eProject

Advertisement Agency application with Microsoft SQL 2005

This is to certify that

Mr. Kawai
Ms. Sato

Has successfully Designed &Developed ADagent desktop application

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Date of Issue: 31/August/2010

Authorized Signature :_____

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1. Problem Definition

1.1. Acknowledgements

This document describes the information regarding our product designs, database structures, flow charts, and so on.

1.2. eProject Synopsis

1.2.1. Background

Our client is the local news paper editor. He ensures distribution of news papers all over various localities. The newspaper covers a variety of news like the weather forecasts, political, cultural, social, and entertainment related issues,

They have also introduced a section called CZ Classifieds , which will be handled and taken care of by the Advertising Agency Department personnel.. In this section they place several advertisements, based on their customer requirements.

1.2.2. Non-Financial

1. The application should be a server specific application, and it should provide a multi user access.
2. To easily manage the database and to reduce any discrepancies the client wants the following to be implemented while building the application.
The database will be set up on the server
The People of the agency department should be able to connect to the database, which is set up on the server from their respective systems.
For example, if there are 4 people in the department, say A , B , C , and D , each individual of the department is provided with the system, like say W , X , Y and Z , so that each will access their own system for their work. Now all these systems must connect to the single database that will be set up on the server.
For placing an order for the advertisement, the customer needs to visit the office and explain the requirements of the advertisement for placing the advertisement.
As soon as a customer places an order, one should be able to record his details like Name, Payment Done, Preference (like length, size, and on which page the advertisement is to be displayed, Date and time of advertisement, etc.)
3. Once the payment is received the details should be recorded in their database (available on the Server), So that there will be no possibility of Data Mismatch or Data misplacement, and there can be automation in the process.

4. He should be able to access the database to enable him to view the records, update the records, and delete the records. Also, he l alone will decide the price for(fee/cost of) the advertisement based on the parameters and insert this into the database.

5. Once the requirement of the customer is inputted in the application based on the parameters, the application will automatically calculate the charges for the advertisement.

6. The admin will alone have the right to create and delete the users of the application.

1.2.3. Financial

The customers will be charged based on the length, size and type of the advertisement, and also based on the page preferred (e.g. the front page, second page, etc.). The details of the price will be decided by the Manager (Editor) of the news paper.
Once the details of the parameters chosen by the customer are entered, the application would automatically display the total charges for placing the advertisement.

1.2.4. Functional Requirements:

1. The application should contain the database, which should be server specific.
2. The application should contain two logins -

Admin
Employee

3. Admin will have the following functionality:

Creating, editing and deleting the user profiles

The admin can only have the authority of deciding the cost based on the parameters like length, size, type of the advertisement and based on the page on which the advertisement is to be displayed.

4. The employee will login in to his account and then he can place the order for the customer on the application and can finalize the advertisement.

5. The application would calculate the total charges automatically based on the parameters provided.

1.3. eProject Analysis

1.3.1. Login feature

Firstly, we have focused on the multi-user feature which is based on two types of users: One is Admin and another is Employee. The application which is called “adagent” has a login feature: In the login feature, users can select a login dialog box for inputting user name and password from the menu bar. In this case, the menu bas has at least two menu items.

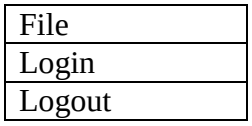

Figure.1 Menu Bar prototype

And we have decided a design for the login dialog box.

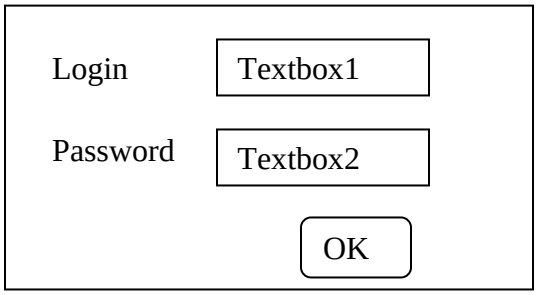

Figure.2 Login dialog

We have decided to use Microsoft SQL 2005 and type 4 JDBC driver of SQL 2005 to access database servers.

Note: In our understanding, there are no requirements for application settings corresponding to database servers in the specification; we have decided to write how to configure applications settings for database server in an install manual. In these cases, though we should create the application installers in the real world. We have decided to skip the step at this time, because it is not the main requirement.

1.3.2. Common features

We have decided to equip a "refresh" button, a "save" button and an accessing progress bar in the status bar.

