

## References:

- [1] Accelerated Edge Incorporated 2012, 'How to Select Business Intelligence Query Tools', [Online], Available from: <http://www.databi.com/downloads/bitools.pdf> [Accessed 5 December 2012].
- [2] Ambler, S.W. 2011, 'A RUP-based approach to developing a data warehouse- Part 2: Building the data warehouse, one iteration at a time', *IBM* [online], Available from: <http://www.ibm.com/developerworks/rational/library/dec06/ambler/> [Accessed 26 December 2012].
- [3] Anon 2001, *Microsoft SQL Server 2005*, Microsoft Corporation, Washington, U.S.A.
- [4] Bongsik, S. 2004, 'A case of data warehousing project management' , [Online], Available from: [http://www.sciencedirect.com/science?\\_ob=ArticleURL&\\_udi=B6VD0-44JD5XG-2&\\_user=10&\\_rdoc=1&\\_fmt=&\\_orig=search&\\_sort=d&\\_view=c&\\_acct=C000050221&\\_version=1&\\_urlVersion=0&\\_userid=10&md5=fb65ac9b0f9005e1257f2d20d45d7162](http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6VD0-44JD5XG-2&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&_view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=fb65ac9b0f9005e1257f2d20d45d7162) [Accessed 07 January 2013].
- [5] Database corner 2008, *Microsoft SQL Server*, [Online], Available: [http://www.sqlserver.databasecorner.com/?refr=google&at=ms-sql-server&keyw=sql%20server&sc=c&adid=384859216&gclid=CKirgY2WsJECFRU\\_TAodiDm0Zg](http://www.sqlserver.databasecorner.com/?refr=google&at=ms-sql-server&keyw=sql%20server&sc=c&adid=384859216&gclid=CKirgY2WsJECFRU_TAodiDm0Zg) [Accessed 14 December 2012].
- [6] Do, T. N., n.d., 'Towards Simple, Easy to understand, as Interactive Decision Tree ALgorithm', [online], Available from: [http://www.gwu.edu/~icdrm/publications/PDF/ICDRM\\_USACEApril29.pdf](http://www.gwu.edu/~icdrm/publications/PDF/ICDRM_USACEApril29.pdf) [Accessed 25 December 2012].
- [7] Getz, A. 2006, 'Data Warehouses What are they and how will they benefit your organization?', [Online], Available from: <http://hosteddocs.ittoolbox.com/AG082807.pdf> [Accessed 07 January 2013].
- [8] [http://www.gwu.edu/~icdrm/publications/PDF/ICDRM\\_USACEApril29.pdf](http://www.gwu.edu/~icdrm/publications/PDF/ICDRM_USACEApril29.pdf) [Accessed 17 December 2012].
- [9] Information Builders, *BI Tools From Information Builders*, [Online], Available: <http://www.informationbuilders.com/bi-tools.html> [Accessed 5 January 2013].
- [10] Kersten, G. E., Mikolajuk, Z. and Yeh, A. 1999, 'Decision Making and Decision Support', [Online], Available from:

<http://interneg.concordia.ca/views/bodyfiles/paper/1999/05.pdf> [Accessed 11 December 2012].

- [11] Power, D. J., 2000, 'Supporting Business Decision-Making', [Online], Available from:  
<http://www.inta.gov.ar/bariloche/desarrollo/gesrural/trabajos/ssd/Bibliografia/SSD/Definiciones%20y%20aspectos%20generales/Supportin%20Business%20Decision-Making.pdf> [Accessed 12 December 2012].
- [12] Mora, M., Forgionne, G. A. & Gupta, J. D. 2003, *Decision Making Support Systems: Achievements, Trends and Challenges for the New Decade*, Idea Group Publishing, USA.
- [13] Laudon, K. C. & Laudon, J. P. 2006, *Management Information Systems*, 9<sup>th</sup>ed, Prentice-Hall, U.S.A.
- [14] Microsoft 2005, 'Hyundai Aims to Boost Quality and Reduce Costs with SQL Server 2005 Data Warehouse', *Microsoft SQL Server 2005 Customer Solution Case Study* [Online], Available from:  
<http://search.microsoft.com/results.aspx?mkt=en-US&setlang=en-US&q=Hyundai+Motor+company> [Accessed 08 December 2012].
- [15] Microsoft 2005, 'SQL Server 2005 Helps Swedish Tool Maker Gain Faster Reporting', *Microsoft SQL Server 2005 Customer Solution Case Study* [Online], Available from:  
<http://search.microsoft.com/results.aspx?q=Swedish+tool+maker&qsc0=0&SearchBtn0=Search&FORM=QBME1&l=1&mkt=en-US&PageType=99> [Accessed 27 December 2012].
- [16] Microsoft Corporation 2010, *Analysis Services Features*, [Online], Available: [http://msdn2.microsoft.com/en-us/library/aa216726\(SQL.80\).aspx](http://msdn2.microsoft.com/en-us/library/aa216726(SQL.80).aspx) [Accessed 17 December 2012].
- [17] Microsoft Corporation 2010, *Welcome to the MSDN Library*, [Online], Available: [http://msdn.microsoft.com/library/?url=/library/en-us/dnmda/html/odc\\_olapfaq.asp?frame=true](http://msdn.microsoft.com/library/?url=/library/en-us/dnmda/html/odc_olapfaq.asp?frame=true) [Accessed 21 December 2012].
- [18] ITS 2008, 'Operational Excellence Program: Service Level Management: Prioritization Model', [online], Available from:  
<http://www.its.state.nc.us/oep/documents/SLM%20Prioritization%20Model.pdf> [Accessed 12 December 2012].
- [19] Peng et al. n.d., 'An Implementation of ID3 – Decision Tree Learning Algorithm', [online], Available from:  
<http://web.arch.usyd.edu.au/~wpeng/DecisionTree2.pdf> [Accessed 04 January 2013].
- [20] Harrald et al. 2006, 'Review of Risk based prioritization/ Decision making methodologies for DAMS', [online], Available from:

[http://www.gwu.edu/~icdrm/publications/PDF/ICDRM\\_USACEApril29.pdf](http://www.gwu.edu/~icdrm/publications/PDF/ICDRM_USACEApril29.pdf)  
[Accessed 04 January 2013].

