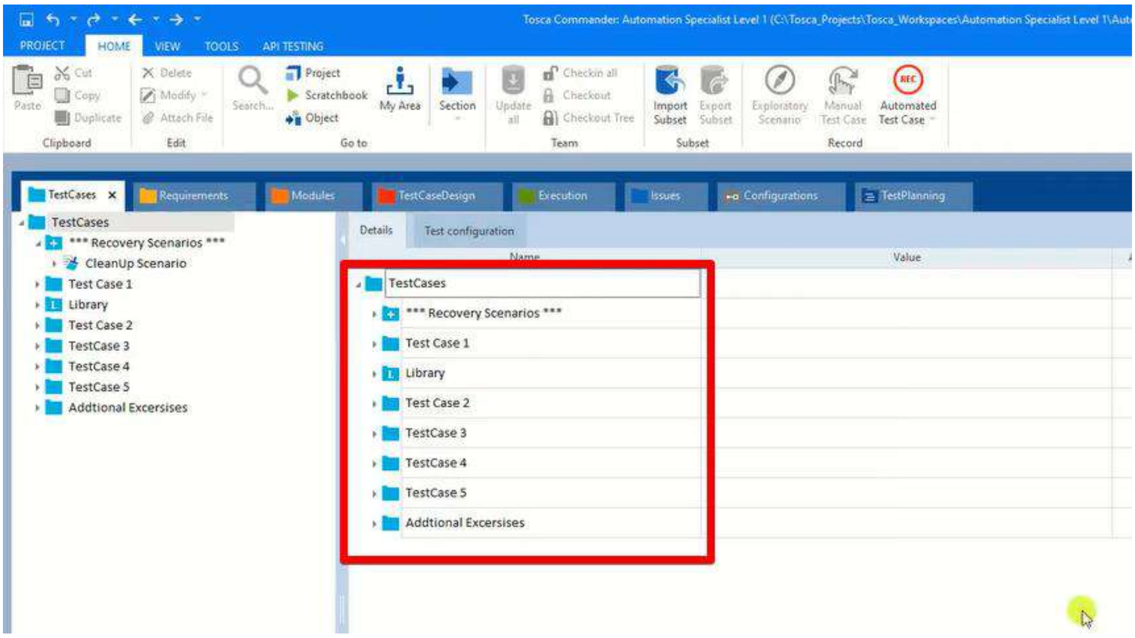
Test Case ID	Description	Test Step	Expected Result	Actual Result	Result Status	Bug/Suggestion	QA Name
TS -1 (Verify the Add & Rename Folder Functionality)							
TC - 1	Verify to Add a New Folder of Standard Type	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Add Folder Button 5. Enter Folder's Name 6. Select Type as Standard & Save	A New Folder Should be Created of type Standard	New Folder added in the list	PASS		Shivam Aggarwal
TC - 2	Verify to Add a New Folder of Independent Type	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Add Folder Button 5. Enter Folder's Name 6. Select Type as Independent & Save	A New Folder Should be Created of type Independent	New Folder added in the list	PASS		Shivam Aggarwal
TC - 3	Verify to Add a Folder without Entering its Details	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Add Folder Button 5. Click Save Button without Entering Any Field	On Adding a Folder without Any Name or Type It shouldn't be Save & also It must Pop-up any Error that user have to Fill up the Information about Folder before Saving it	Folder isn't Created as Expected & also there's Error shown on Saving Folder without any Details	PASS		Shivam Aggarwal
TC - 4	Verify to Add Folder Without Selecting its Type	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Add Folder Button 5. Enter Folder's Name 6. Click Save Button without Selecting its Type	Folder shouldn't be created & also on there must be any Error Shown when user trying to Save it	Folder isn't Created as Expected & Error is shown on Saving Folder without selecting its Type	PASS		Shivam Aggarwal
TC - 5	Verify to Add Folder Without Adding its Name	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Add Folder Button 5. Select Folder's Type 6. Click Save Button without Entering	Folder shouldn't be created & also on there must be any Error Shown when user trying to Save it	Folder isn't Created without Any Name	PASS		Shivam Aggarwal