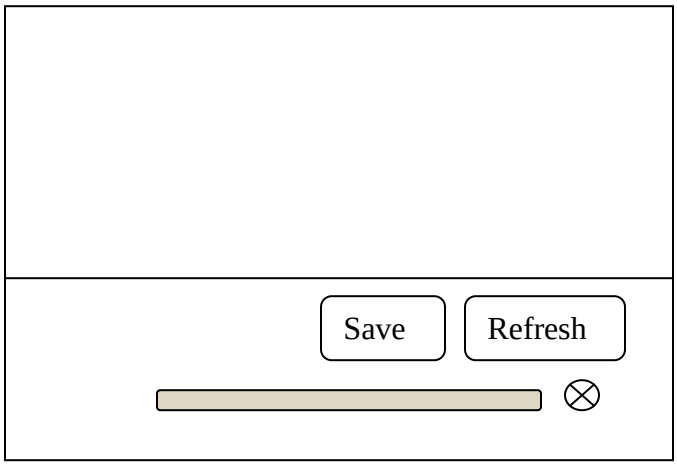

Figure.3 Status panel

1) To save the finalized data in the database server, click on the "save" button.
2) To revert to the original data, click on the "refresh" button.
3) While reverting to data, the progress bar indicates progress.

Kawai has found a custom database desktop application template in NetBeans IDE. We have decided to use the template, because of which the application would involve a mechanism to take and obtain data from database servers, as also to bind swing components with the data obtained.

1.3.3. Definition of Administration User

1) Administration user name is fixed as "admin", password as "123".

2) Employee user management (Admin shall change an employee user table to add, delete, and, rename the users.)
    a. To elaborate:
    b. **To add**: Click on "new" button. The new name will be displayed and the original will be hidden.
    c. **To revert to the original data**, click on "refresh" button.
    d. **To save the finalized date**, click on "save" button.

3) Administration Order Table
    a. Provisions made:
    b. The admin can access the order table by clicking the user name and the password.
    c. **Only the admin has the privilege** of editing, deleting or modifying any information contained in the order table. Here again, clicking on the "refresh" button will display the original information and clicking on "save" button will store the finalized information.
    d. Clicking on any selected client order will display an "Edit Order" dialog box which will show the customer requirements noted by the employee.

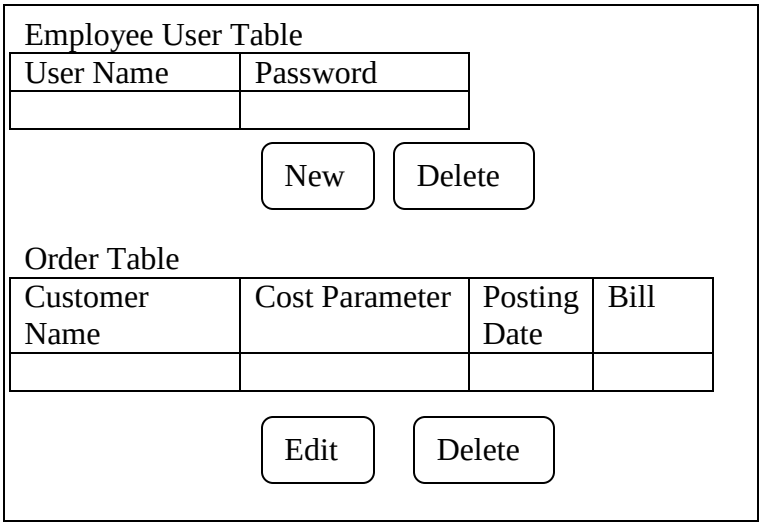

Figure.4 User settings panel

We have decided to fix the Administration user name as "admin", password as "123". The custom database desktop application has a "new" button and a "delete" button as default for each table. We have decided to use the "new" button and the "delete" button for Employee User Table. In the Admin order table, we have decided to change from the "new" button to an edit" button, because employee users can add new orders received from customers, whereas the admin user only shall modify or delete the finalized data for avoiding inconsistency, as and when required..

1.3.4. Definition of cost parameters

We had to decide the detail parameters for Advertisement. We have decided the four parameters mentioned below: content type, page type, size type, and posting date from number 2 in chapter 1.2.2

Content Type

Type name	Description
Text	Text advertisement
Graphics	Graphical advertisement

Page Type

Type name	Description
Front	Front Page
Second	Second Page
Middle	Middle Page
Last	Last Page

Size Type

Type name	Description
Large	Maximum size
Medium	Medium size
Small	Mini size

The above principle is applicable even to the unit fee columns. To elaborate:
any change in the unit fee will hide the original unit fee. Again on clicking the “refresh” button, the original hidden information will be displayed.
In addition we have decided a calculation formula for calculating bills:

Bill = (Content type fee + Page type fee) * Size type multiplex

This formula is fixed by our application. Admin shall change the advertisement costs based on cost items. The panel shown below is a cost items panel.

Content type fee

Text	100.00
Graphics	200.00

Page type fee

Front	500.00
Second	200.00
Middle	100.00
Last	300.00

Size type multiplex

Large	10.0
Medium	5.0
Small	1.0

Figure.5 Cost items panel

Admin can only access the above “User settings panel” and “Cost items panel”

1.3.5. Definition of Employee

Finally, we have decided the features of employee user. Employee users can add a new advertisement order to the order table.