- [21] Rob, P. & Coronel, C. 1998, *Database Systems: Design, Implementation and management*, 3rd ed, Galgotia Publications (P) Ltd., India.
- [22] Sturn, J. 2005, *Data Warehousing with Microsoft SQL Server 7.0 Technical Refernce*, Microsoft Corporation, Washington, U.S.A.



University of Moratuwa, Sri Lanka.  
Electronic Theses & Dissertations  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)

## Appendix A

### Test Cases & Results

#### i) Unit Test Cases

Test Case No : 01		Test Case : Splash screen (frmSplash)		
Test No.	Test Item	Test Case Description	Expected Output/ Result	Actual Output/ Result
1.1	Splash screen	User does not need to click or enter anything	The Splash screen disappears in 20 seconds and Login screen (frm_login) opens	As expected
Test Case No : 02		Test Case : Login Screen (frm_login)		
Test No.	Test Item	Test Case Description	Expected Output/ Result	Actual Output/ Result
2.1	User authentication	Enter incorrect user name and password	Display error message "Invalid username or password, please try again"	As expected
2.2	User authentication	Enter incorrect user name and correct password	Display error message "Invalid username or password, please try again"	As expected
2.3	User authentication	Enter correct user name and incorrect password	Display error message "Invalid username or password, please try again"	As expected
2.4	User authentication	Enter correct user name and correct password	Redirect to the main screen depending on the user access level	As expected
2.5	User access Level	Login as Manager	Direct to the main screen as managerial level. Provide Managerial privileges	As expected
2.6	User access Level	Login as Administrator	Direct to the main screen as administration level. Provide Administrator privileges	As expected
2.7	User access Level	Login as Operator	Direct to the main screen as operational level. Provide Operator privileges	As expected
2.8	'Reset' button	On click of the reset button	Clear all the fields	As expected
2.9	'Cancel' button	On click of the Cancel button	Cancel login to the system and close the login form	As expected
Test Case No : 03		Test Case : Main Screen (main_MIRT)		

Test No.	Test Item	Test Case Description	Expected Output/ Result	Actual Output/ Result
3.1	'Home' icon	On click of the Home icon	Load the Home screen	As expected
3.2	'Help' icon	On click of the Help icon	Load the Help document	As expected
3.3	'Exit' icon	On click of the Exit icon	A message box appears asking to confirm the exit from the system	As expected
3.4	'Risk status' icon	On click of the Risk status icon	Load the Risk status screen	As expected

Test Case No : 04		Test Case : Dynamic Reports –screen (frmdynamic_reports)		
Test No.	Test Item	Test Case Description	Expected Output/ Result	Actual Output/ Result
4.1	'View Report' button	On click of the View Report button	Load the Dynamic report in the report loading area	As expected
4.2	PDF radio button	On selection of the PDF option	Save the dynamic report in PDF file format.	As expected
4.3	Excel radio button	On selection of the Excel option	Save the dynamic report in Excel file format.	As expected
4.4	Word radio button	On selection of the Word option	Save the dynamic report in Word file format.	As expected
4.5	HTML radio button	On selection of the HTML option	Save the dynamic report in HTML file format.	As expected
4.6	'Export' button	On click of the Export button	Save the report in a different selected location from the chosen format	As expected
4.7	Check boxes (criteria)	On selection of only one criteria (check box)	Display error message and request user to enter minimum 2 fields	As expected
4.8	Check boxes (criteria)	On selection of two or more than two criteria (check box)	Allow the user to move on to the next tab through clicking on 'Next' button.	As expected

Test Case No : 05		Test Case : User Account(frm_new_user)		
Test No.	Test Item	Test Case Description	Expected Output/ Result	Actual Output/ Result
5.1	'Add' button	On input of new user details	Store details in the database and display a message to confirm adding the new user. 'New user added successfully'	As expected
5.2	'Reset' button	On selection of Reset button	Clear all the data fields	As expected
5.3	'Close' button	On selection of Close button	Close frm_new_user	As expected
5.4	'OK' button	On input of	Store details in the	As expected

		required password details	database and display a message to confirm changing the password. 'Password has been changed successfully'	
5.5	'Delete' button	On selection of delete a record	Store details in the database. Remove the record from the list.	As expected

Test Case No : 06		Test Case : Manager Profile (frmManager_prof)		
Test No.	Test Item	Test Case Description	Expected Output/ Result	Actual Output/ Result
6.1	Risk alerts	On page load	Display all risk alerts in the grid	As expected
6.2	Top ten defects pie chart	On page load	Display the summary of top ten defects in the pie chart	As expected
6.3	Production Line wise defects bar chart	On page load	Display the number of defects in each production line in the bar chart	As expected
6.4	Top ten defect list data grid	On selection of time range	Display defects occurred within the selected time period in the grid	As expected
6.5	'Close' button	On selection of Close button	Close frmManager_prof	As expected

Test Case No : 07		Test Case : frmPivot_load		
Test No.	Test Item	Test Case Description	Expected Output/ Result	Actual Output/ Result
7.1	Pivot report	On page load	Display the selected type of analysis pivot report	As expected
7.2	'Close' button	On selection of Close button	Close frmPivot_load	As expected

Test Case No : 08		Test Case : Audit Type wise Defect Analysis (frmgrid_audit)		
Test No.	Test Item	Test Case Description	Expected Output/ Result	Actual Output/ Result
8.1	Audit type wise defects detail list	On page load	Display the defects occurred in each production line in relation to the audit type	As expected
8.2	Defects in each audit type pie chart	On page load	Display the defects based on the audit type in the pie chart	As expected
8.3	Audit Type wise Defect Analysis	On page load	Display the Audit Type wise Defect analysis pivot report	As expected

8.4	Pivot report 'Close' button	On selection of Close button	Close frmgrid_audit	As expected
-----	--------------------------------	---------------------------------	---------------------	-------------

