**TESTING**

**Introduction**

Testing is the phase where the error remaining from the earlier phase also must be detected. It is the process of examining something with the intension of finding errors. Testing a program consists of providing the program with a set of test inputs and observing if the program as expected .If the program fails, then the conditions under which a failure occur are noted for debugging and corrections.

**Level of Testing:**

Before the implementation of the system, testing has been carried out thoroughly to eliminate any bugs, which may be present.The test been conducted based on some level of testing.

They are as follows:

* **Unit Testing**
* **Code walkthrough**
* **Integrated Testing**
* **Validation Testing**
* **Output Testing**
* **System Testing**

**Unit Testing:**

Testing at the unit level is very much essential because the error is accurate. Unit testing is testing of different units or modules of a system in isolation. Testing is done to check whether each module in the software works properly so that it gives desired outputs to the given inputs.

**Code walkthrough:**

In this phase of testing the code is thoroughly checked for discrepancies that may occur in the code such as redundancy of code, deviations in the naming convention etc.

**Validation Testing:**

At the culmination of the integration testing the software was completely assembled as a package , interfacing errors have been uncovered and corrected and a final series of software validation testing begun.Here we test the system in a manner that can be reasonably expected by the customer, the system was tested against system requirement specification.

**Integrated Testing:**

In integrated testing all the code modules are put together and tested for desired outputs. The modules unit tested are integrated and tested.All the modules are combined in this testing step. Then the entire program is tested as a whole.

The integrated testing is carried out using integrated test plans prepared in the design phase of the system development as a guide. All the errors found in the system are corrected for the next testing steps. The module which are tested show expected result.

**Output Testing:**

Feeding sample valid input image and then comparing the ratio obtained in the compressed output image with the expected ratio conduct it. Correctness of the output depends on the input image.

**System Testing:**

In system testing entire system is tested as a whole with all forms,code, module and class modules.After the integrated testing the whole of the system is tested in different environments and it is found that the system has performed well without giving any runtime error. Hence after the testing is concluded that the system will work fine in all environments.

**Unit Test Specification for Login Form:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No** | **Test Condition** | **Expected Result** | **Test Result** |
| 1. | Valid user id and password is entered | Main form is displayed | As Expected |
| 2. | User id or password is invalid | Invalid user message box is displayed | As Expected |
| 3. | If User id or password is not entered | Enter the login details message box is displayed | As Expected |

**Unit Test Specifiction for Designation Form:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No** | **Test Condition** | **Expected Result** | **Test Result** |
| 1. | Enter the staff type | Staff type of a staff is updated | As Expected |
| 2. | Enter the designation | Designation of a staff is updated | As Expected |
| 3. | Click on save | Record is stored and displayed in grid | As Expected |
| 4. | Click on reset | All the fields are cleared | As Expected |
| 5. | Designation or staff type left blank | Enter the details message is displayed | As Expected |
| 6. | Designation grid view | Staff type and designation gets updated in the grid with delete and edit option | As Expected |
| 7. | If edit link is clicked in the grid | Respective record is displayed and updated | As Expected |
| 8. | If delete link is clicked in the grid | Confirmation message box is displayed.On confirmation, record is deleted | As Expected |

**Unit Test Specification for Leaves Form:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No** | **Test Condition** | **Expected Result** | **Test Result** |
| 1. | Leave code is entered | It is updated from leaves table | As Expected |
| 2. | Leave type is entered | Type of leaves are displayed | As expected |
| 3. | No of leaves | No of leaves present is displayed | As Expected |
| 4. | Details are not entered | Enter the details message box is displayed | As Expected |
| 5. | Click on save | Record is stored and displayed in grid | As Expected |
| 6. | Click on reset | All the fields are cleared | As Expected |
| 7. | Leaves grid view | Leave code,type and no of leaves gets updated in the grid | As Expected |
| 8. | If edit link is clicked in the grid | Respective record is displayed and updated | As Expected |
| 9. | If delete link is clicked in the grid | Confirmation message box is displayed.On confirmation,record is deleted | As Expected |

**Unit Test Specification for LeaveRequest Form:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No** | **Test Condition** | **Expected Result** | **Test Result** |
| 1. | Staff no is entered | It is updated from staff table | As Expected |
| 2. | Leave type is entered | Type of leave is displayed | As expected |
| 3. | Date | Date on which request is sent | As Expected |
| 4. | From date | From date of the leave request is given | As Expected |
| 5. | To date | To date of the leave request is given | As Expected |
| 6. | No of days | It is calculated by the difference of to date and from date | As Expected |
| 7. | Purpose | Purpose of the leave is mentioned | As Expected |
| 8. | Status | Status of the leave is displayed | As Expected |
| 9. | Request | Leave request is sent | As Expected |
| 10. | Reset | All the fields are cleared | As Expected |
| 11. | Cancel | Leave request is cancelled | As Expected |
| 12. | Details are not entered | Enter the details message box is displayed | As Expected |
| 13. | If details entered are valid | Record is stored and displayed in the grid | As Expected |