Order Table

Customer Name	Cost Parameter	Posting Date	Bill

New

Figure.6 Employee order panel

1) Employee Order Table
   Provisions made:
   a. The employee has access to the order table to which he can add requisite information regarding new customers.
   b. The employee needs to click the "refresh" button to revert to the original data and click the "save" button to store the finalized data.
   c. If the employee enters the relevant data regarding size, content type, page type etc., the respective/corresponding unit fee will be automatically calculated and inserted in the order table.

Employee should save the finalized data after payment has been received. To add customer order details correctly, we have decided a new order dialog box, shown below..

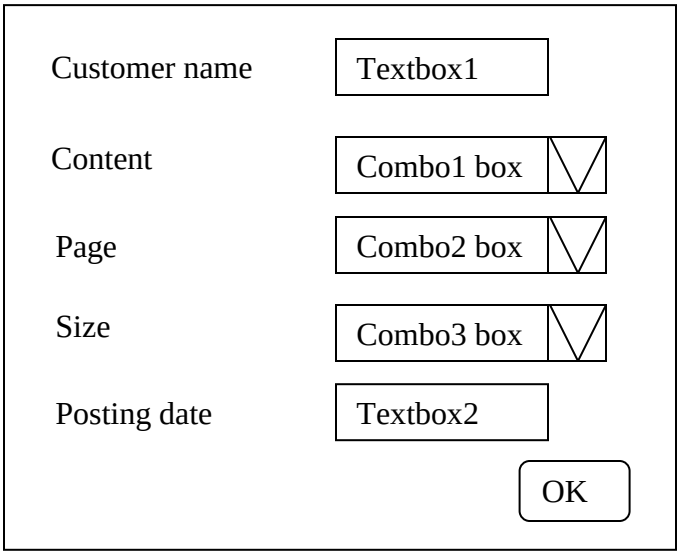

Figure.7 Order dialog box

The above dialog box would be used by admin to edit the finalized data.

1.3.6. Definition of error sequences

We recognized the error sequences after reviewing the information mentioned above.

1) If two admin users login from different places at the same time, persistent date will become inconsistent.
2) There are possibilities for losing the connection of database server, during operations time.
3) There are possibilities of failure to login.

In this case, we have decided not to implement countermeasure mechanisms for 1) and 2), because implementing the countermeasure of 1) will become complicated in the login process. Indeed, we should exclude the other admin login, and we should separate the user in database software for admin users with normal users for employee users. We have decided to assume that only one authorized person knows admin user name and password. Furthermore, if the application is used by intranet, case umber 2) would be rare. Probably, we do not need to consider it. To be honest, these specifications in error sequences are very important in the real world. In case of real products, we should

carefully check these detail specifications with clients. Kawai believes that we cannot satisfy client requirements, if designers neglect these aspects. At this juncture, we have decided to consider only the countermeasure No 3.

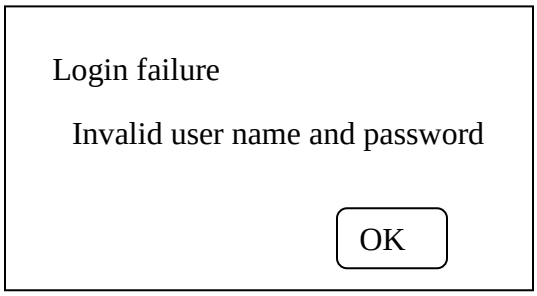

Figure.8 login failure alert box

1.3.7. Definition of reaming

We have decided to use the tab bar for switching the panel, because it is easy to add and remove the panels on login/logout. We have decided that the menu bar has “help” and “exit” to exit application and display copyright.

File	Help
Login	About
Logout	
Exit	

Figure.9 Definition of menu bar

I would like to know your satisfaction level for these specifications.

2. Entity Relationship (ER) Diagram

We decided the ER Diagram from chapter 1.3. Each table has a primary key to avoid inconsistency.