<b>Test Case No : 09</b>		<b>Test Case : Supplier wise Defect Analysis (frm_grid)</b>		
<b>Test No.</b>	<b>Test Item</b>	<b>Test Case Description</b>	<b>Expected Output/ Result</b>	<b>Actual Output/ Result</b>
9.1	Supplier wise defects detail list	On page load	Display the defects occurred in each material type in relation to the supplier	As expected
9.2	Supplier wise defects pie chart	On page load	Display the defects based on the supplier in the pie chart	As expected
9.3	Supplier wise Defect Analysis Pivot report	On page load	Display the Supplier wise Defect analysis pivot report	As expected
9.4	'Close' button	On selection of Close button	Close frm_grid	As expected

<b>Test Case No : 10</b>		<b>Test Case : Style Type wise Defect Analysis (frm_grid2)</b>		
<b>Test No.</b>	<b>Test Item</b>	<b>Test Case Description</b>	<b>Expected Output/ Result</b>	<b>Actual Output/ Result</b>
10.1	Style wise defects detail list	On page load	Display the defects occurred in each style type as a defect percentage	As expected
10.2	Style wise defects pie chart	On page load	Display the top ten style types which have the highest number of defects.	As expected
10.3	Style type wise Defect Analysis Pivot report	On page load	Display the Style type wise Defect analysis pivot report	As expected
10.4	'Close' button	On selection of Close button	Close frm_grid2	As expected

<b>Test Case No : 11</b>		<b>Test Case : Risk status (frm_risk_status)</b>		
<b>Test No.</b>	<b>Test Item</b>	<b>Test Case Description</b>	<b>Expected Output/ Result</b>	<b>Actual Output/ Result</b>
11.1	Data display in the grid	On selection of All check box	Display all the records in the grid	As expected
11.2	Data display in the grid	On selection of Audit Type	Display the filtered data from the selected audit type in the grid	As expected
11.3	Data display	On selection of	Display the filtered data	As expected

	in the grid	Material Type	from the selected Material type in the grid	
11.4	Data display in the grid	On selection of time range	Display defects occurred within the selected time period in the grid	As expected
11.5	'Refresh Data' button	On selection of Refresh Data	Display the filtered data according to the selection criteria in the grid	As expected
11.6	Audit Type wise Defects pie chart	On page load	Display the defects based on the audit type in the pie chart	As expected
11.7	'Close' button	On selection of Close button	Close frm_risk_status	As expected

<b>Test Case No : 12</b>		<b>Test Case : Crystal Reprot (frmReportView)</b>		
<b>Test No.</b>	<b>Test Item</b>	<b>Test Case Description</b>	<b>Expected Output/ Result</b>	<b>Actual Output/ Result</b>
12.1	Crystal Report	On page load	Display the selected type of analysis crystal report	As expected
12.2	'Close' button	On selection of Close button	Close frmReportView	As expected

<b>Test Case No : 13</b>		<b>Test Case : Annual summary (frmannual_sum)</b>		
<b>Test No.</b>	<b>Test Item</b>	<b>Test Case Description</b>	<b>Expected Output/ Result</b>	<b>Actual Output/ Result</b>
13.1	Data loads in the report	On selection of the year	Display defects occurred within the selected year in the report	As expected
13.2	Data loads in the report	On selection of the type of report	Generate the selected type of crystal report which filters data according to the selected year	As expected
13.3	'View Report' button	On click of the View Report button	Generate the selected type of crystal report which is filtered based on the chosen criteria	As expected
13.4	'Close' button	On click of the Close button	Close frmannual_sum	As expected

<b>Test Case No : 14</b>		<b>Test Case : Daily summary (frmdaily_sum)</b>		
<b>Test No.</b>	<b>Test Item</b>	<b>Test Case Description</b>	<b>Expected Output/ Result</b>	<b>Actual Output/ Result</b>
14.1	Data loads in the report	On selection of the date	Display defects occurred on the selected date in the report	As expected

14.2	Data loads in the report	On selection of the type of report	Generate the selected type of crystal report which filters data according to the selected date	As expected
14.3	'View Report' button	On click of the View Report button	Generate the selected type of crystal report which is filtered based on the chosen criteria	As expected
14.4	'Close' button	On click of the Close button	Close frmddaily_sum	As expected

<b>Test Plan No : 15</b>		<b>Test Case : Line wise static screen (frmsectionline_defects)</b>		
<b>Test No.</b>	<b>Test Item</b>	<b>Test Case Description</b>	<b>Expected Output/ Result</b>	<b>Actual Output/ Result</b>
17.1	Data loads in the report	On selection of the date range	Display defects occurred within the selected date range in the report	As expected
17.2	Data loads in the report	On selection of the type of report	Generate the selected type of crystal report which filters data according to the selected date range	As expected
17.3	'View Report' button	On click of the View Report button	Generate the selected type of crystal report which is filtered based on the chosen criteria	As expected
17.4	'Close' button	On click of the Close button	Close frmsectionline_defects	As expected

## ii) System and Integration Testing Test Cases

<b>Test Case No.</b>	<b>Test Case Description</b>	<b>Expected Result</b>	<b>Actual Result</b>
1.0	Database Connectivity	Successfully retrieve and insert data from the database	Data is successfully retrieved and inserted in the database
2.0	Connectivity of the menu bar items and icons with the relevant screens	Every menu bar item and the icon should connect to the relevant screen of the system.	As expected
3.0	Adding Dundas charts to	Display summary of	As expected

	the system	data which retrieved from the database.	
4.0	Adding Excel Bonavista Micro charts to the pivot reports	Display summary of data which includes in the pivot reports	As expected
5.0	Connectivity of Crystal Reports (version 12) to the BI tool	Display data which retrieved from the database	As expected
6.0	Connectivity of Pivot Reports (MS Excel 2007) to the application	Display data which retrieved from the database	As expected
7.0	Connectivity of LumiSoft.UI.dll to the BI tool	Generate an outlook bar in the application	As expected
8.0	Connectivity of AxInterop.DSOFramer.dll	Load excel reports in the application	As expected
9.0	Connectivity of Interop.DSOFramer.dll	Load excel reports in the application	As expected

