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NEAR EAST UNIVERSITY

FACULTY OF ECONOMICS AND ADMINISTRATIVE SCIENCES

DEPARTMENT OF COMPUTER INFORMATION SYSTEMS

2007/2008 FALL TERM
CIS 400
(GRADUATION PROJECT)

RESTAURANT AUTOMATION SYSTEM

SUBMITTED TO : DEPT OF. CIS

SUBMITTED BY : Burak YEŞİLÖREN (20031895)

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I. ACKNOWLEDGEMENTS

This project will be prepared by me, with advice of Dr.Yalçın AKÇALI and Dr. Mustafa MENEKAY to be submitted to Department Of Computer Information Systems.

Also I would like to thank all my CIS department lecturers for supporting me in learning how to program.

I have to thank my family for their support in my educational life in Near East University.

I'm so glad to be a student of that department and educate with lecturers like you.

II. ABSTRACT

The Restaurant automation mainly accomplishes tasks such as reservation,taking orders,stock checks,producing products,employee and customer management,and provides the user with various reports.

There are two types of users of the system which are Manager and Case User.

The Manager has full authority on personnel, customer, stocks, and producing and also it can make reservations, take orders and view reports about these processes so basically it can perform all the jobs in the program.

The Case User has authority on reservation management,customer management and sales. And it can view the reports about these processes.

The reason for me to choose this project subject is to make it easier to manage a restaurant infront of computer.

On the market you can find very various restaurant automation programs.Its a competitive area but the best option for me to choose that subject I will use on that project on my business.

The basic usage of the program is like this: the user or manager must logs on the program.If the manager logs on he or she can use manager menu to manage customers,employees, products, menus, reports and also he or she can use main menu for to make reservation or selling.If the case user logs on the program he or she directly to guide main menu which he or she can control reservations and sales. And also he or she should be recorded to information about customers,reservations.

If the case user logs on he or she directly to guide main menu.Than there he or she can make reservation process by selecting the tables.There are reservation controls that limists the

users.When he or she make a reservation at the time he or she can active the customer,open an order,or he or she can cancel the reservation.

When the customer comes case user activate his or her acoount for take their orders.

Case user takes orders and program will automatically calculate the customers bill.The bill has to be opened untill the customer wants to check.when he or she wants to pay the program calculate invoice and close table.

III. INTRODUCTION

The developing technology of computer seems to be growing rapidly and will not stop or slow down. Today the computers are parts of all our lives. I started to use the computer and internet in 1996, but from then to now everything is changed, and continues to changing. Everyday a new technology is discovered and new hardware parts are invented. All the developing companies should be adapted the new developing technology, in some way. Some has web sites; some has computers in their stores and using software for keeping control of their work. Even small businesses are started to use the computer technology in the business.

In restaurants controlling every things by hand is not possible.

The program is designed to work only on one computer but if it is wanted to work on more than one computer, due to that I have used Sql server it can be used on more than one computer if a network is made and the program should be compatible with it.

REQUIRED DATA

1. **Customer Data**: This data contains name, surname, customer type and phones of the customer. The Case User / Manager can manipulate the customer record for reservation or sale process.
2. **Reservation Data**: These data are prepared by customer wants and information of reservations. The Case User / Manager can manipulate the customer reservation for customer wants and reservation data are used in the sale processes.
3. **Employees Data:** This data contains name, surname, personnel type, address and phones of the personnel. The Manager can manipulate the employee record.
4. **Product Data :** This data contains name of product,type of product ,quantity type of product, quantity of product, cost per quantity type, purchase date of product.,
5. **Supplier Data :** This data contains supplier name, supplier address, supplier telephone, suppliers mail, supplier credit ,suppliers debit and system automatically calculate suppliers balance.,
6. **Reservation Data :** This data contains reservation date, reservation start time, reservation finish time ,table information, reserver name , reserver telephone informations.
7. **Order Data :** This data contains table number, order number, order information, order date.

THE AIM OF THE PROJECT

The restaurant automation is going to be used by Case User or Manager .

The main aim of this project is to help the Case User or Manager to work efficiently and make easier to product management by manager, customer management, reservation management, easy stock control.

Nowadays restaurant automation system become popular. Its really increase of real time work performance. But there are many type of restaurant information systems can be found on the market.