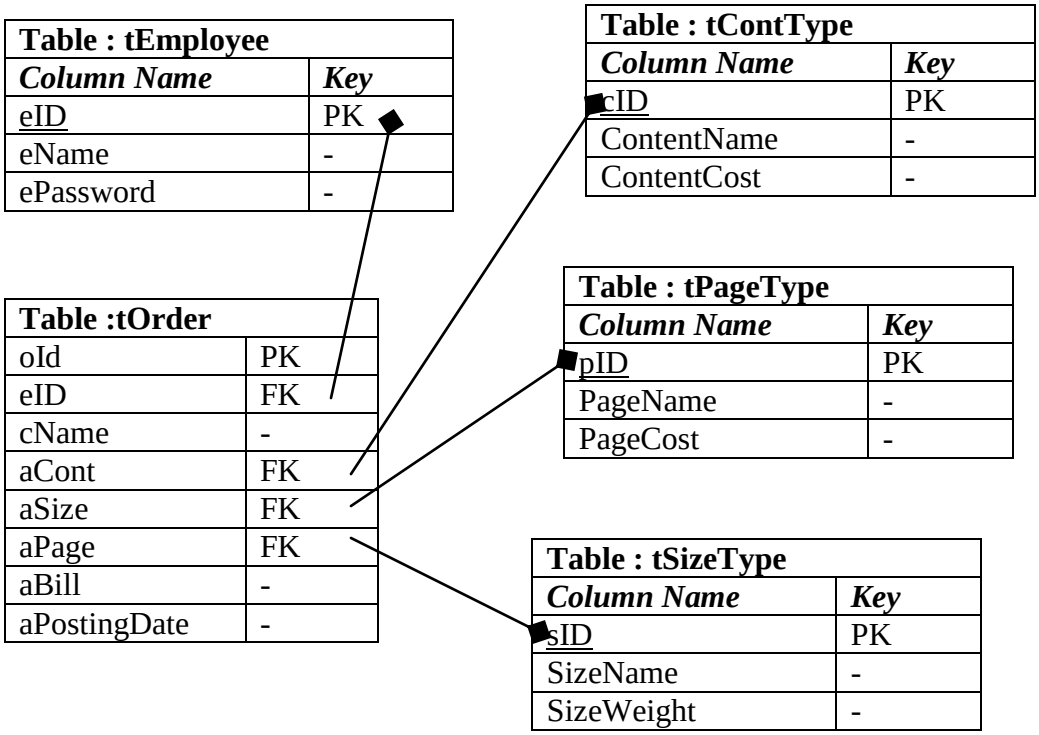

Figure 2.1 ER Diagram

2.1. Database Design/Structure

The table structure in the database is given.

tOrder table containss all order data from customers

Table : tOrder					
Column Name	***Data Type***	***Max Digits***	***Key***	***Null***	***Description***
oID	integer	-	PK	NO	Identity(1,1)
eID	integer	-	FK	NO	tEmployee
aCont	smallint	-	FK	NO	tContType
aPage	smallint	-	FK	NO	tPageType
aSize	smallint	-	FK	NO	tSizeType
aBill	money	-	-	NO	
aPostingdate	datetime	-	-	NO	-

Figure 2.2 tOrder table

tEmployee table contains all employee users information.

Table : tEmployee					
Column Name	***Data Type***	***Max Digits***	***Key***	***Null***	***Description***
eID	integer	-	PK	NO	Identity(1,1)
eName	char	64	-	NO	-
ePassword	char	32	-	NO	-

Figure 2.3 tEmployee table

ContType table contains content type names and fees

Table : tContType					
Column Name	***Data Type***	***Max Digits***	***Key***	***Null***	***Description***
cID	integer	-	PK	NO	Identity(1,1)
ContentName	char	16	-	NO	-
Cost	money	-	-	NO	-

We have already decided default values

cID	Content Name	Cost
1	Text	200.00
2	Graphics	500.00

Figure 2.3 tContType table

PageType table contains page type names and fees

Table : tPageType					
Column Name	***Data Type***	***Max Digits***	***Key***	***Null***	***Description***
pID	Integer	-	PK	NO	Identity(1,1)
Page Name	Char	16	-	NO	-
Cost	Money	-	-	NO	-

We have already decided default values

pID	Page Name	Cost
1	Front	1000.00
2	Second	700.00
3	Middle	500.00
4	Last	800.00

Figure 2.3 tPageType table

SizeType table holds size type names and mulitiplex

Table : tSizeType					
Column Name	***Data Type***	***Max Digits***	***Key***	***Null***	***Description***
sID	Integer	-	PK	NO	Identity(1,1)
Size Name	Char	16	-	NO	-
Size Weight	float	-	-	NO	-

We have already decided default values

sID	Page Name	Cost
1	Large	10.0
2	Medium	3.0
3	Small	1.0

Figure 2.3 tSizeType table

3. Architecture and Design in the Project

Figure 3.1-3.3 shows the architecture of the project.