### iii) Performance Testing Test Cases

1.0 Test Case : Splash screen (frmSplash)				
Test No.	Test Item	Test Case Description	Expected Output/ Result	Actual Output/ Result
1.1	Splash screen	Load the screen	Load the screen within 20 seconds	As expected

2.0 Test Case : Login Screen (frm_login)				
Test No.	Test Item	Test Case Description	Expected Result	Actual Result
2.1	frm_login	Load and refresh the screen	Load the screen within 5 seconds	Took 6 seconds to load
2.2	'Login' button	Response time of the Login	Load the main screen	The main screen (main_MIRT)loads

button (main\_MIRT)within 4 seconds within 3 seconds

<b>3.0 Test Case : Main Screen (main_MIRT)</b>				
<b>Test No.</b>	<b>Test Item</b>	<b>Test Case Description</b>	<b>Expected Result</b>	<b>Actual Result</b>
3.1	main_MIRT	Load and refresh the screen	Load the screen within 5 seconds	The main_MIRT loads within 3 seconds
3.2	Quick Search	Search and retrieve relevant data	Display result within 3 seconds	Display result between 1-2 seconds
3.3	'Help' icon	Response time of the icon Loading time of the Help file	Load the Help file in 4 seconds	Help file loads between 1-2 seconds

<b>4.0 Test Case : Dynamic Reports –screen (frmdynamic_reports)</b>				
<b>Test No.</b>	<b>Test Item</b>	<b>Test Case Description</b>	<b>Expected Result</b>	<b>Actual Result</b>
4.1	frmdynamic_reports	Load and refresh the screen	Load the screen within 6 seconds	frmdynamic_reports loads in 5 seconds
4.2	'View Report' button	Response time of the button Loading time of the report	Load the dynamic report in 9 seconds	Load the dynamic report in 7 seconds
4.3	'Export' button	Response time of the button Conversion and loading time of the report	Save the report in 9 seconds	Save the report in 11 seconds

<b>5.0 Test Case : User Account(frm_new_user)</b>				
<b>Test No.</b>	<b>Test Item</b>	<b>Test Case Description</b>	<b>Expected Result</b>	<b>Actual Result</b>
5.1	frm_new_user	Load and refresh the screen	Load the screen within 3 seconds	frm_new_user loads within 3 seconds
5.2	'Add' button in Add user tab	Response time of the button	Appear the message 'New user added successfully' in 3 seconds	The message box appears within 1-2 seconds
5.3	'Reset' button in Add user tab	Response time of the button	Clear the fields 2 seconds	Clear the fields in 1 second
5.4	'OK' button in Change Password	Response time of the button	Appear the message	The message box appears within 1-2

	tab		'Password has been changed successfully' in 3 seconds	seconds
5.5	'Delete' button in Remove user tab	Response time of the button	Disappear the particular record within 3 seconds	The record deletes in 1 second

#### 6.0 Test Case : Manager Profile (frmManager\_prof)

Test No.	Test Item	Test Case Description	Expected Result	Actual Result
6.1	frmManager_prof	Load and refresh the screen	Load the screen within 5 seconds	frmManager_prof loads in 4 seconds

#### 7.0 Test Case : frmPivot\_load

Test No.	Test Item	Test Case Description	Expected Result	Actual Result
7.1	frmPivot_load	Load and refresh the screen	Load the screen within 7 seconds	frmPivot_load loads in 4 seconds

#### 8.0 Test Case : Audit Type wise Defect Analysis (frmgrid\_audit)

Test No.	Test Item	Test Case Description	Expected Result	Actual Result
8.1	frmgrid_audit	Load and refresh the screen	Load the screen within 11 seconds	frmgrid_audit loads in 7 seconds

#### 9.0 Test Case : Supplier wise Defect Analysis (frm\_grid)

Test No.	Test Item	Test Case Description	Expected Result	Actual Result
9.1	frm_grid	Load and refresh the screen	Load the screen within 12 seconds	frm_grid loads in 7 seconds

#### 10.0 Test Case : Style Type wise Defect Analysis (frm\_grid2)

Test No.	Test Item	Test Case Description	Expected Result	Actual Result
10.1	frm_grid2	Load and refresh the screen	Load the screen within 8 seconds	frm_grid2 loads in 6 seconds

#### 11.0 Test Case : Risk status (frm\_risk\_status)

Test No.	Test Item	Test Case Description	Expected Result	Actual Result
11.1	frm_risk_status	Load and refresh the screen	Load the screen within 11 seconds	frm_risk_status loads within 8 seconds

11.2	'Refresh Data' button	Response time of the button	Load the data in the grid according to the filter criteria within 5 seconds	Load the data in the grid within 1-2 seconds
------	-----------------------	-----------------------------	---	--

#### 12.0 Test Case : Crystal Report (frmReportView)

Test No.	Test Item	Test Case Description	Expected Result	Actual Result
12.1	frmReportView	Load and refresh the screen	Load the screen within 15 seconds	frmReportView loads within 22 seconds

#### 13.0 Test Case : Annual summary (frmannual\_sum)

Test No.	Test Item	Test Case Description	Expected Result	Actual Result
13.1	frmannual_sum	Load and refresh the screen	Load the screen within 8 seconds	frmannual_sum loads within 6 seconds
13.2	'View Report' button	Response time of the button Loading time of the report	Load the crystal report 13 seconds	Load the report in 15 seconds



University of Moratuwa, Sri Lanka.