**Unit Test Specification for Approve Form:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No** | **Test Condition** | **Expected Result** | **Test Result** |
| 1. | Approve is clicked | The leave request gets approved | As Expected |
| 2. | Reject is clicked | Leave request gets rejected | As Expected |
| 3. | Ok button is clicked | The option clicked gets updated in the viewleaverequest grid | As Expected |

**Unit Test Specification for Holiday Form:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No** | **Test Condition** | **Expected Result** | **Test Result** |
| 1. | Date is displayed | It is obtained from date time picker | As Expected |
| 2. | Holiday is displayed | Name of the holiday is displayed | As expected |
| 3. | Save is clicked | It gets updated to the form holiday | As Expected |
| 4. | Reset is clicked | It resets the data entered | As Expected |
| 5. | Holiday grid view | Date and holiday details are updated in the grid | As Expected |

**Unit Test Specification for Department Form:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No** | **Test Condition** | **Expected Result** | **Test Result** |
| 1. | Department Code is entered | Department code of the department is updated | As Expected |
| 2. | Department name is entered | Department name of the department is updated | As expected |
| 3. | Details are not entered | Enter the details message box is displayed | As Expected |
| 4. | Save is clicked | Record is stored and displayed in grid | As Expected |
| 5. | Reset is clicked | All the fields are cleared | As Expected |
| 6. | Department details grid view | Department code and name are updated in the grid and we have an option of editing and deleting the updates | As Expected |
| 7. | If edit link is clicked in the grid | Respective record is displayed and updated | As Expected |
| 8. | If delete link is clicked in the grid | Confirmation message box is displayed.On confirmation,record is deleted | As Expected |

**Unit Test Specification for Change Password Form:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No** | **Test Condition** | **Expected Result** | **Test Result** |
| 1. | Staff no is entered | It is updated from the staff table | As Expected |
| 2. | Old password is entered | It is updated from change password table | As expected |
| 3. | New password is entered | It is updated from change password table | As Expected |
| 4. | Confirm password is entered | New password is re-entered | As Expected |
| 5. | Save Changes is clicked | Record is stored and password changed successfully message box is displayed | As Expected |
| 6. | Details are not entered | Enter the details message box is displayed | As Expected |
| 7. | Invalid old or new password | Invalid password message box is displayed | As Expected |
| 8. | Invalid confirm password | Confirm the password message box is displayed | As Expected |

**Unit Test Specification for CurrentYear Form:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No** | **Test Condition** | **Expected Result** | **Test Result** |
| 1. | From | It is updated to currentyear form | As Expected |
| 2. | Month | Month is entered to currentyear form | As expected |
| 3. | Year | Year is entered to currentyear form | As Expected |
| 4. | Save is clicked | Data gets saved in currentyear form | As Expected |
| 5. | Reset is clicked | Data entered gets reset | As Expected |

**Unit Test Specification for Branch Form:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No** | **Test Condition** | **Expected Result** | **Test Result** |
| 1. | Branch code | Branch code of the branch is updated | As Expected |
| 2. | Branch name | Branch name of the branch is updated | As expected |
| 3. | Save is clicked | Data gets saved in branch form | As Expected |
| 4. | Reset is clicked | Data entered gets reset | As Expected |
| 5. | Branch details grid view | Branch code and branch name is updated in the grid having delete and edit options | As Expected |

**Unit Test Specification for Staff Form:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No** | **Test Condition** | **Expected Result** | **Test Result** |
| 1. | Staff No | Staff no of the staff is updated | As Expected |
| 2. | Staff Name | Staff name of the staff is updated | As expected |
| 3. | Address | Address of the staff is updated | As Expected |
| 4. | Land line | Land line of the staff is updated | As Expected |
| 5. | Mobile | Mobile no of the staff is updated | As Expected |
| 6. | Date of join | Date of join of the staff is updated | As Expected |
| 7. | Designation | Designation is updated from the designation table | As Expected |
| 8. | Branch | Branch of the staff is updated from branch table | As expected |
| 9. | Department | Department of the staff is updated from department table | As Expected |
| 10. | Save is clicked | Details gets updated to the staff table | As Expected |
| 11. | Reset is clicked | Data gets reset | As Expected |
| 12. | Staff grid view | Staffno,Staffname ,and all the above details gets updated along with edit and delete options | As Expected |

