**1. Purpose of the document**

This document is to show the test approach for Church financial recordkeeping. This document sets the scope of various tests to be conducted, the activities to be completed, the general resources required and the methods and processes to be used to test before release of a deliverable.

**2. Overview of the document**

In the section 3, we described testing strategies. Section 4 describes testing techniques.  
Section 5 describes test cases schedule. Section 6 lists the test cases. Section 7 shows the test results.

**3. Testing strategy**

Testing strategy is an outline that describes the process of testing performed on software after its implantation. There are various stages in testing software, from each module to the whole integrated system.

**3.1. Unit testing**

The purpose of Unit testing is to discover any incorrect, insufficient or extraneous code. After each module is developed, it is tested by the programmers (Sapna) for its functionality and if there are any bugs in the code. It is the initial stage of testing software.

**3.2. Integration testing**

Integration testing is a software testing methodology used to check whether there is any deviation from the original functionality when different modules are integrated, and if there are any interface defects. Components are tested as a single group or organized in an iterative manner. After the integration testing has been performed on the modules, then the testing team can forward to system testing.

**3.3. System testing**

Once the system has been completed and the integration testing is performed, the software is put in place into the working environment and a “system test” is applied. In this phase the system interacts with actual user input and the complete database.

**3.4. Alpha testing**

The team that conducts the alpha test is often an independent test team, perhaps made up of potential users/customers. Alpha testing involves simulating a real user environment by carrying out tasks and operations that the actual users might perform.

**3.5. Regression testing**

Regression testing is the process of testing changes to computer programs to make sure that the older programming still works with the new changes. Regression testing is a normal part of the program development process and, in larger companies, is done by code testing specialists. Test department coders develop code test scenarios and exercises that will test new units of code after they have been written.

**3.6. Testing process**

The following diagram shows the testing process we have followed in testing Church Financial Recordkeeping application.

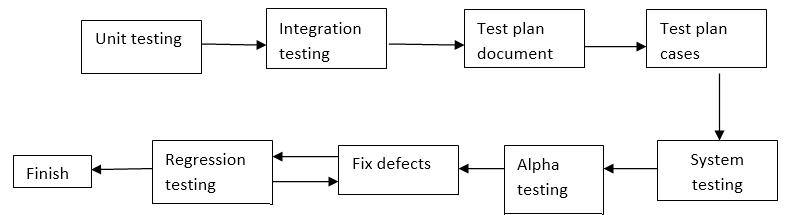


Fig 1: Testing process

**4. Testing techniques**

These are testing methods performed in testing strategies. In this section we have described the testing methods we have performed.

**4.1. Path testing:**

Path testing is a testing technique for finding all possible paths through the control flow graph of program. Testing each path at least once is a typical test strategy, but for much real software complete path test coverage would require an impracticability large test run/time. Path testing almost always requires more test runs than either branch testing or statement testing. We have determined there 8 paths in whole system and 2 paths in each module.

**4.2. Equivalence partitioning:**

 Equivalence partitioning is a software testing technique that divides the input data of a software unit into partitions of equivalent data from which test cases can be derived. In principle, test cases are designed to cover each partition at least once. This technique tries to define test cases that uncover classes of errors, thereby reducing the total number of test cases that must be developed. An advantage of this approach is reduction in the time required for testing software due to lesser number of test cases.

Equivalence partitioning is typically applied to the inputs of a tested component, but may be applied to the outputs in rare cases. The equivalence partitions are usually derived from the requirements specification for input attributes that influence the processing of the test object.

The equivalence classes in our project are login data, fund amount, fund number for a specific type of fund, from date and to date in the report form should be in chronically ordered.

**4.3. Use case testing:**

Use case testingis a technique that helps us identify test cases that exercise the whole system on a transaction by transaction basis from start to finish. A use case is a description of a particular use of the system by an actor (a user of the system). Each use case describes the interactions the actor has with the system in order to achieve a specific task. Actors are generally people but they may also be other systems.

Use cases are a sequence of steps that describe the interactions between the actor and the system. Use cases are defined in terms of the actor, not the system, describing what the actor does and what the actor sees rather than what inputs the system expects and what the system’s outputs.

**5. Test schedule**

The testing is divided into phases and scheduled as below:

The unit testing was done soon after each module was ready. After developing the whole system, we have taken 2 days to perform unit testing. After each module is tested, they are integrated and integration testing is done 4 days. The whole system is ready, and we have performed alpha testing in 1 day. We have found some issues and we worked on fixing the defects for 1 day. After everything done properly, we performed regression testing for 2 days. The whole system testing took 2 days.