#### 14.0 Test Case : Daily summary (frmdaily\_sum)

Test No.	Test Item	Test Case Description	Expected Result	Actual Result
14.1	frmdaily_sum	Load and refresh the screen	Load the screen within 8 seconds	frmdaily_sum loads within 6 seconds
14.2	'View Report' button	Response time of the button Loading time of the report	Load the crystal report 13 seconds	Load the report in 13 seconds

#### 15.0 Test Case : Line wise static screen (frmsectionline\_defects)

Test No.	Test Item	Test Case Description	Expected Result	Actual Result
17.1	frmsectionline_defects	Load and refresh the screen	Load the screen within 8 seconds	frmsectionline_defects loads within 7 seconds
17.2	'View Report' button	Response time of the button. Loading time of the report.	Load the crystal report 13 seconds	Load the report in 11 seconds

iv) **ETL Process Testing Test Cases**

<b>Test Case No.</b>	<b>Test Case Description</b>	<b>Expected Result</b>	<b>Actual Result</b>
1.0	Transfer data from OLTP qlyDefects table to OLAP qlyDefects table	Transfer records from [DGI_QltyDB].[qlyDefects] to [DGI_DWH].[qlyDefects]	As expected
2.0	Transfer data from OLTP qlyOperation table to OLAP qlyOperation table	Transfer records from [DGI_QltyDB].[qlyOperation] to [DGI_DWH].[qlyOperation]	As expected
3.0	Transfer data from OLTP qlyPrdLine table to OLAP qlyProdLine table	Transfer records from [DGI_QltyDB].[qlyPrdLine] to [DGI_DWH].[qlyProdLine]	As expected



## Appendix B

### User Manual

#### i) Login Screen

This will allow the users to login to the system and perform required operations based on the user level.



In order to login to the system the user should enter the correct username and password. For the new users the username and the password will be provided by the system administrator based on the user level. The invalid and incorrect usernames and passwords will prevent the users from login to the system. If such a situation will accidentally occur for a valid user he could solve it through the system administrator.

If the user name and the password which was entered by the user were incorrect or invalid, an error message will be displayed as follows;



If the problem persists please contact the System Administrator.

## ii) Main Screen

This will be the first screen view by any user when they login to the system and will be the home screen of the system.



This screen allows the user to navigate to all the other interfaces through the menu bar and the outlook bar. The outlook bar and the upper menu bar will be common for each and every interface of the system. Therefore the quick search as well as the other icons can be accessed by the user at any time while the system runs.

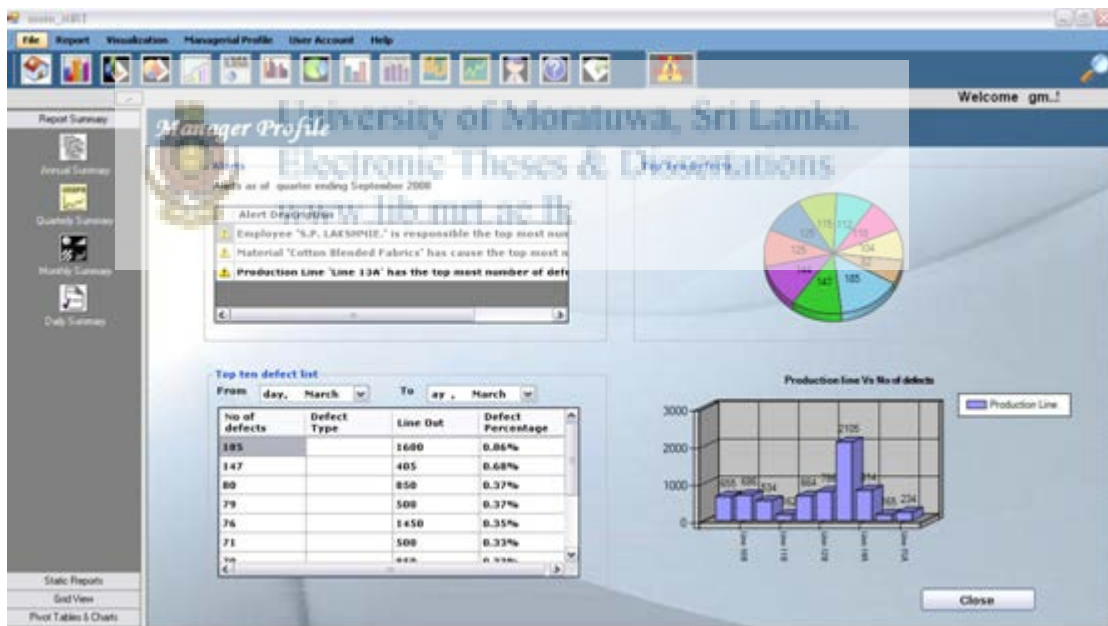
If the user is a managerial level person and there are risk alerts for him, a risk alert indication will be displayed in the upper menu bar of the screen.

### iii) Quick Search

The Quick Search which is placed at the right upper corner of the system allows the user to search the number of defects based on audit type or the production line. The user could select either the audit type or the production line in order to search for defect occurrences for a particular chosen date. If there aren't any defects occurrences on the specified field for the chosen date an error message will be displayed saying "No defects found for the chosen date".

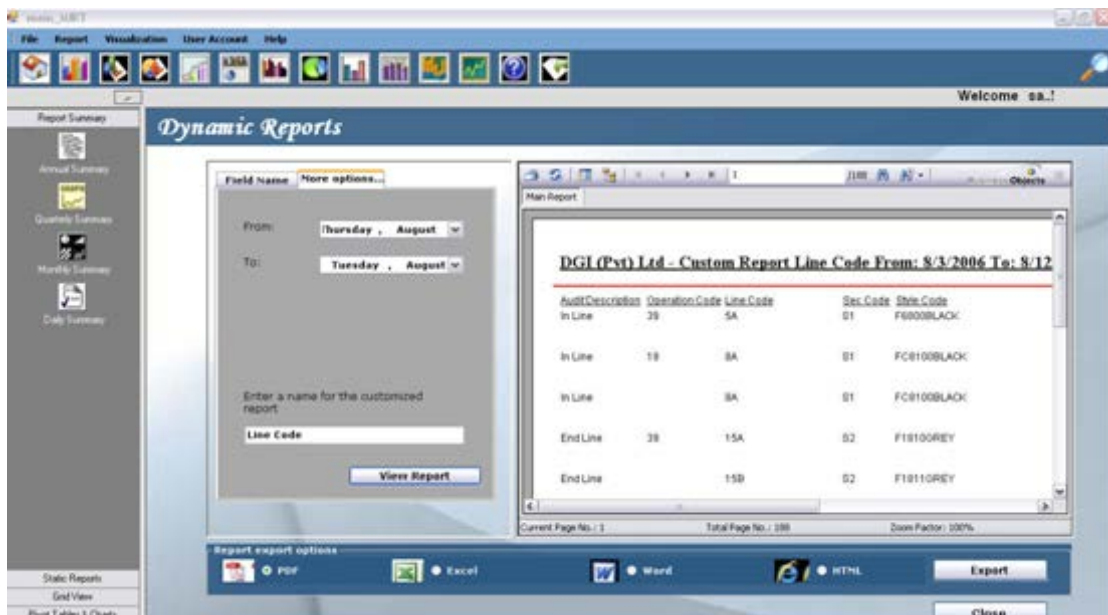
### iv) Manager Profile

This could only be viewed by the managerial level users and will provide a summary of all the activities.