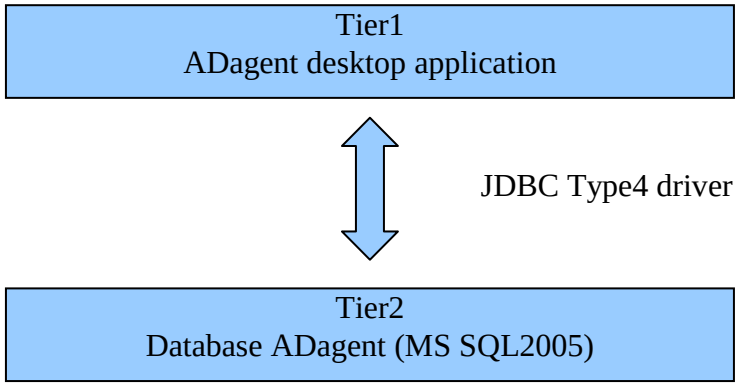

Figure 3.3: Architecture of the project

4. User Case

4.1. Administrator

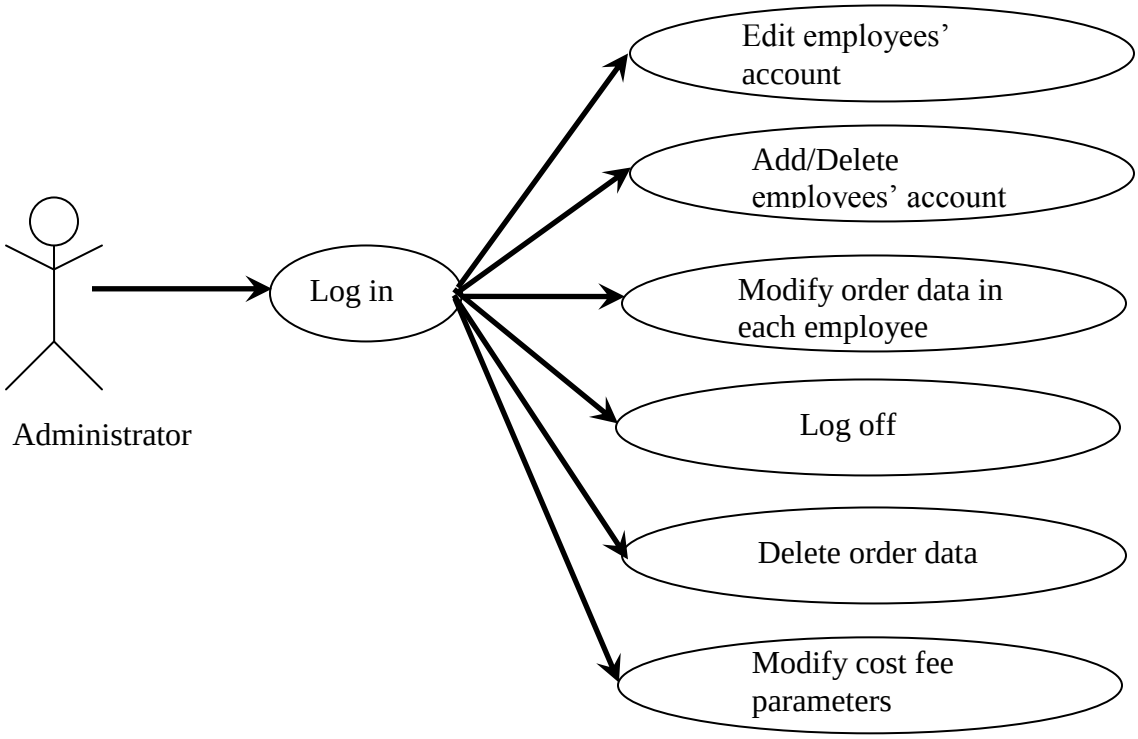

Figure 4.1: Administrator use case

4.2. Employee

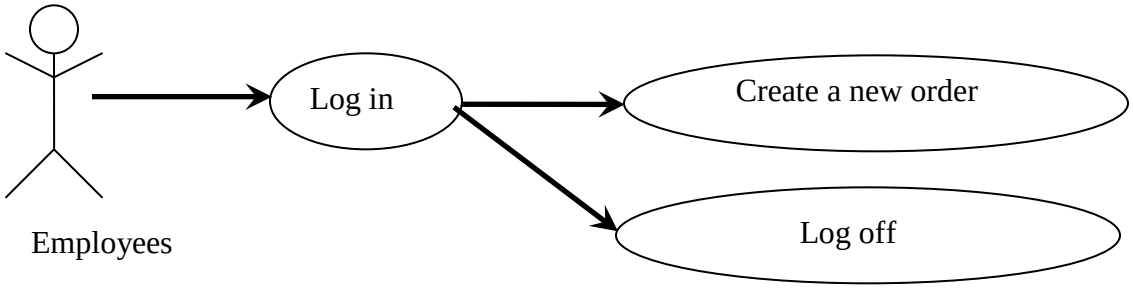

Figure 4.2: Employees use case

5. Data Flow Diagram (DFD)

We describe entity level in our application.