**6. Test cases**

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| Test Name | Test ID | Steps Performed | Expected Result | Actual Result |
| **Login** | LG 001 | Input username: “wutrich”, password: “secretary” and click login | Logins Successfully and View member page gets displayed | Logins Successfully and View member page is displayed and Member, Fund, Donation, Report tabs are seen at the top |
| LG 002 | Input username : “baduser”, password: “badpswd” and click login | Error message should be generated showing, to enter valid credentials | Displays message as, please enter correct username and password |
| LG 003 | Input username: “wutrich”, password: “badpswd” and click login | Error message should be generated showing , to enter valid credentials | Displays message as, please enter correct username and password |
| LG 004 | Input username: “baduser”, password: “secretary” and click login | Error message should be generated showing , to enter valid credentials | Displays message as, please enter correct username and password |
| LG 005 | Leave username, password fields blank and click login | Error message should be generated showing , all fields are mandatory | Displays message as, username and password fields are mandatory |
| LG 006 | Leave username field blank ,enter password: “secretary” and click login | Error message should be generated showing username field is mandatory | Displays message as, password field is mandatory |

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|  | LG 007 | Enter username: “wutrich” , leave password field blank click login | Error message should be generated showing password field is mandatory | Displays message as, username field is mandatory |
| LG 008 | Click on forgot password link | Pointer able to click on forgot password link and message showing, contact admin for help | A dialogue box opens showing, please contact admin 94033776034 for your query |
| **Add**  **Member** | Add 001 | Click on add member tab | Add member page should be displayed | Add member page is displayed showing all the user details fields |
| Add 002 | Do the following and click save button  a)Input firstname: “Kranthi”, lastname: “Paladugu”, city: “dallas”  b)Input zipcode: “76308”, envelope no.: “123”  c)Input Address: “4700,Taft Blvd Apt #162” and from the drop menu select state: “texas” | Member should added successfully | A message is displayed showing, member added successfully |
| Add 003 | Input firstname: “kranthi kumar”  (OR)  firstname: 123@#3 | Error message should be generated showing the instruction on how to input the firstname field | A message is displayed showing, enter the firstname for ex. Rachel |
|  | Add 004 | Input lastname: “paladugu kranthi”  (OR)  lastname: “123@%” | Error message should be generated showing the instruction on how to input the lastname field | A message is displayed showing, enter the lastname for ex. stewart |
| Add 005 | Input city : “Wichita falls” (OR) city:“3@!” | Error message should be generated showing the instruction on how to input the city field | A message is displayed showing, enter the city for ex. dallas |
| Add 006 | Input zipcode : “s@!”  (OR)  Zipcode: “763.2345” | Error message should be generated showing the instruction on how to input the zipcode field | A message is displayed showing, please enter only numbers |
| Add 007 | Input envelope no.: “asd!@”  (OR)  Envelope no. : “123.456” | Error message should be generated showing the instruction on how to input the envelope No. field | A message is displayed showing, please enter only numbers |
| Add 008 | Click on any one of the tabs located at the top of the page (fund or donation or report) | Page should navigate to the respective tab page | Page navigates to the page that is clicked |