The managers are provided with the risk alert descriptions in this particular screen. In addition to that, the summary charts and a table which provides top ten defect details based on the selected date range are also included in this screen.

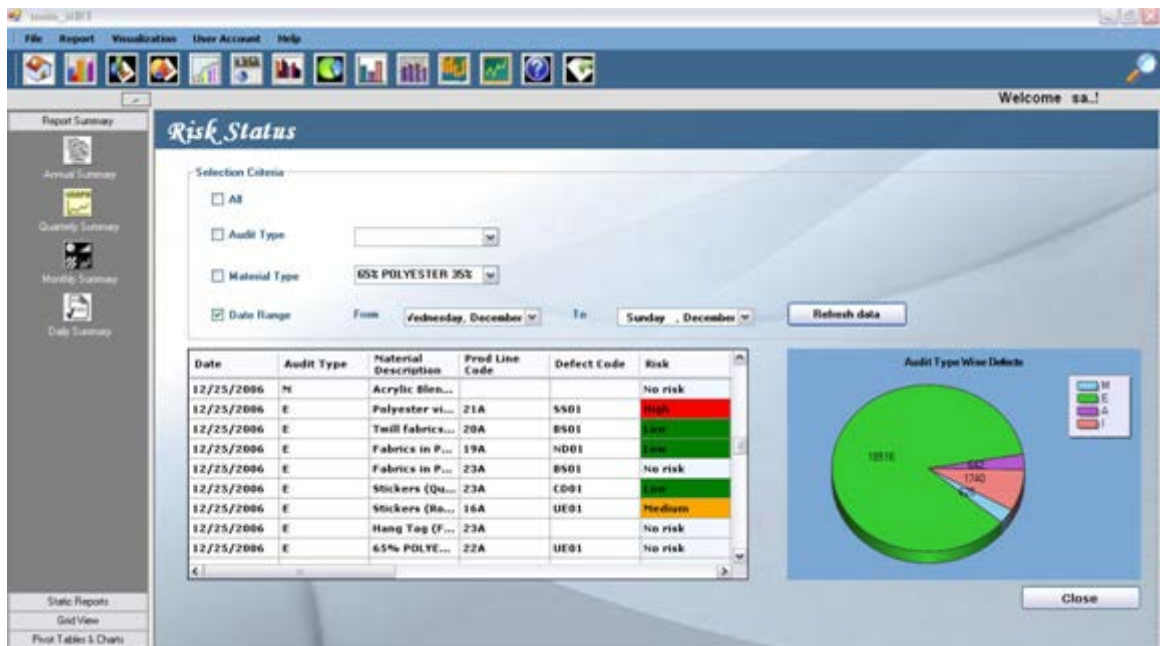
## v) Dynamic Report Screen



This will allow the user to dynamically create the reports. The user has to select the fields which required to be displayed in the report, and then click on the 'Next' button to move to the other tab page in order to select the date range and to enter a title for the report. After selecting the all necessary criteria then by clicking on the 'View Report' button user would able to generate the report at the right side of the screen.

The generated report can be then save as in different file formats according to user selection such as PDF, excel, word or HTML. After selecting a specific file format from the bottom pane of the screen, user has to click on the 'Export' button which will then ask the user to select a location to save the file.

vi) Risk Status Screen



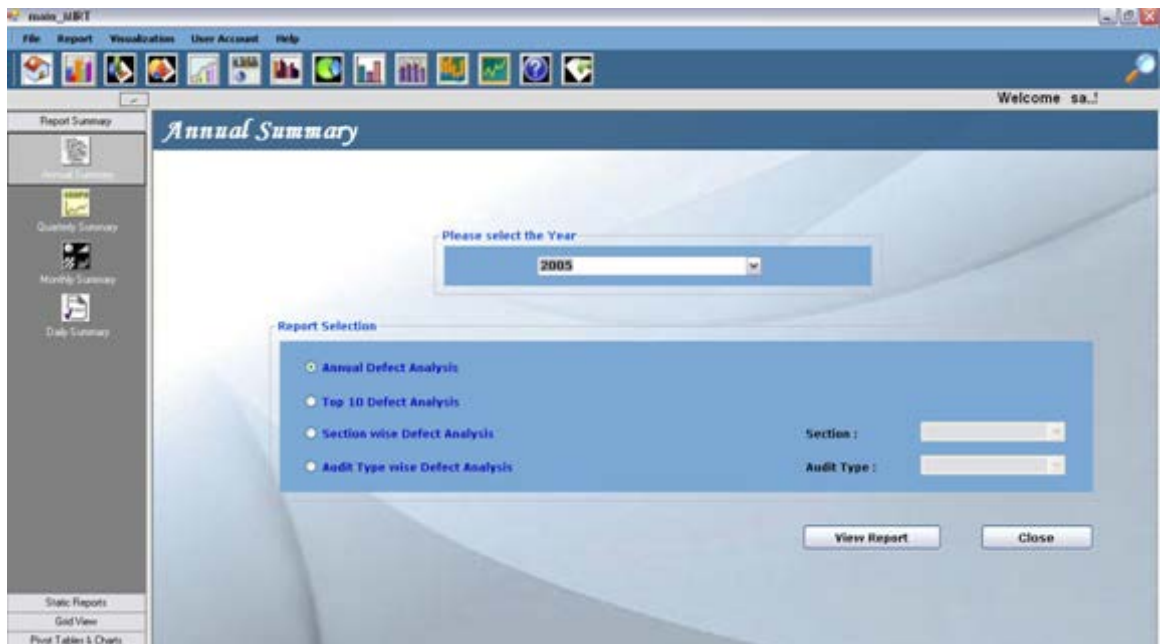
This screen will provide required risk details, based on user selection criteria. The user is allowed to select a specific audit type and material type along with the time range. After selecting the criteria, the user has to click on the 'Refresh Data' button in order to generate relevant details in the grid placed at the bottom of the screen.

