

# CHAPTER 5

## SOLUTION DESIGN

### 5.1 Testing Strategy

There are several testing phases that must be done in testing strategy. Those phases are defined as follow:

1. Ensure that each module in ACHUSI could run properly in the development system.
2. Ensure the software that has been integrated could run in the development system.
3. The integrated software is tested to ensure that it could run in two computers, with one computer as client and the other one as server.
4. Ensure that the integrated software could run appropriately in the computers, which are conducted in the networked computers.

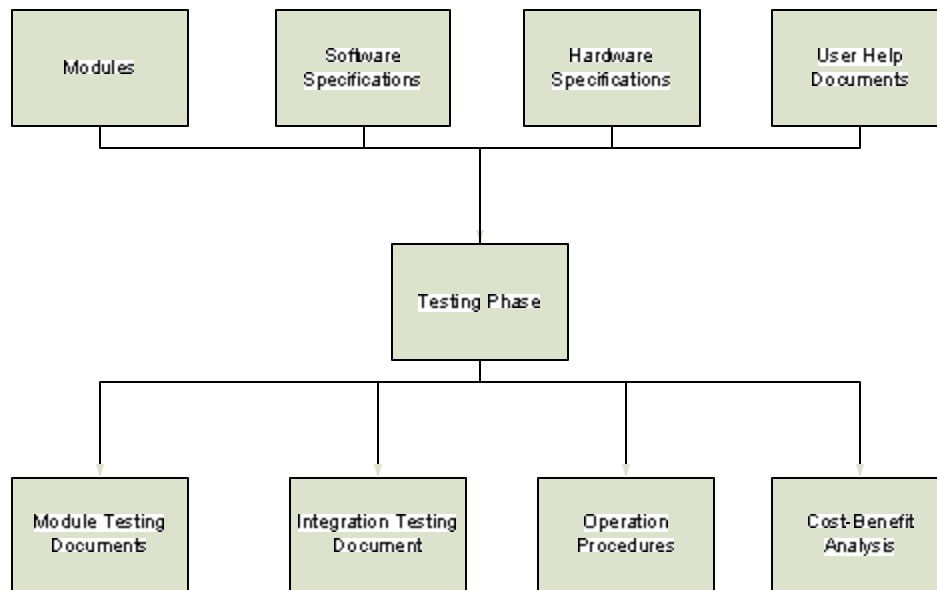


Figure 5.1 Testing Phase

## 5.2 Operational Procedures

Several procedures that are required to run ACHUSI on the server computer properly:

1. Install SQL Server 2005 Express Edition and SQL Server Management Studio Express.
2. Restore the two database for ACHUSI, namely ACHUSI and ACHUSI\_Temp.
3. Set the computer's regional setting to Indonesia.
4. Install ACHUSI.
5. Set the connection string properties for created database as needed.
6. After procedure 1 to 6 has been performed, ACHUSI can immediately be used by using a correct username and password.

The procedures, that need to be done in client computer to run ACHUSI appropriately, are as follow:

1. All operational procedures for server computer must be done before proceed to the client computers' operational procedures.
2. Set the computer's regional setting to Indonesia.
3. Install ACHUSI.
4. Set the connection string properties for created database in the server as needed.
5. After procedure 1 to 5 has been performed, ACHUSI can immediately be used by using a correct username and password.

### 5.3 Module Testing

<b>Test Plan</b>		Page 01 of 18
Program ID : Login                      Version Number : 1.0 Tester : Willy Suryadi    Date Designed : 26/06/2007    Date Conducted : 26/06/2007		
Test ID : 01  Required Addressed : Verify login module functionality  Objective : Ensure that the users can login into the application correctly		
<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
-User login in normal mode as manager	-Username/(manager) -Password/(manager) -Mode/(Normal)	-User logged into normal mode as manager/(success)
-User login in practice mode as manager	-Username/(latihan) -Password/(latihan) -Mode/(Latihan)	-User logged into practice mode as manager/(success)
-User login in normal mode as logistic administrator	-Username/(logistic) -Password/ (logistic) -Mode/(Normal)	-User logged into normal mode as logistic administrator/(success)
-User login in normal mode as accounting administrator	-Username/(keuangan) -Password/(keuangan) -Mode/(Normal)	-User logged into normal mode as accounting administrator/(success)