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|  | | Add 009 | Leave firstname, lastname, address, city, state, zipcode, envelop no. fields blank and click on save button | | Error message displays stating, all fields are required | | A message is displayed showing, all \* fields are mandatory |
| Add 010 | Enter firstname: “kranthi”, lastname: “paladugu”, address: “taft blvd”, state: “texas”, zipcode: “76308”, envelope no.: “1234” and click on clear button | | All fields should be cleared | | Text in all the fields is erased |
| Add 011 | Click on view grid button | | Should display the grid page after confirming | | A dialogue box appears showing, Are you sure you want to view the grid. If user clicks ok button then it navigates to view member page and displays the grid or if user clicks cancel then it stays on the add member page |
| **View Member** | | View 001 | Click on view member tab | | View member page should be displayed | | View member page is displayed showing all the members with their details in grid those are added successfully and an edit icon, delete icon is present beside each member |
| View 002 | Do the following and click on search icon  a)enter member name: “kranthi”, city: “dallas”, state: “texas” , envelope no.: “123” in the box located below them | | Should display all the members details of those that are matching with keywords entered in the boxes | | Displaying all the members details in the grid that are matched with the member name: “kranthi”, city: “dallas”, state: “texas” , envelope no.: “123”. If not matched with keywords it will display, no records to display |
| View 003 | Leave member name, city, state, envelope no. fields blank and click on search icon | | An error message should appear showing to enter the texts in boxes | | An error message is displayed showing, please enter search text |
| View 004 | Click on refresh icon | | Refreshes the page by clearing any text in the fields and should show the grid box | | Shows the grid box with member details by clearing any texts in the field |
| View 005 | Click on edit icon | | An update member page is to be displayed | | Displays update member page and allows to edit the details of the members |
| View 006 | Change any details of the member if required as per guidelines shown for add member and click update button | | A message should appear showing that member information is successfully updated | | It displays a message as, member updated successfully |
|  | View 007 | | | Click on delete icon | Should confirm and delete the particular member information | A dialogue box appears showing, are you sure you want to delete? If clicked ok, member information gets deleted or if clicked cancel, it skips the delete operation and grid table is shown | | |
|  | View 008 | | | Click on any one of the tabs located at the top of the page (member or donation or report) | Page should navigate to the respective tab page | Page navigates to the page that is clicked | | |
| **Add**  **Fund** | AF 001 | | | Click on add fund tab | Add fund page should be displayed | Add fund page is displayed showing fund name field | | |
| AF 002 | | | Input fund name: “general fund” and click on save button | Fund name should be created successfully | A message appears saying, fund name created successfully | | |
| AF 003 | | | Input fund name : “123@#$” and click save button | An error message should be generated showing the instruction on how to input the fund name field | It’s showing a message as, enter fund name for ex. General fund | | |
| AF 004 | | | Leave fund name blank and click on save button | An error message should be generated saying that all fields are required | An error message is displayed saying, all \* fields are mandatory | | |
| AF 005 | | | enter fund name: “general fund” and click on clear button | Fund name box should be cleared | Text in the fund name field is erased | | |
|  | AF 006 | | | Click on view grid button | Should display the grid page after confirming | | A dialogue box appears showing, Are you sure you want to view the grid. If user clicks ok button then it navigates to view fund page and displays the grid or if user clicks cancel then it stays on the add fund page | |
| **View**  **Fund** | VF 001 | | | Click on view fund tab | View fund page should be displayed | | View fund page is displayed showing the fund number and fund name that are added successfully and an edit icon, delete icon is present beside each fund name | |
| VF 002 | | | Do the following and click on search icon  a)enter fund number: “2” and fund name: “general fund” in the boxes located below them | Should display all the fund names ad fund number details of those that are matching with keywords entered in the boxes | | Displays all the members details in the grid that are matched with fund number: “2” and fund name: “general fund”. If not matched with keywords it will display, no records to display | |
|  | VF 003 | | | Leave all the fields blank and click on search icon | An error message should appear showing to enter the texts in boxes | | An error message is displayed showing, please enter search text | |
| VF 004 | | | Click on refresh icon | Refreshes the page by clearing any text in the fields and should show the grid box | | Shows the grid box with fund details by clearing any texts in the field | |
| VF 005 | | | Click on edit icon | An update fund page is to be displayed | | Displays update fund page and allows to edit the details of the fund name | |
| VF 006 | | | Change any details of the fund name if required as per guidelines shown for add fund and click update button | A message should appear showing that fund name is successfully updated | | Displays a message showing, fund name successfully updated | |

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|  | VF 007 | Click on delete icon | Should confirm and delete the particular fund information | A dialogue box appears showing, are you sure you want to delete? If clicked ok ,fund information gets deleted or if clicked cancel, it skips the delete operation and grid table is shown |
| VF 008 | Click on any one of the tabs located at the top of the page (member or donation or report) | Page should navigate to the respective tab page | Page navigates to the page that is clicked |
| **Add**  **Donation** | AD 001 | Click on add donation tab | Create new donation page should be displayed | Create new donation page is displayed showing all the donation details fields |
| AD 002 | Do the following and click save button. a)enter amount: “20” (or) amount: “20.12”  b) Select envelope no.: “123”,fund name: “general fund”, money type: “check” from the menu.  c) Select date: “12/23/2014” by clicking the date calendar icon. | Donation should be created successfully | A message is displayed showing, donation added successfully |
|  | AD 003 | Input amount : “123@#$abcd” | Error message should be generated showing the instruction on how to input the amount field | A message is displayed as, please enter numbers only |
| ADD 004 | Leave envelope no., money type, amount ,fields blank and click on save button | Error message displays stating, all fields are required | A message is displayed showing, all \* fields are mandatory |
| ADD 005 | enter amount: “20”, envelope no.: “123”, fund name: “general fund”, money type: “check” from the menu and click on clear button | All fields should be cleared | Text in the fields is getting erased |
| ADD 006 | Click on view grid button | Should display the grid page after confirming | A dialogue box appears showing, Are you sure you want to view the grid. If user clicks ok button then it navigates to view donation page and displays the grid or if user clicks cancel, then it stays on the create new donation page |
| A007 | Click on any one of the tabs located at the top of the page (member or fund or report) | Page should navigate to the respective tab page | Page navigates to the page that is clicked |