The risk status of each record will be displayed at the 'Risk' column. The 'High risk' defects will display in red color, 'medium risk' defects in orange color and 'Low risk' defects in green color while the remaining fields which does not have any risks will display 'no risk'.

The pie chart displays the summary of defects based on each audit type.

vii) **Summary Report Screen**

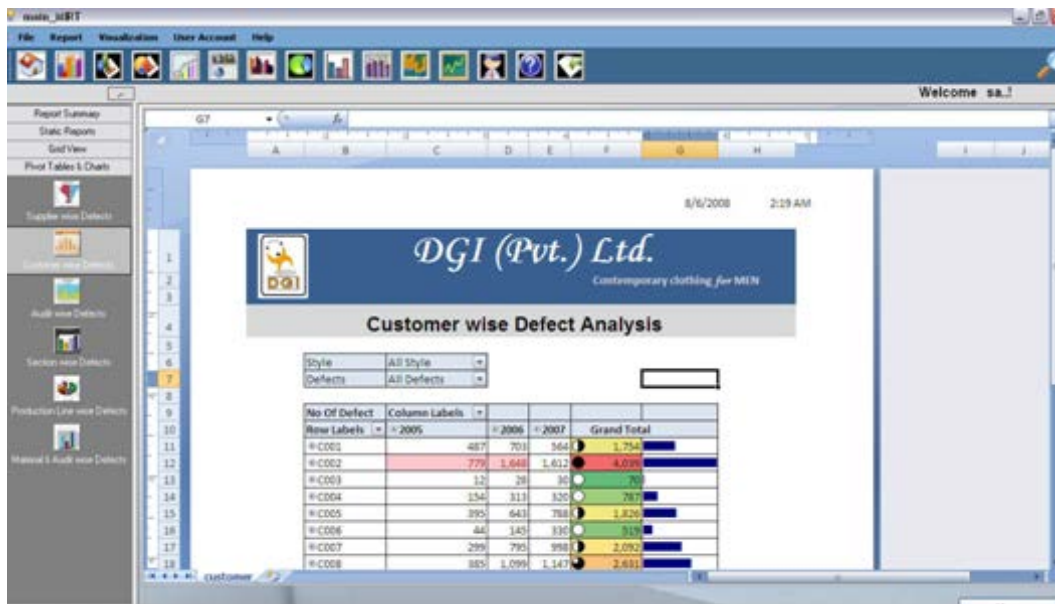
**Annual Summary Screen**



This screen will allow the user to view annual summary crystal reports. After selecting the year from the combo box placed at the top of the screen, the user could select the type of report from the list at the bottom. Then after clicking on the 'View Report' button user could generate the selected report as a separate screen.

The other summary report screens will also consist of the same structure explained above.

### viii) Pivot Report Screen



This screen will generate the selected type of pivot report, at the loading time of the report itself. User could either select the type of report from the out look bar or the menu options provided in the menu bar.

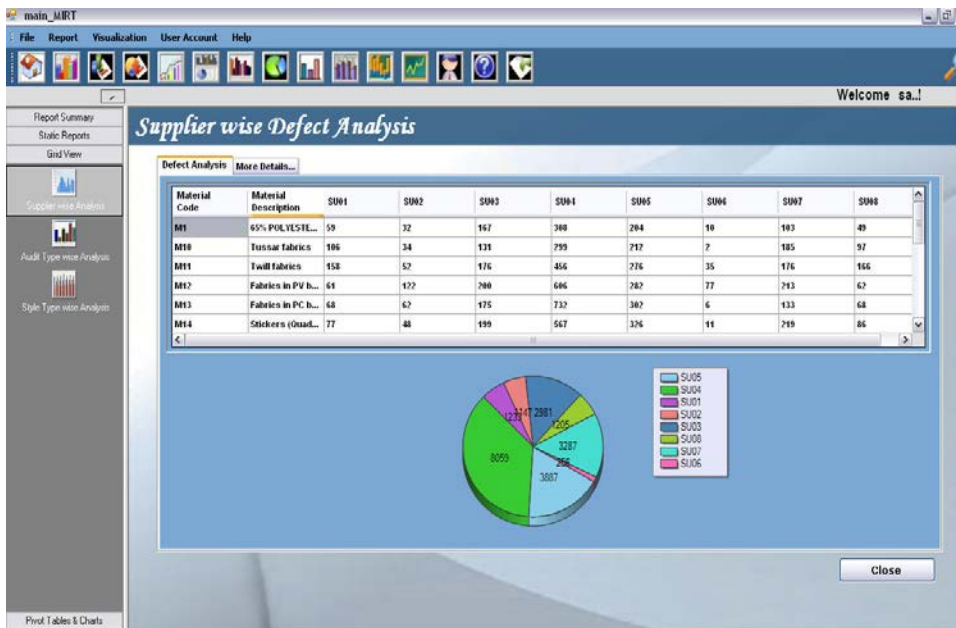


University of Moratuwa, Sri Lanka.  
Electronic Theses & Dissertations  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)