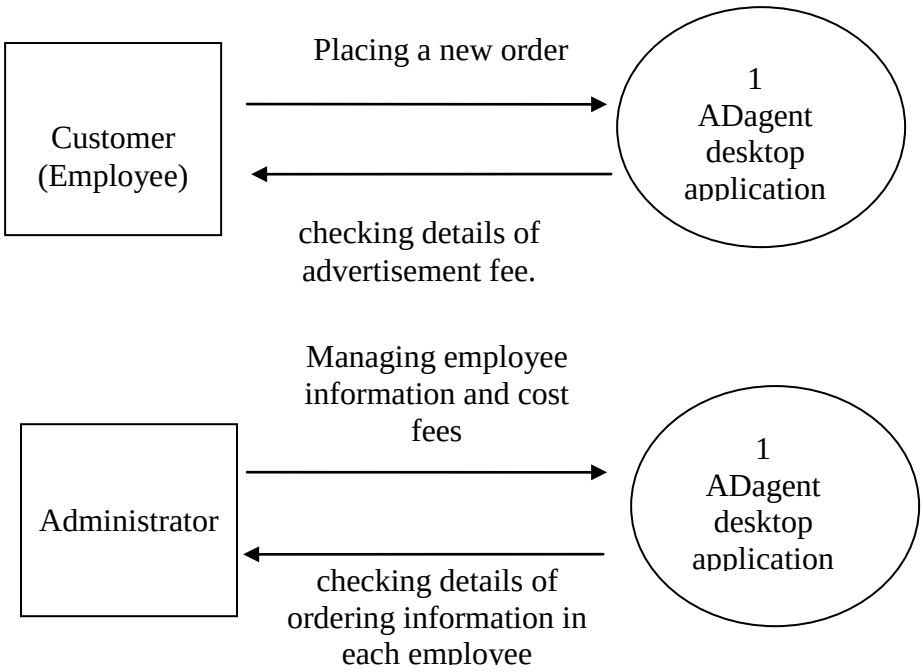

Figure 5.1: DFD LEVEL 0 – ADagent

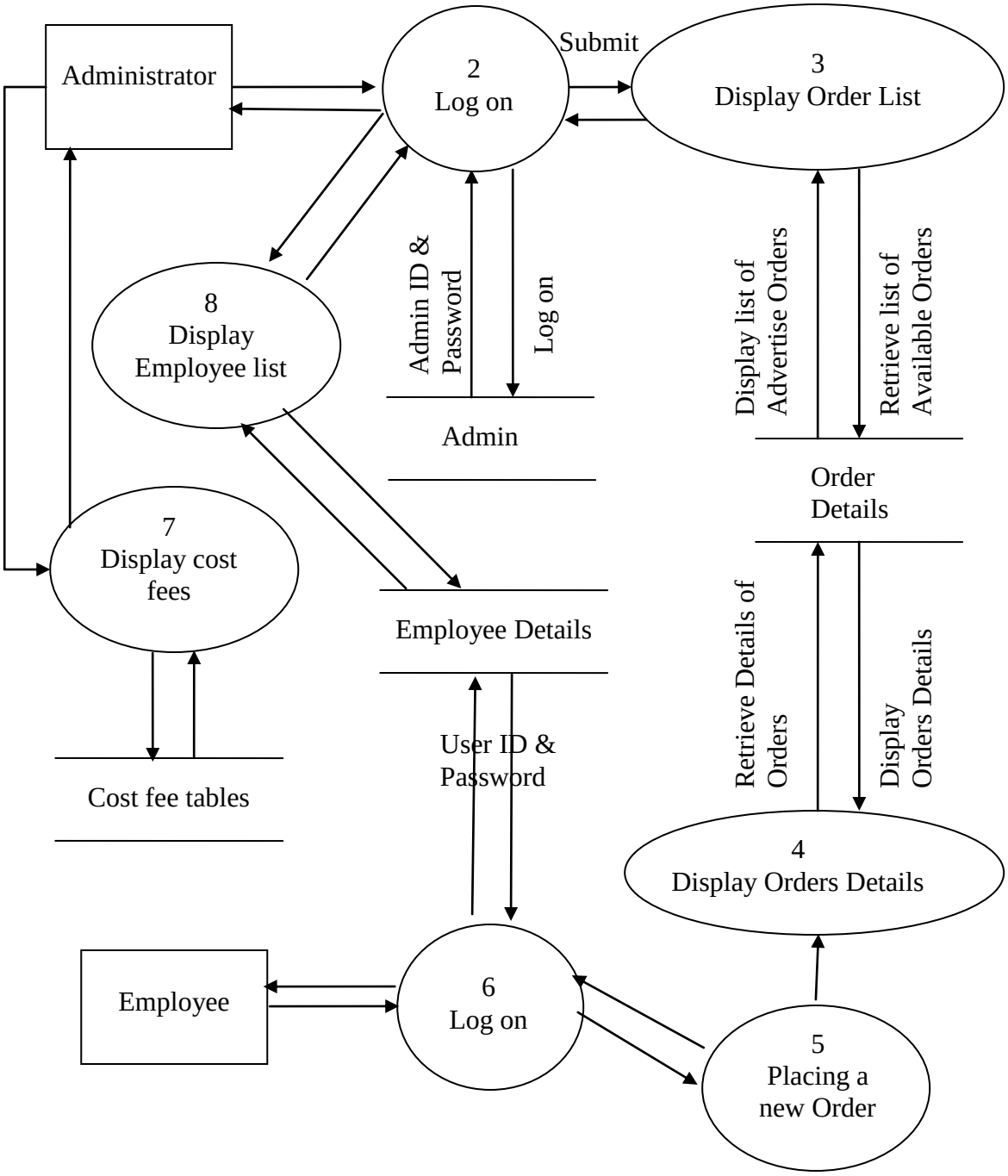

Figure 5.2: DFD LEVEL 1 – ADagent desktop application

6. Flowchart

6.1. Booting up

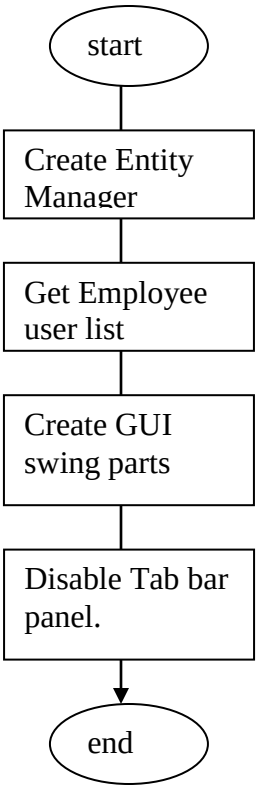

Figure 6.1 shows the flowchart for the application.