IV. DESIGN OF THE SYSTEM

EXPLANATION

THE PROCESSES OF "Restaurant Automation System"

1. **Employee Process**: This process is only used by. The employee id is automatic. And the other fields will be name, surname, employee department, phones of the employee ,address of the employee, city of the employee . The Manager can manipulate the Employee record for add, delete or update processes.
2. **Customer Process**: The Manager or Case User enters customer information and this information contain name, surname, telephone, address, city and customer id.
3. **Supplier Process :** This process can control by Manager. He or she add and update or delete supplier if supplier has no credit on system . Fields it contains supplier id, supplier name ,supplier address, supplier credit supplier debit, supplier balance.
4. **Purchase Process :** This process used to buy products from suppliers. Its automatically increase suppliers credit and we add new products to our system. Purchase process can only control by Manager. Data fields are product id ,product name, product quantity ,product type, product cost, purchase date.
5. **Order And Reservation Process :** This process can make on main menu .Manager and Case User can use that process.
    a. **Get Reservation Information :** This process made for collect reservation information from customers .Case User and Manager can do that process.That process contains reservation date, reservation start time, reservation finish time, table number fields.

b. **Get Customer Information :** That process used to get information of customer while we make reservation.

c. **Check Available Tables:** That process work for to check reservation information and table information.

d. **Order Process :** With that process case user or manager take orders coming from customers and give orders to system.

6. **Payroll Information :** With that menu we can make payments to supplier or employee.
7. **Invoice Process :** This process contains orders invoice ,purchase invoice.

The minimum requirements of the system are as follows;

Intel Pentium III 2.0 GHz or AMD Athlon XP 2000+ (1.6 GHz)

256 MB Ram

40 GB HDD

15'Monitor

Windows XP Home Edition

52 X CD-ROM

The recommended requirements of the system are as follows;

Intel Pentium IV 3.2 GHZ or AMD Athlon 64 Bit Edition 3800+

2048 MB Ram

80 GB HDD

17'Monitor LCD

Windows XP Professional

DVD-RW

I have used Borland Delphi 2006 programming language for writing this program and Microsoft Sql Server 2000 database that has connection with Borland Delphi 2006.

THE PROJECT BOUNDRIES

- The program will be designed to run on one computer.
- The program will not work under Linux or other operating systems. Only Microsoft Windows 2000 and upper will work the program properly. Microsoft Windows XP is recommended.
- The user should have some computer knowledge.
- There should be a printer connected to the computer so that the system can print out invoices or reports.

TECHNICAL FEASIBILITY

The hardware and requirements that are necessary for the system are as follows:

- Computer
- Printer

OPERATIONAL FEASIBILITY

- The users should be educated about the usage of the new system.
- The people who work on the system must be given technical support.
- The program should be developed according to the users wants.

ECONOMICAL FEASIBILITY

- The advantage of using my restaurant automation program as economical result is; it will be cheaper than the other ones.
- It will be very easy to use.
- An extra hardware or software is not needed to use the program.
- Another advantage is saving time. With saving time we can increase our service performance.
- By using this system it minimizes the risk of making mistakes.

THE REQUIREMENT DETERMINATION

The requirements made by the users and customers are as follows:

- To increase service.
- To see / know the orders that already made by customer.
- To use only one program to control all processes.
- To use access rights and passwords.