**Unit Test Specification for User Form:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No** | **Test Condition** | **Expected Result** | **Test Result** |
| 1. | Staff no | Staff no of the staff is updated | As Expected |
| 2. | Password | Password is updated | As expected |
| 3. | CreateUser is clicked | User is created | As Expected |
| 4. | Reset is clicked | Data entered gets reset | As Expected |
| 5. | User details grid view | Staff no and password gets updated | As Expected |

**Unit Test Specification for View Leaverequest Form:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No** | **Test Condition** | **Expected Result** | **Test Result** |
| 1. | Search by | It searches the leaves requested on the basis of date of request,staffno and status | As Expected |
| 2. | Date of request | Displays when the leave was requested | As expected |
| 3. | Staff no | Displays the staff no who has requested the leave | As Expected |
| 4. | Status | Displays the status of the request | As Expected |
| 5. | Viewleaverequest grid view | Staffno,leave type ,etc is updated in the grid | As Expected |

**Unit Test Specification for Master Form:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No** | **Test Condition** | **Expected Result** | **Test Result** |
| 1. | Bank Information | Gives details of the bank | As Expected |
| 2. | Staff | Gives details of the staff forms | As expected |
| 3. | Leaves | Gives details of the leaves forms | As Expected |

**Unit Test Specification for Staff Pay Form:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No** | **Test Condition** | **Expected Result** | **Test Result** |
| 1. | Staff No | Staff no of the staff is updated | As Expected |
| 2. | Basic Pay | Basic pay of the staff is given | As expected |
| 3. | Special Pay | Special pay of the staff is given | As Expected |
| 4. | DA | Dearness allowance of the staff is given | As Expected |
| 5. | HRA | House Rent Allowance of the staff is given | As Expected |
| 6. | FPA | Fixed Personal Allowance of the staff is given | As Expected |
| 7. | Convayence | Convayence of staff is calculated | As Expected |
| 8. | CCA | City Compensatory Allowance of staff is entered | As expected |
| 9. | Wash Allowance | Wash allowance of staff is entered | As Expected |
| 10. | Other Earnings | Other earnings of staff is calculated | As Expected |
| 11. | Earning arrears | Earning arrears of staff is entered | As Expected |
| 12. | Official Pay | Officiating payments of the staff is entered | As Expected |
| 13. | Hill and fuel | Fuel expenses are entered | As Expected |
| 14. | Gross | Gross of the staff is calculated | As Expected |
| 15. | PF Contribution | Provident Fund contribution of the staff is deducted | As Expected |
| 16. | V.P.F | Voluntary Provident Fund of staff is deducted | As Expected |
| 17. | Staff Insurance | Insurance of staff is deducted | As Expected |
| 18. | P.L.I.C | Policy deductions | As Expected |
| 19. | Family Welfare | Family welfare expenses are deducted | As Expected |
| 20. | Profession Tax | Profession tax of staff is deducted | As Expected |
| 21. | Union Fees | Union fees of the staff is deducted | As Expected |
| 22. | Income tax | Income tax of the staff is deducted | As Expected |
| 23. | Exgratia salary | Exgratia salary of the staff is deducted | As Expected |
| 24. | PF Arrears | Provident Fund Arrears of staff is deducted | As Expected |
| 25. | VBEC1 | Union fees of staff is deducted | As Expected |
| 26. | VBEC2 | Union fees of staff is deducted | As Expected |
| 27. | VBEC3 | Union fees of staff is deducted | As Expected |
| 28. | HR Deduction | HR expenses is deducted | As Expected |
| 29. | Furniture Deduction | Furniture deductions are done | As Expected |
| 30. | Petrol and oil | Petrol and oil expenses are deducted | As Expected |
| 31. | Other br cr | Other expenses | As Expected |
| 32. | Suspense Pay | Suspense pay is deducted | As Expected |
| 33. | Excess Rent | Excess rent of staff is deducted | As Expected |
| 34. | Other deduction | Other deductions are done | As Expected |
| 35. | PF loan | Provident Fund loan of staff is deducted | As Expected |
| 36. | PRO loan | Pronote loan of staff is deducted | As Expected |
| 37. | INT FLN | Interest free loan of staff is dedeucted | As Expected |
| 38. | SPL loan | Special loan of staff is deducted | As Expected |
| 39. | SEC loan | Secured loan is deducted | As Expected |
| 40. | LMV loan | Loan on MotorVehicle is deducted | As Expected |
| 41. | HSG loan | Housing loan is deduced | As Expected |
| 42. | MRTG loan | Mortgage loan is deducted | As Expected |
| 43. | SC/ST fee | Scheduled caste fee is deducted | As Expected |
| 44. | Deductions | Total deductions are calculated | As Expected |

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