(Verify the Add & Rename Folder Functionality)							
TC - 1	Verify to Add a New Folder	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Add Folder Button 5. Enter Folder's Name 6. Select Type & Save	A New Folder Should be Created	New Folder added in the list	PASS		Shivam Aggarwal
TC - 2	Verify to Add a Folder without Entering its Details	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Add Folder Button 5. Click Save Button without Entering Any Field	On Adding a Folder without Any Name or Type It shouldn't be Save & also It must Pop-up any Error that user have to Fill up the Information about Folder before Saving it	Folder isn't Created as Expected & also there's Error shown on Saving Folder without any Details	PASS		Shivam Aggarwal
TC - 3	Verify to Add Folder Without Selecting its Type	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Add Folder Button 5. Enter Folder's Name 6. Click Save Button without Selecting its Type	Folder shouldn't be created & also on there must be any Error Shown when user trying to Save it	Folder isn't Created as Expected & Error is shown on Saving Folder without selecting its Type	PASS		Shivam Aggarwal
TC - 4	Verify to Add Folder Without Adding its Name	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Add Folder Button 5. Select Folder's Type 6. Click Save Button without Entering its Name	Folder shouldn't be created & also on there must be any Error Shown when user trying to Save it	Folder isn't Created without Any Name	PASS		Shivam Aggarwal
TC - 5	Verify to Rename the Independent Folders	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Edit Button on Independent Type Folders 5. Now Change its Name & Click	Folder should be renamed after saving it	Its showing Error of- Bad Response for Update Folder API But Folder's name is changed to the New Name after refreshing the Page	FAIL	Bug 1	Shivam Aggarwal

In Salesforce Classic							
(Verify to Create a New Patient & Surgery)							
TC - 1	Verify to Add A New Patient	1. Login to Org 2. Go to Patients 3. Click on New Button 3. Enter Necessary Details of the Patient 4. Click Save	A New Patient's Record should be created.	New Patient's Record is created contains Patient's Info as Entered	PASS		Shivam Aggarwal
TC - 2	Verify to Add A New Surgery	1. Login to Org 2. Go to Surgeries 3. Click on New Button 4. Enter Necessary Details of the for the Surgery of Patient 5. Click Save	A New Surgery Record should be created having Patients Info in it.	New Surgery Record is created contains Patient's Info as expected	PASS		Shivam Aggarwal
(Verify the Add & Rename Folder Functionality)							
TC - 1	Verify to Add a New Folder	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Add Folder Button 5. Enter Folder's Name 6. Select Type & Save	A New Folder Should be Created	New Folder added in the list	PASS		Shivam Aggarwal
TC - 2	Verify to Add a Folder without Entering its Details	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Add Folder Button 5. Click Save Button without Entering Any Field	On Adding a Folder without Any Name or Type It shouldn't be Save & also It must Pop-up any Error that user have to Fill up the Information about Folder before Saving it	Folder isn't Created as Expected & also there's Error shown on Saving Folder without any Details	PASS		Shivam Aggarwal
TC - 3	Verify to Rename the Independent Folders	1. Login to Org 2. Go to Surgeries Object 3. Open Digital Library Component 4. Click on Edit Button on Independent Type Folders 5. Now Change its Name & Click Done	Folder should be renamed after saving it	Its showing Error of- Bad Response for Update Folder API But Folder's name is changed to the New Name after refreshing the Page	FAIL	Bug 4	Shivam Aggarwal

Fig 10.2 Manual Test sheet of TriPed (Re-Testing)