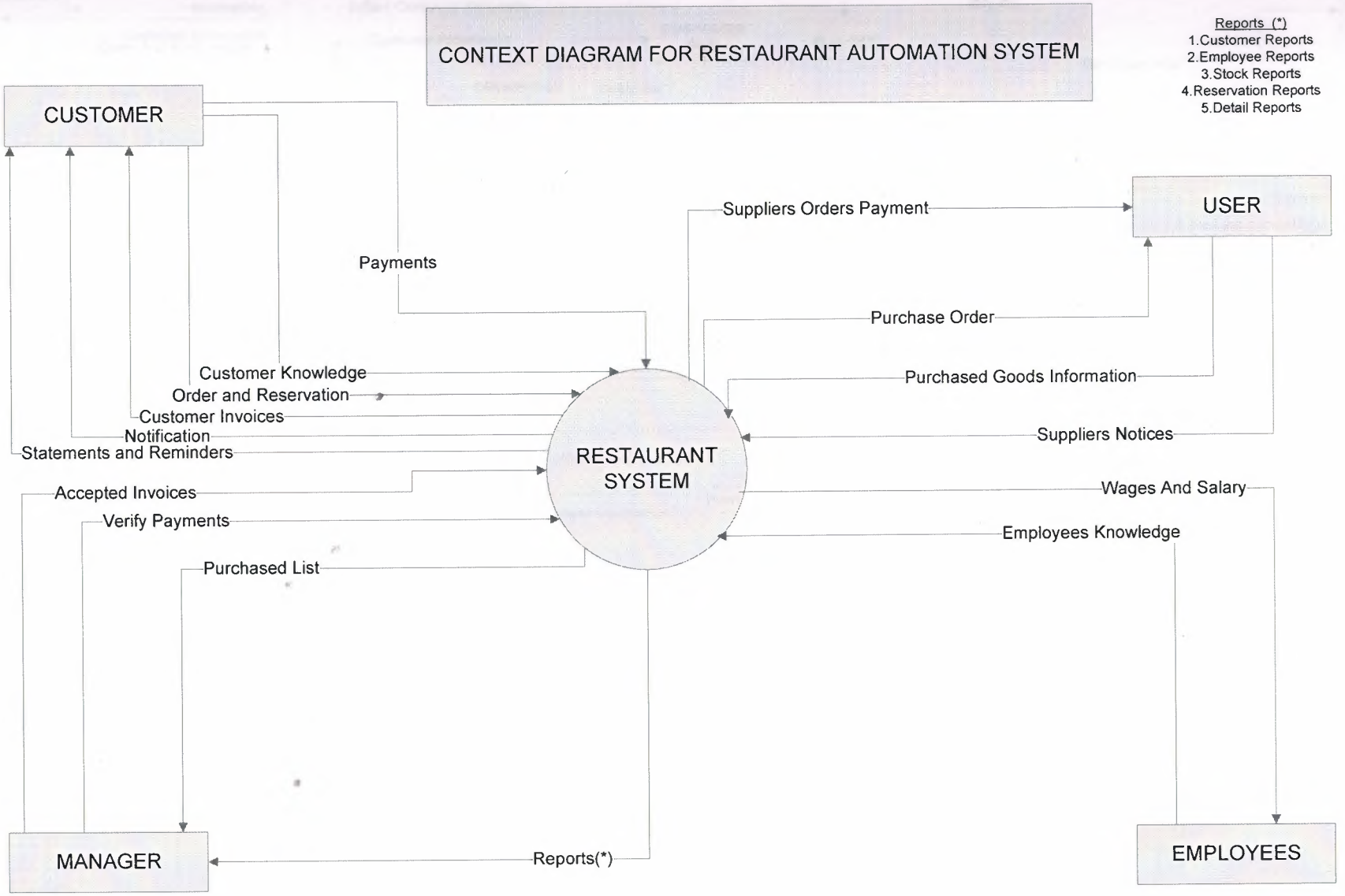
THE OLD SYSTEM CAPABILITIES

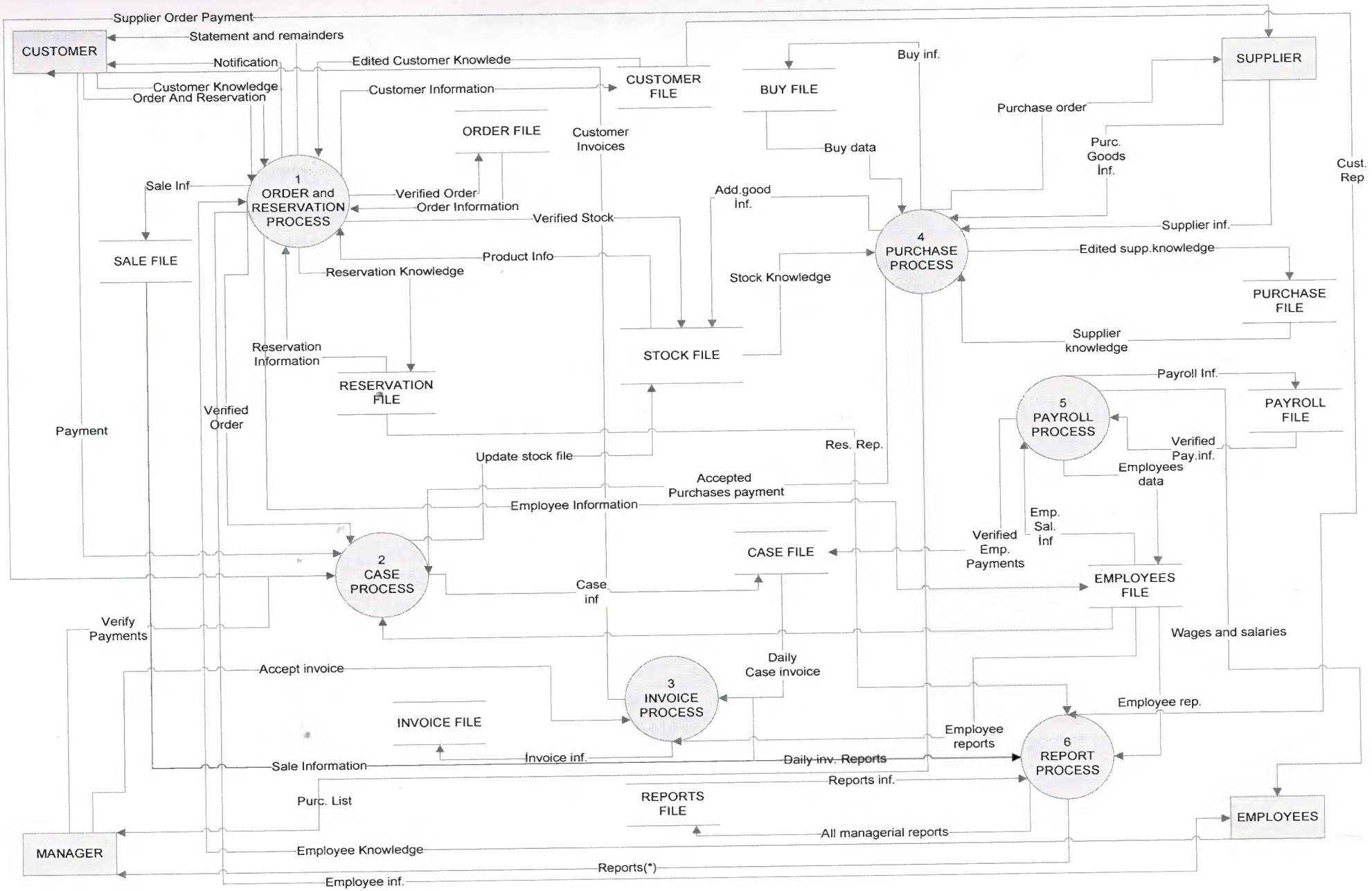
- There was an existing software but its complex and old.