Table 5.1 Login Test Plan

<b>Test Plan</b>		Page 02 of 18
Program ID : Master Product                      Version Number : 1.0 Tester : Willy Suryadi    Date Designed : 26/06/2007    Date Conducted : 26/06/2007		
Test ID : 02  Required Addressed : Verify Master Product module functionality  Objective : Ensure that the users can add, delete, update, and search products' data in master product		
<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
-User generate product ID, before adding new product data	-Product's supplier/(PT. Inbisco)  -Product's type/(Biskuit)	-Product ID is generated/(success)
-User add new product's data	-Product's name/(Vanilla Cream)  -Small unit price OP/(1100)  -Large unit price OP/(10000)  -Small unit price TO/(1200)  -Large unit price TO/(11000)  -Small unit quantity/(10)	-New product's data is stored in database and can be viewed in master product/(success)

<p>-User update a product's data</p>	<p>-Any data field which is shown in data grid/(none)</p> <p>-Product's name/ (Chocolate Cream)</p> <p>-Small unit price OP/ (1000)</p> <p>-Large unit price OP/ (9000)</p> <p>-Small unit price TO/ (1100)</p> <p>-Large unit price TO/ (10000)</p> <p>-Small unit quantity/(9)</p>	<p>-The product's data is updated as specified by the user/(success)</p>
<p>-User search products' data</p>	<p>-Supplier's name/(PT. Inbisco)</p> <p>-Product's type/(Biskuit)</p> <p>-Product's name/ (Chocolate Cream)</p>	<p>-The products' data are shown to the user/(success)</p>
<p>-User delete a product's data</p>	<p>-Any data field which is shown in data grid/(none)</p>	<p>-The product's data status is set to not exist in</p>

		database and can't be viewed in master product/(success)
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Table 5.2 Master Product Test Plan

<b>Test Plan</b>		Page 03 of 18
Program ID : Master Warehouse Stock		Version Number : 1.0
Tester : Willy Suryadi		Date Designed : 26/06/2007 Date Conducted : 26/06/2007
Test ID : 03		
Required Addressed : Verify Master Warehouse Stock module functionality		
Objective : Ensure that the users can know what product resides in which warehouses		
<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
-User search products' data	-Warehouse's name/ (Gudang Utama)  -Product's ID/(AAA001)	-The products' data and its warehouse's name are shown to user/(success)

Table 5.3 Master Warehouse Stock Test Plan

<b>Test Plan</b>		Page 04 of 18
Program ID : Master Customer		Version Number : 1.0
Tester : Willy Suryadi		Date Designed : 26/06/2007 Date Conducted : 26/06/2007
Test ID : 04		

Required Addressed : Verify Master Customer module functionality		
Objective : Ensure that the users can add, delete, update, and search customers' data in master customer		
<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
-User add new customer's data	-Customer's name/ (Richardo)  -Address/(Jl. Kembang Seroja no. 70)  -City/(Purwokerto)  -Phone number/(653589)	-New customer's data is stored in database and can be viewed in master customer/(success)
-User update a customer's data	-Any data field which is shown in data grid/(none)  -Customer's name/ (Richardo Alamsjah)  -Address/(Jl. Kembang Madu no. 170)  -City/(Banyumas)  -Phone number/(753588)	-The customer's data is updated as specified by the user/(success)
-User search customers' data	-Name/(Richardo Alamsjah)  -City/(Banyumas)	-The customers' data are shown to the user/(success)

-User delete a product's data	- Any data field which is shown in data grid/(none)	-The customer's data status is set to not exist in database and can't be viewed in master customer/(success)
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Table 5.4 Master Customer Test Plan

<b>Test Plan</b>		Page 05 of 18
Program ID : Master Supplier		Version Number : 1.0
Tester : Willy Suryadi		Date Designed : 27/06/2007 Date Conducted : 27/06/2007
Test ID : 05		
Required Addressed : Verify Master Supplier module functionality		
Objective : Ensure that the users can add, delete, update, and search suppliers' data in master supplier		
<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
-User add new supplier's data	-Supplier's ID/(MA) -Supplier's name/(PT. Makmur Abadi) -Address/(Jl. Surya No. 66-70) -City/(Banyumas)	-New supplier's data is stored in database and can be viewed in master supplier/(success)