6.2. Login

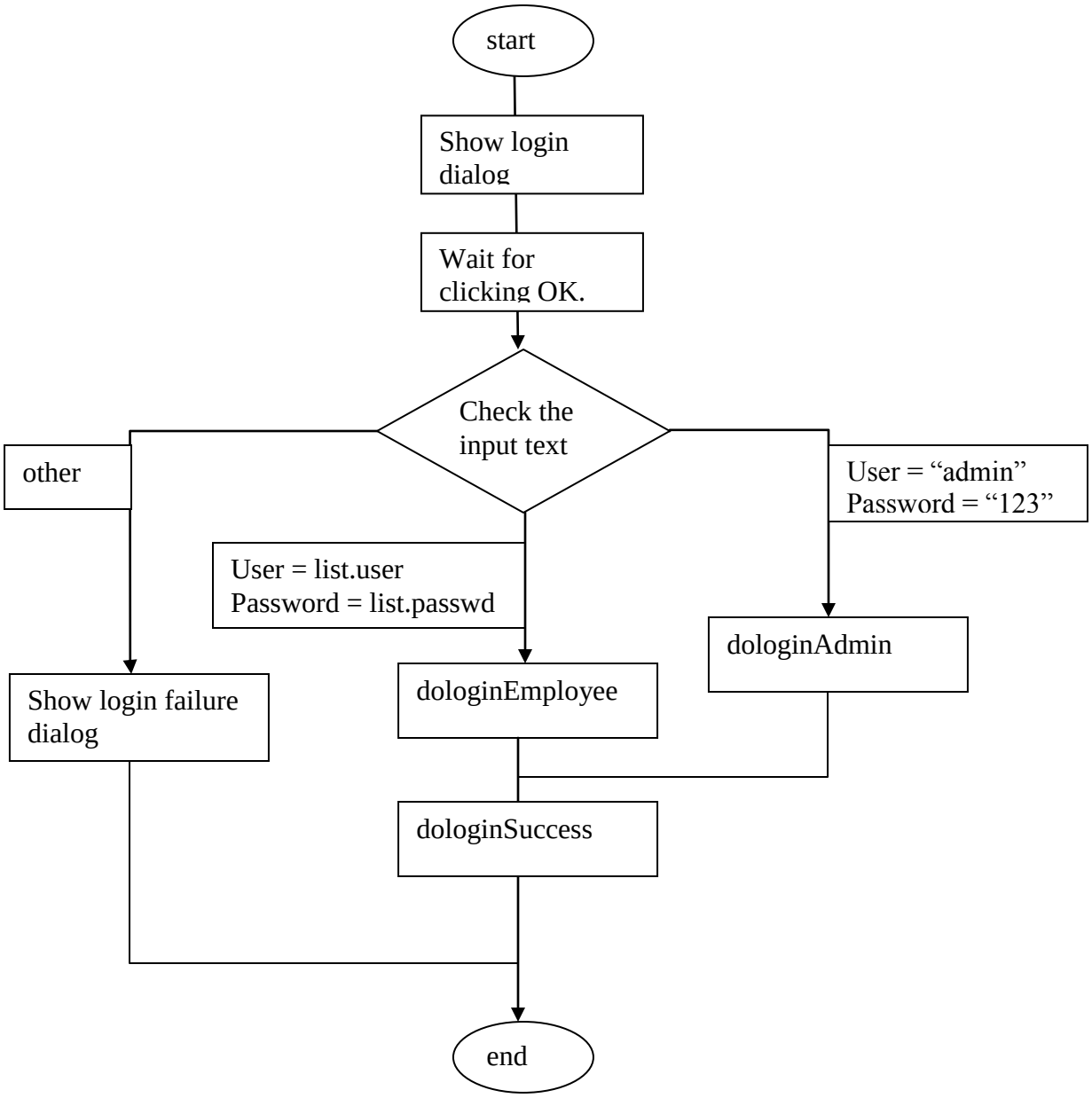

Figure 6.2: Flow Chart for Comparison

6.3. editCustomerOK

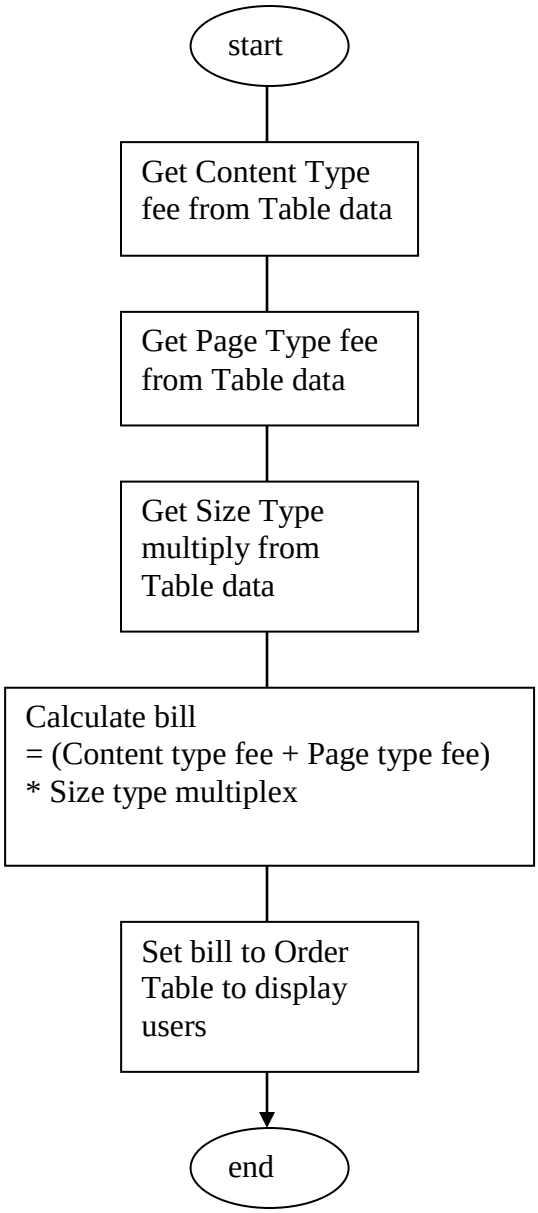

Figure 6.3: Flow Chart for editCustomerOk

7. GUI Standards Documents

ADagentView.java

Used Swing Parts	*Value name*
JFrame	FrameView
JTabbedPane	frameTab
JPanel	empPane
JPanel	subPane
JPanel	mainPane
JPanel	statusPanel
JDialog	loginDialog
JDialog	alertDialog

CustomerOrder.java

Used Swing Parts	*Value name*
JDialog	-
JLabel	jLabel4
JTextField	jTextField1
JLabel	jLabel5
JComboBox	contComboBox
JLabel	jLabel6
JComboBox	pageComboBox
JLabel	jLabel7
JComboBox	jComboBox3
JLabel	jLabel8
JFormattedTextField	jFormattedTextField1
JLabel	jLabel9
JButton	jButton1

8. Interface Design Documents

Class Name	*Description*	*Controls on the Document*
ADagentView	Main Frame Window	ADagentView.java
empPane	Employee User Order Panel	ADagentView.java
subPane	Admin User Cost Fee Panel	ADagentView.java
mainPane	Admin User Manage Employee user	ADagentView.java
loginDialog	Login Dialog	ADagentView.java
alertDialog	Show to fail to login	ADagentView.java
CustomerOrder	New/Modify customer advertisement orders	CustomerOrder.java

9. Customer Requirement Specification (CRS)

9.1. Client:

ADagent (advertisement order managed software)

9.2. Business/Project Objective:

To create an application named ADagent using NetBeans IDE 6.8/6.9

9.3. Input/Output:

- Input/output for desktop application

9.4. Hardware Requirements:

- A minimum computer system that will help you access all the tools in the courses in a Pentium II 266 or better

9.5. Operating System:

- Windows XP with JRE5 or above.

9.6. Software Requirement:

- SQL Server 2005
- Java runtime environment 5 or above

10. Task

Project Ref. No.:		Activity Plan Prepared By:	Date of Preparation of Activity Plan:			
Sr. No.	**Task**		**Actual Start Date**	**Actual Days**	**Team Member Names**	**Status**
1	Definition of detailed specification		23th Aug, 2010	2		Completed
2	Creation of prototype application		25th Aug, 2010	1		Completed
3	Programming		26th Aug, 2010	5		Completed
4	Test		30th Aug 2010	2		Completed
5	Create Documentations		28th Aug, 2010	4		Completed