- Sometimes the data got lost on the database.

THE NEW SYSTEM'S PROVIDENCES

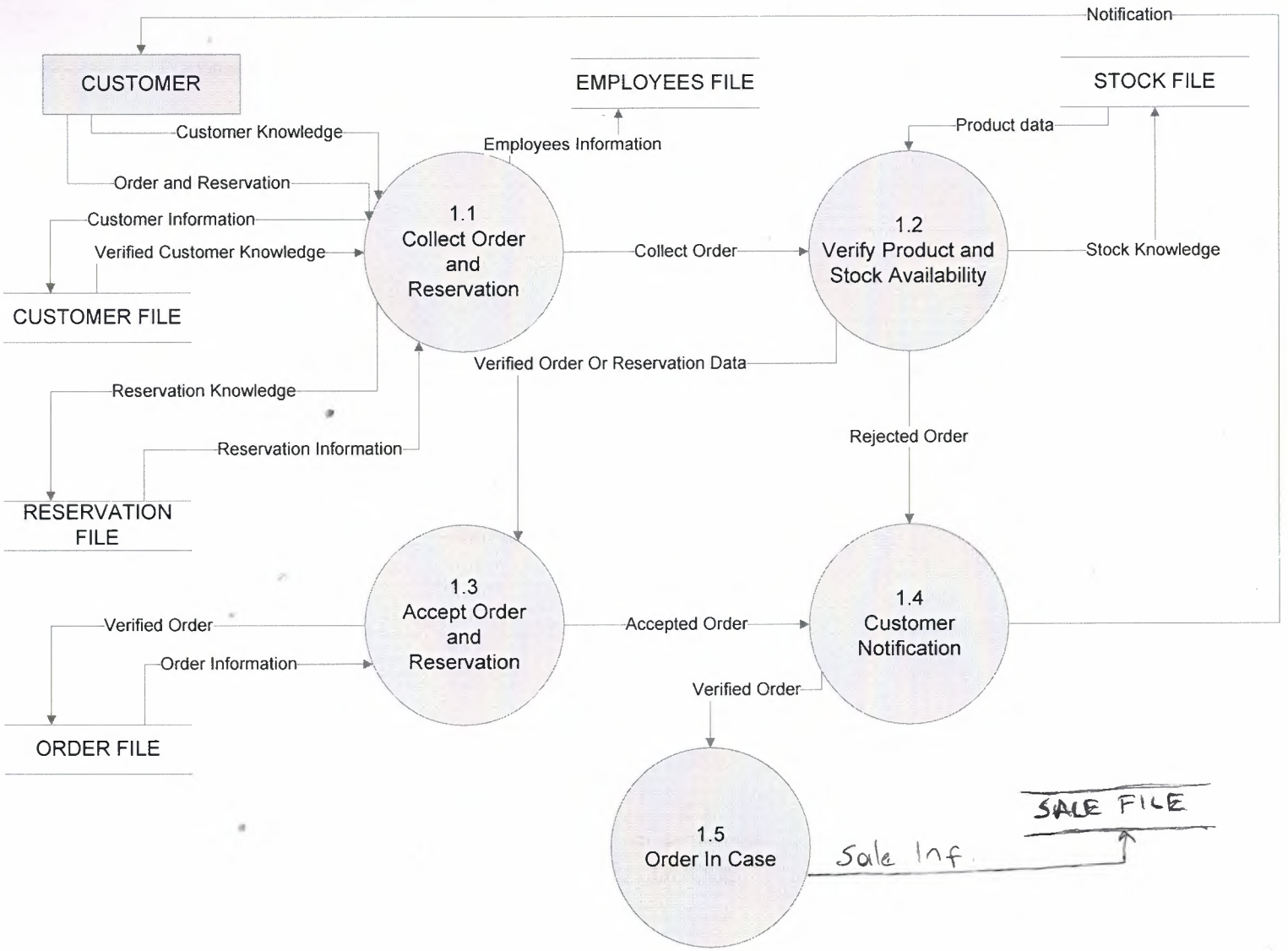
- The new system should be trustable.
- The system will only be accessed by the authorized users.
- The database tables should include all information about the restaurant system.