<p>-User update a supplier's data</p>	<p>-Phone number/(729005)</p> <p>-Any data field which is shown in data grid/(none)</p> <p>-Supplier's name/(CV. Makmur Abadi)</p> <p>-Address/(Jl. Surya No. 70)</p> <p>-City/(Purwokerto)</p> <p>-Phone number/(729500)</p>	<p>-The supplier's data is updated as specified by the user/(success)</p>
<p>-User search suppliers' data</p>	<p>-Name/(CV. Makmur Abadi)</p> <p>-City/(Purwokerto)</p>	<p>-The suppliers' data are shown to the user/(success)</p>
<p>-User delete a supplier's data</p>	<p>- Any data field which is shown in data grid/(none)</p>	<p>-The supplier's data status is set to not exist in database and can't be viewed in master supplier/(success)</p>

Table 5.5 Master Supplier Test Plan

**Test Plan**

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Program ID : Master Employee

Version Number : 1.0

Tester : Willy Suryadi    Date Designed : 27/06/2007    Date Conducted : 27/06/2007

Test ID : 06

Required Addressed : Verify Master Employee module functionality

Objective : Ensure that the users can add, delete, update, and search employees' data in master employee

<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
-User add new employee's data	-Employee's name/(Andi Sutarjo) -Address/(Jl. Serumpun no. 122) -City/(Semarang) -Start work date/(04/07/2007) -Main salary/(550000) -Lunch money/(6000) -Role/(Helper) -Phone number/(526987) -Mobile number/(0816544925) -Email address/(none)	-New employee's data is stored in database and can be viewed in master employee/(success)

<p>-User update a employee's data</p>	<p>-Any data field which is shown in data grid/(none)</p> <p>-Employee's name/(Andi Sukarjo)</p> <p>-Address/(Jl. Serumpun no. 123)</p> <p>-City/(Purwokerto)</p> <p>-Start work date/(03/07/2007)</p> <p>-Main salary/(500000)</p> <p>-Lunch money/(5000)</p> <p>-Role/(Helper)</p> <p>-Phone number/(526989)</p> <p>-Mobile number/(0816544978)</p> <p>-Email address/(andi@mail.com)</p>	<p>-The employee's data is updated as specified by the user/(success)</p>
<p>-User search employee' data</p>	<p>-Name/(Andi Sukarjo)</p> <p>-City/(Purwokerto)</p> <p>-Role/(Helper)</p>	<p>-The employees' data are shown to the user/(success)</p>
<p>-User delete a employee's</p>	<p>- Any data field which is</p>	<p>-The employee's data</p>

data	shown in data grid/(none)	status is set to not exist in database and can't be viewed in master employee/(success)
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Table 5.6 Master Employee Test Plan

<b>Test Plan</b>		Page 07 of 18
Program ID : Master Building		Version Number : 1.0
Tester : Willy Suryadi		Date Designed : 27/06/2007
		Date Conducted : 27/06/2007
Test ID : 07		
Required Addressed : Verify Master Building module functionality		
Objective : Ensure that the users can add, delete, and update buildings' data in master building		
<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
-User add new building's data	-Building's name/(Gudang Barang 2)  -Description/(Gudang untuk menyimpan barang baik)	-New building's data is stored in database and can be viewed in master building/(success)
-User update a building's data	-Any data field which is shown in data grid/(none)	-The building's data is updated as specified by

<p>-User delete a building's data</p>	<p>- Building's name/(Gudang Barang 3)          -Description/(Gudang untuk menyimpan barang rusak)          - Any data field which is shown in data grid/(none)</p>	<p>the user/(success)          -The building's data status is set to not exist in database and can't be viewed in master building/(success)</p>
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Table 5.7 Master Building Test Plan

<b>Test Plan</b>		Page 08 of 18
<p>Program ID : Master Login                      Version Number : 1.0</p>		
<p>Tester : Willy Suryadi    Date Designed : 27/06/2007    Date Conducted : 27/06/2007</p>		
<p>Test ID : 08          Required Addressed : Verify Master Login module functionality          Objective : Ensure that the users can add, delete, and update logins' data in master login</p>		
<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
<p>-User add new login's data</p>	<p>-Username/(micro)</p>	<p>-New login's data is</p>