10.3 Automation Testing of TriPed – Digital Drawer

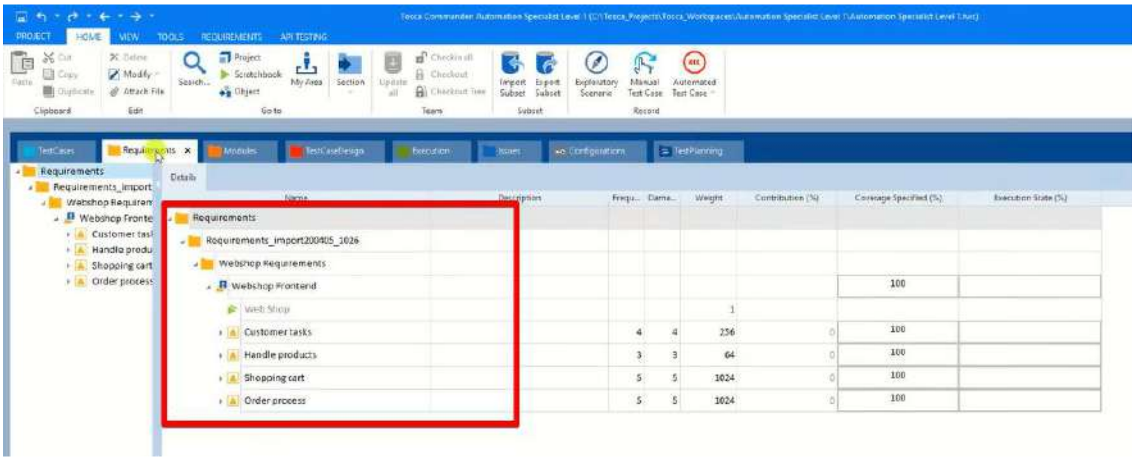


Tosca Commander: Automation Specialist Level 1 (C:\Tosca_Projects\Tosca_Workspaces\Automation Specialist Level 1\Aut

- TestCases
  - *** Recovery Scenarios ***
    - CleanUp Scenario
  - Test Case 1
  - Library
  - Test Case 2
  - TestCase 3
  - TestCase 4
  - TestCase 5
  - Addtional Excersises

- TestCases
  - *** Recovery Scenarios ***
  - Test Case 1
  - Library
  - Test Case 2
  - TestCase 3
  - TestCase 4
  - TestCase 5
  - Addtional Excersises

Fig 10.3 TOSCA Test Cases Page

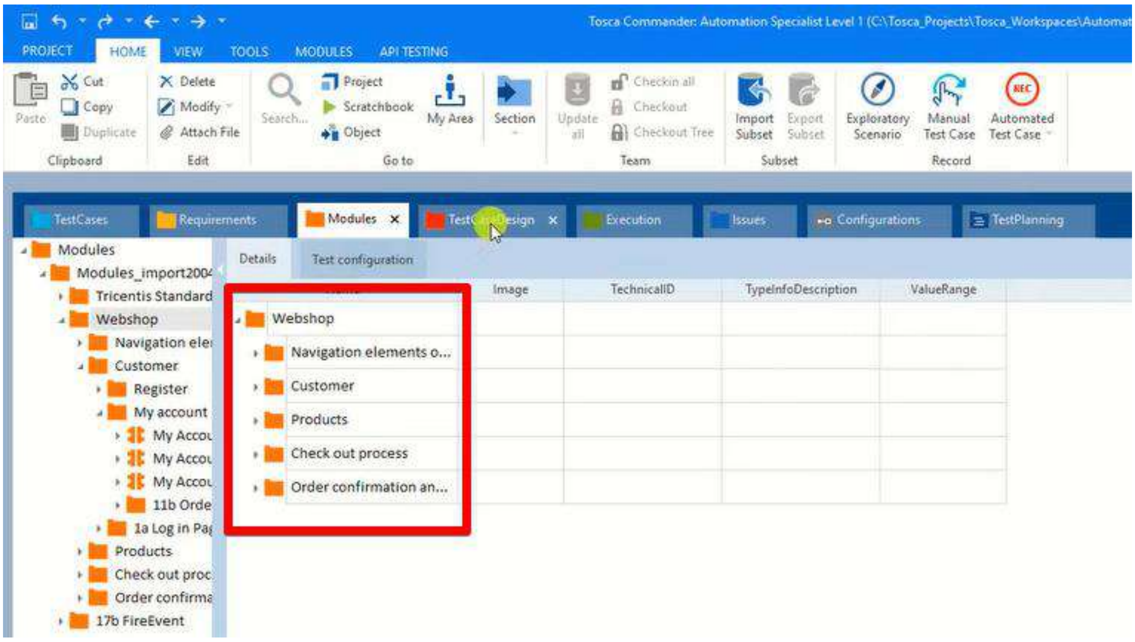


Tosca Commander: Automation Specialist Level 1 (C:\Tosca_Projects\Tosca_Workspaces\Automation Specialist Level 1\Automation Specialist Level 1.tws)

- Requirements
  - Requirements_import
    - Webshop Requiren
      - Webshop Fronte
        - Customer tasl
        - Handle produ
        - Shopping cart
        - Order process

Name	Description	Frequ...	Dama...	Weight	Contribution (%)	Coverage Specified (%)	Execution State (%)
Requirements							
Requirements_import200405_1026							
Webshop Requirements							
Webshop Frontend						100	
Web Shop				1			
Customer tasks		4	4	256	0	100	
Handle products		3	3	64	0	100	
Shopping cart		5	5	1024	0	100	
Order process		5	5	1024	0	100	