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| **View**  **Donation** | VD 001 | Click on view donations tab | View donations page should be displayed | View donation page is displayed showing the envelope no., member name, fund type, money type, amount that are added successfully and an edit icon, delete icon is present beside each donation |
| VD 002 | Do the following and click on search icon  a)enter member name: “kranthi”, fund type: “general fund”, money type: “check”, amount: “20”, envelope no.: “123” in the boxes located below them | Should display all the donation details of those that are matching with keywords entered in the boxes | Displays all the donation details in the grid that are matched with member name: “kranthi”, fund type: “general fund”, money type: “check”, amount: “20”, envelope no.: “123”. If not matched with keywords it will display, no records to display |
| VD 003 | Leave member name, fund type, money type, check, amount, envelope no.: fields blank in the boxes located below them and click on search icon | An error message should appear showing to enter the texts in boxes | An error message is displayed showing, please enter search text |

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|  | VD 004 | Click on refresh icon | Refreshes the page by clearing any text in the fields and should show the grid box | Shows the grid box with donation details by clearing any texts in the field |
| VD 005 | Click on edit icon | An update donation page is to be displayed | An update donation page is displayed |
| VD 006 | Click on delete icon | Should confirm and delete the particular donation information | A dialogue box appears showing, are you sure you want to delete? If clicked ok, donation information gets deleted or if clicked cancel, it skips the delete operation and grid table is shown |
| VD 007 | Click on any one of the tabs located at the top of the page (member or fund or report) | Page should navigate to the respective tab page | P age navigates to the page that is clicked |
| **Report** | RT 001 | Click on reports tab | Reports page should be displayed | Reports page is displayed showing the from date, to date, member name fileds |
| RT 002 | Input the from date: “12/12/2015”, to date: “12/23/2015” from date calendar, leave the member name field blank and click view | If the information containing all the donations of all the members for that particular period is available then it’s to be shown in the grid else no | If available, displays the information of the donations made by members from“12/12/2015” to “12/23/2015”in the grid or else it displays no records to display |
| RT 003 | Input the from date :”12/12/2015”, to date: “12/23/2015” from date calendar, member name: “kranthi” and click view | If the information containing the donations made by that particular member for that particular period is available then it’s to be shown in the grid else no | If available, displays the information of the donations made by “kranthi” from“12/12/2015” to “12/23/2015” in the grid or else it displays no records to display |
| RT 004 | Leave dates field blank and click on view button | An error message should appear showing to select the time period | An error message is displayed saying, select both dates |
| RT 005 | Input the from date: “12/12/2015”, to date: “12/23/2015” from date calendar, member name: “kranthi” and click on clear button | All fields should be cleared | Text in the date and member name fields is being erased |
| RT 006 | Click on any one of the tabs located at the top of the page (member or fund or donation) | Page should navigate to the respective tab page | P age navigates to the page that is clicked |
| RT 007 | Input the from date: “12/12/2015”, to date: “12/23/2015” from date calendar, leave the member name field blank and click view and click print icon | If the information containing all the donations of all the members for that particular period is available then it’s to be shown in the grid and we should be able print all that information or else we should be able to print an empty report | If available, displays the information of the donations made by members from “12/12/2015” to “12/23/2015” in the grid and when we print the information it shows the record of all the donations or else if there is no record to display the printed information contains no information except the donation fields |
| RT 008 | Input the from date: “12/212/2015”, to date: “12/ 23/2015” from date calendar, member name: “kranthi” and click view and print | If the information containing all the donations of that members for that particular period is available then it’s to be shown in the grid and we should be able print all the donation information of that particular member or else we should be able to print an empty report | If available, displays the info of the donations made by “kranthi” from“12/12/2015” to “12/23/2015” in the grid and when we print the info it shows the record of donations or else if there is no record to display report shows no information except the donation fields |

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| **Logout** | LG 001 | Click on logout button located at the top of the page | Should get logged out from the application | Logs out of the application and login page is displayed |

**7. Testing results**

This section shows the testing of results in each testing strategy.

**7.1. Unit test results:**

In the unit testing we have recorded the errors and fixed them. We have done the testing again and all the modules are working properly.

**7.2. Integration test result:**

Initially while integrating front-end with back-end we had connection problem. We have worked on it and resolved it. The navigation from one page to other page is working properly.

**7.3. System test result:**

After the integration is done successfully, the whole system was tested and the results were satisfactory.