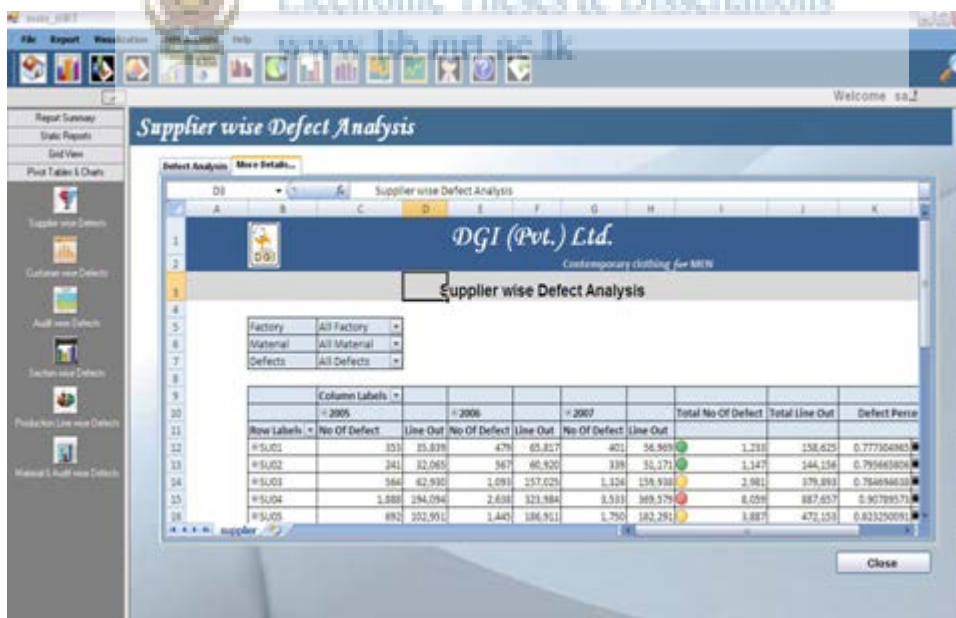
The other pivot report screens will also behave in the same manner.

ix) Grid View Screen

Supplier wise Defect Analysis Grid



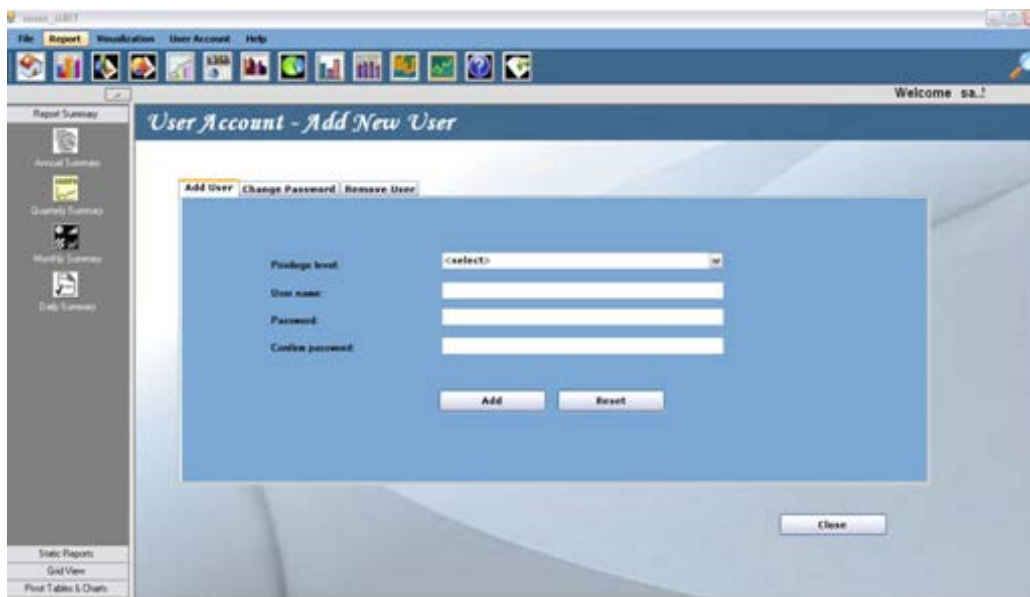
This grid which is placed at the top of the screen will display all the supplier details in relation with the material types. The summary pie chart which is placed at the bottom of the screen displays the number of defects based on the supplier.



The second tab page of the supplier wise analysis screen will provide more details on defects occurred in relation to each supplier.

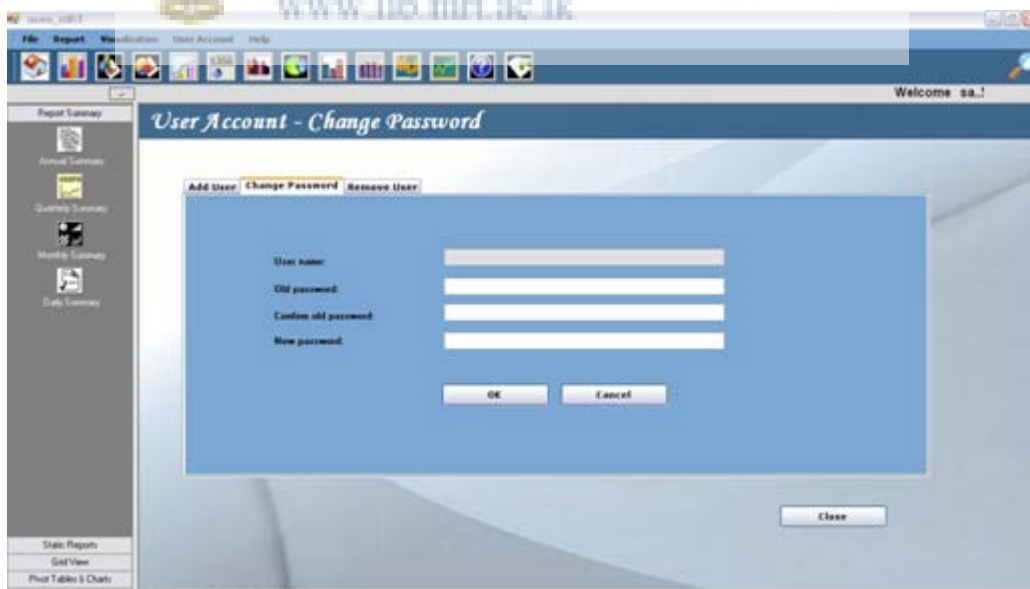
The other grid view screens will also consist of the same structure explained above.

x) **User Account – Add New User**



Only the system administrator is given the authority to add new users and remove users from the system. The new users should meet the system administrator in order to register in the system.

xi) **User Account – Change Password**



All the users in each user level are allowed to change their password through this particular screen. After entering the required data in to the fields, user has to click on the 'OK' button. Then a message box will appear saying 'Your password has been successfully changed'.