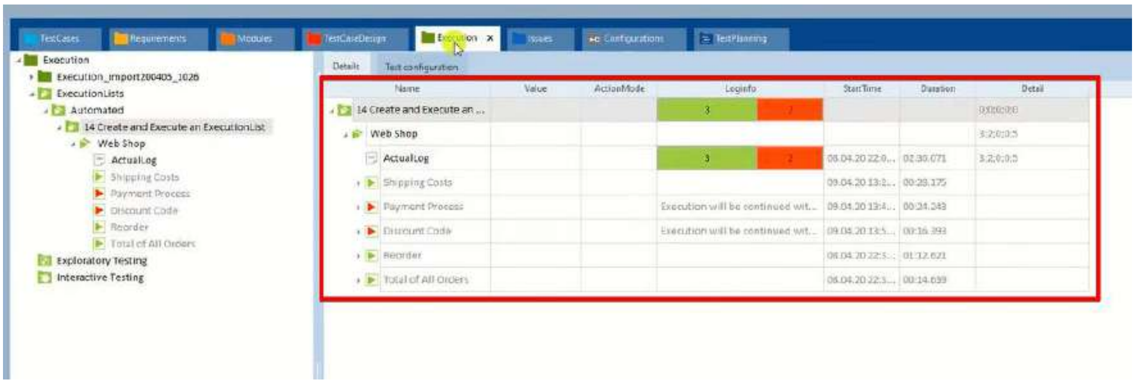
Fig 10.4 TOSCA Requirements Page



- Modules
  - Modules_import2004
    - Tricentis Standard
    - Webshop
      - Navigation ele
      - Customer
        - Register
        - My account
          - My Accou
          - My Accou
          - My Accou
          - 11b Orde
        - 1a Log in Pa
      - Products
      - Check out proc
      - Order confirma
    - 17b FireEvent

	Image	TechnicalID	TypeInfoDescription	ValueRange
Webshop				
Navigation elements o...				
Customer				
Products				
Check out process				
Order confirmation an...				

Fig 10.5 TOSCA Modules Page



- Execution
  - Execution_import200405_1026
  - ExecutionLists
    - Automated
      - 14 Create and Execute an ExecutionList
        - Web Shop
          - ActualLog
          - Shipping Costs
          - Payment Process
          - Discount Code
          - Reorder
          - Total of All Orders
  - Exploratory Testing
  - Interactive Testing

Name	Value	ActionMode	Loginfo	StartTime	Duration	Detail
14 Create and Execute an ...			🟩 3 🟥 2			0:0:0:0:0
Web Shop						3:2:0:0:5
ActualLog			🟩 3 🟥 2	08.04.20 22:0...	02:30.071	3:2:0:0:5
Shipping Costs				09.04.20 13:2...	00:28.175	
Payment Process			Execution will be continued wit...	09.04.20 13:4...	00:24.243	
Discount Code			Execution will be continued wit...	09.04.20 13:5...	00:16.393	
Reorder				08.04.20 22:3...	01:12.621	
Total of All Orders				08.04.20 22:3...	00:14.659	

Fig 10.6 TOSCA Execution Page

CHAPTER 11

CONCLUSION

A software project means a lot of experience. We learned a lot through this project. This project has sharpened my concepts, learned new techniques and the software-hardware interface. We learned a lot about different documentation. Now I have much wider knowledge of the features **Salesforce** and put into practice various Salesforce methods that learnt last semester.

Through this project I learned how to perform manual & automation testing that how we test the application, how to work on Salesforce administration and Learned How to Create, Objects, Create Lookup on it, Setting Permission Set to Users and many more with help of our project Mentors.

CHAPTER 12

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Edition - 1st Edition
Publisher: Springer, Cham
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Research paper from: School of Information Science and Technology, Zhejiang Sci-Tech University, Hangzhou 310019, Zhejiang, China
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https://ebooks.wileyindia.com/pdfreader/software-testing)

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Published: January 2013
https://www.researchgate.net/publication/315743382_Selecting_the_Right_CRM_System

[9] Zohra Ding (Software Bug Localization Based on Key Range Invariants)
Research paper from: School of Information Science and Technology, Hangzhou 310019, Zhejiang, China
https://link.springer.com/content/pdf/10.1007%2F978-3-030-04272-1_2.pdf

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https://selab.netlab.uky.edu/homepage/sw-test-roadmap-bertolino.pdf

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