<p>-User update a login's data</p>	<p>-Status/(Logistik)          -Password/(micro)          -Password Confirmation/(micro)          -Any data field which is shown in data grid/(none)          - Status/(Keuangan)          -Old Password/(micro)          -New Password/(micro2)          -New Password Confirmation/(micro2)</p>	<p>stored in database and can be viewed in master login/(success)          -The login's data is updated as specified by the user/(success)</p>
<p>-User delete a login's data</p>	<p>- Any data field which is shown in data grid/(none)</p>	<p>-The login's data is deleted from database and can't be viewed in master login/(success)</p>

Table 5.8 Master Login Test Plan

<b>Test Plan</b>		Page 09 of 18
Program ID : Cost	Version Number : 1.0	
Tester : Willy Suryadi	Date Designed : 28/06/2007	Date Conducted : 28/06/2007

<p>Test ID : 09</p> <p>Required Addressed : Verify Cost module functionality</p> <p>Objective : Ensure that the users can add cost data</p>		
<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
-User add new cost's data	-Cost Type/(Biaya Operasional) -Cost Value/(50000) -Cost Description/(Biaya bensin truk)	-New cost's data is stored in database and cost receipt is immediately shown to user/(success)

Table 5.9 Cost Test Plan

<b>Test Plan</b>		Page 10 of 18
<p>Program ID : Bonus                      Version Number : 1.0</p> <p>Tester : Willy Suryadi    Date Designed : 28/06/2007    Date Conducted : 28/06/2007</p>		
<p>Test ID : 10</p> <p>Required Addressed : Verify Bonus module functionality</p> <p>Objective : Ensure that the users can add bonus data</p>		
<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
-User add new bonus's data	-Bonus Value/(100000) -Bonus Name/(Kipas angin)	-New bonus's data is stored in database and bonus receipt is immediately shown to

		user/(success)
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Table 5.10 Bonus Test Plan

<b>Test Plan</b>		Page 11 of 18
Program ID : Payroll		Version Number : 1.0
Tester : Willy Suryadi		Date Designed : 28/06/2007 Date Conducted : 28/06/2007
Test ID : 11		
Required Addressed : Verify Payroll module functionality		
Objective : Ensure that the users can add payroll data		
<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
-User select employee from search customer form, before adding new payroll's data	-Any data field which is shown data grid in search employee form/(none)	-Employee ID and month year will be filled automatically in payroll form/(success)
-User calculate total salary by pressing "Hitung Gaji" button	-Absent/(1) -Permission/(2) -Overwork wage/(50000) -Other benefits/(40000)	-Main salary, lunch money and total salary will be calculated and shown automatically/(success)
-User add new payroll's	-none/(none)	-New payroll's data is



data		stored in database and payroll receipt is immediately shown to user/(success)
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Table 5.11 Payroll Test Plan

<b>Test Plan</b>		Page 12 of 18
Program ID : Cost Report	Version Number : 1.0	
Tester : Willy Suryadi    Date Designed : 28/06/2007    Date Conducted : 28/06/2007		
Test ID : 12  Required Addressed : Verify Cost Report module functionality  Objective : Ensure that the users can view cost report		
<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
-User view cost report	-Date from/(01 Juni 2007)  -Date to/(04 Juli 2007)	-Cost report from  01/06/2007 to 04/07/2007  will be shown to  user/(success)

Table 5.12 Cost Report Test Plan

<b>Test Plan</b>		Page 13 of 18
Program ID : Bonus Report		Version Number : 1.0
Tester : Willy Suryadi    Date Designed : 28/06/2007    Date Conducted : 28/06/2007		
Test ID : 13		
Required Addressed : Verify Bonus Report module functionality		
Objective : Ensure that the users can view bonus report		
<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
-User view bonus report	-Date from/(04/06/2007) -Date to/(04/07/2007)	-Bonus report from 04/06/2007 to 04/07/2007  will be shown to user/(success)

Table 5.13 Bonus Report Test Plan

<b>Test Plan</b>		Page 14 of 18
Program ID : Payroll Report		Version Number : 1.0
Tester : Willy Suryadi    Date Designed : 28/06/2007    Date Conducted : 28/06/2007		
Test ID : 14		
Required Addressed : Verify Payroll Report module functionality		
Objective : Ensure that the users can view payroll report		
<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
-User view payroll report	-Month/(06) -Year/(2007)	-Payroll report in June  2007 will be shown to

		user/(success)
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Table 5.14 Payroll Report Test Plan

<b>Test Plan</b>		Page 15 of 18
Program ID : Change Login Password		Version Number : 1.0
Tester : Willy Suryadi    Date Designed : 29/06/2007    Date Conducted : 29/06/2007		
Test ID : 15		
Required Addressed : Verify Change Login Password module functionality		
Objective : Ensure that the users can change their login password		
<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
-User change login password	-Old Password/(manager) -New Password/ (manager2) -New Password Confirmation/(manager2)	-Old password will be changed with new password/(success)

Table 5.15 Change Login Password Test Plan

<b>Test Plan</b>		Page 16 of 18
Program ID : Backup Data		Version Number : 1.0
Tester : Willy Suryadi    Date Designed : 29/06/2007    Date Conducted : 29/06/2007		

Test ID : 16		
Required Addressed : Verify Backup Data module functionality		
Objective : Ensure that the users can backup database		
<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
-User choose a folder location before he/she backup the database	-Folder Location/ (D:\ACHUSI_ [Tgl_04_07_2007] [Jam_17_48_27].bak)	-The folder location will be shown to user in backup data form/(success)
-User backup database	-none/(none)	-The backup file will be created into specified folder location/(success)

Table 5.16 Backup Data Test Plan

<b>Test Plan</b>		Page 17 of 18
Program ID : Restore Data		Version Number : 1.0
Tester : Willy Suryadi    Date Designed : 29/06/2007    Date Conducted : 29/06/2007		
Test ID : 17		
Required Addressed : Verify Restore Data module functionality		
Objective : Ensure that the users can restore database		
<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
-User choose a backup file	-File Location/	-The file location will be

before he/she restore the database	(D:\ACHUSI_ [Tgl_04_07_2007] [Jam_17_48_27].bak)	shown to user in restore data form/(success)
-User restore database	-none/(none)	-The database will be restored from the specified backup file/(success)

Table 5.17 Restore Data Test Plan

<b>Test Plan</b>		Page 18 of 18
Program ID : Unlock Login Status		Version Number : 1.0
Tester : Willy Suryadi		Date Designed : 29/06/2007
		Date Conducted : 29/06/2007
Test ID : 18		
Required Addressed : Verify Unlock Login Status module functionality		
Objective : Ensure that the users can unlock login status		
<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
-User unlock login status	-Username in login form/(manager) -Password in login form/(manager) -Password in unlock login	-The username will be unlocked and able to login normally/(success)

	status form/(manager)	
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Table 5.18 Unlock Login Status Test Plan

#### 5.4 System Integration Testing

<b>System Integration Testing</b>		
Program ID : ACHUSI                      Version Number : 1.0		
Tester : Danie Susanto, William Hartanto, and Willy Suryadi		
Date Designed : 30/06/2007    Date Conducted : 30/06/2007		
Required Addressed : Verify system's functionalities		
Objective : Ensure that the users can use all of the system functionalities		
<i>Test Cases</i>	<i>Data Field/(Value Entered)</i>	<i>Expected/(Actual Results)</i>
-Login	-Username/(manager)	-User logged into normal
	-Password/(manager)	mode as manager and
	-Mode/(Normal)	main menu is
		shown/(success)
	-Username/(latihan)	-User logged into practice
	-Password/(latihan)	mode as manager and
	-Mode/(Latihan)	main menu is
		shown/(success)
	-Username/(logistic)	-User logged into normal

	<p>-Password/ (logistic)</p> <p>-Mode/(Normal)</p>	<p>mode as logistic administrator and main menu is shown/(success)</p>
	<p>-Username/(keuangan)</p> <p>-Password/(keuangan)</p> <p>-Mode/(Normal)</p>	<p>-User logged into normal mode as accounting administrator and main menu is shown/(success)</p>
<p>-Logout</p>	<p>-none/(none)</p>	<p>-User is logged out and login form is shown/(success)</p>
<p>-All Modules Functionalities</p>	<p>-as stated in test plan/(as stated in test plan)</p>	<p>-User can use all modules without any problem/(success)</p>
<p>-Backup database</p>	<p>-destination folder and auto generated filename/ (D:\ACHUSI_ [Tgl_09_07_2007] [Jam_16_7_41].bak)</p>	<p>-A backup file containing current database is generated at specified folder/(success)</p>

-Restore database	-backup file/ ( D:\ACHUSI_ [Tgl_09_07_2007] [Jam_16_7_41].bak)	-The database will be restored the specified backup file/(success)
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Table 5.19 ACHUSI System Integration Testing