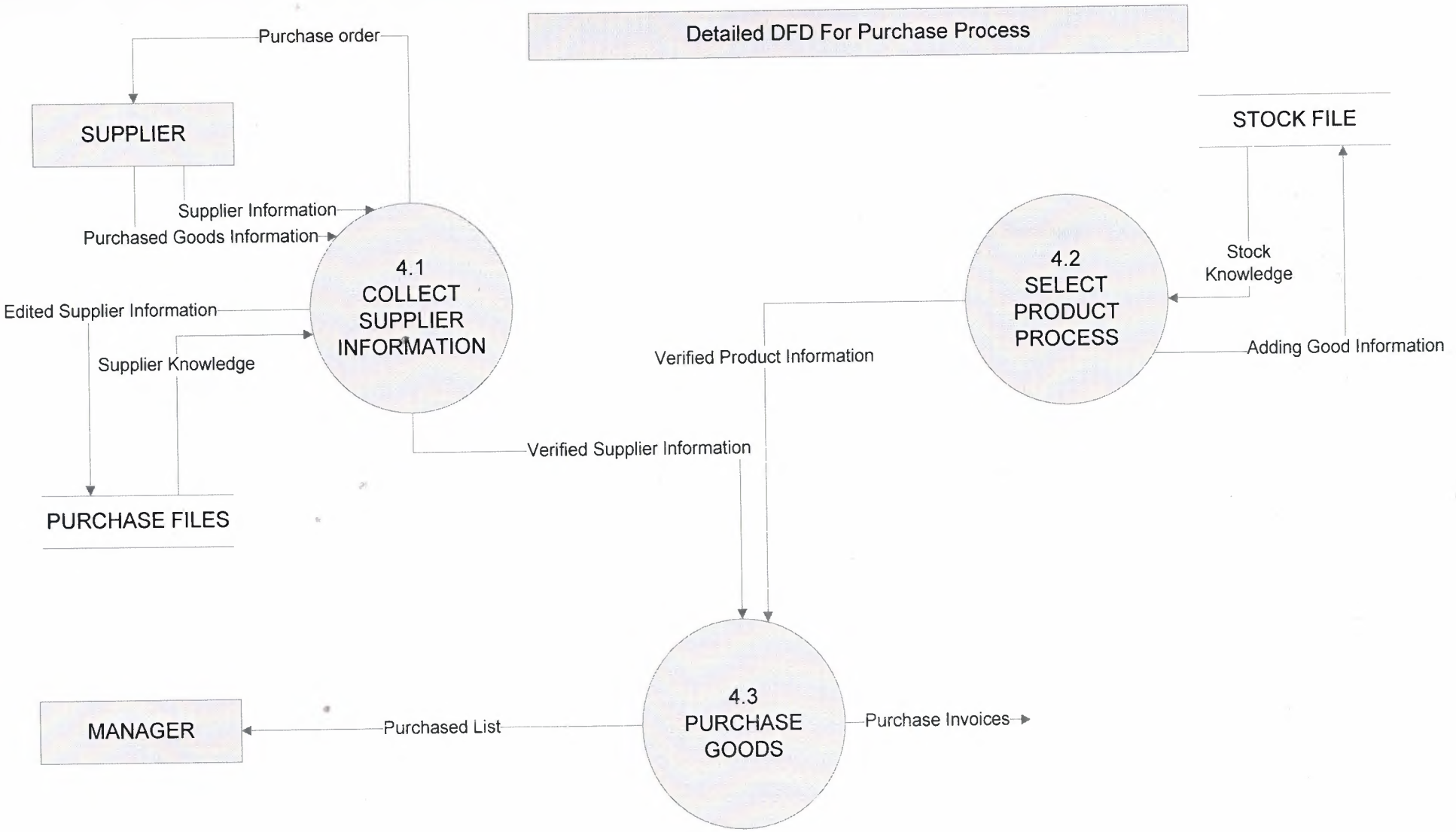
DATA FLOW DIAGRAMS



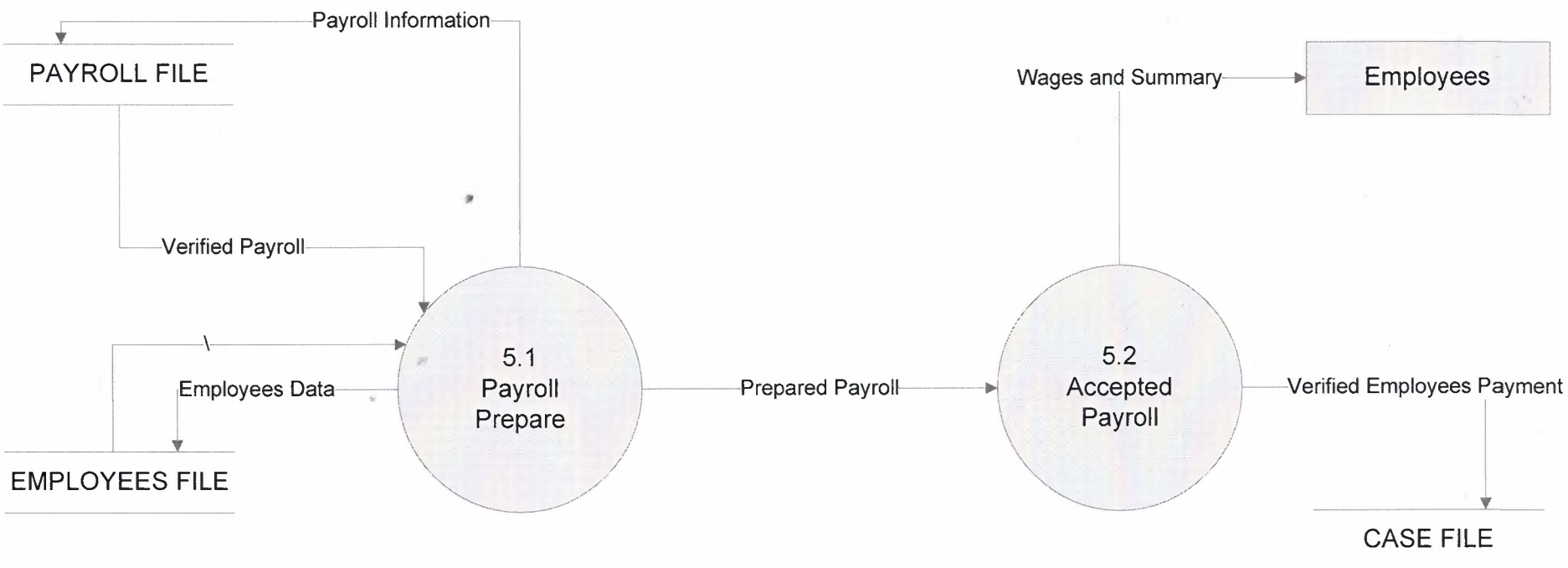

Supplier Order Payment
CUSTOMER
Statement and remainders
Notification
Edited Customer Knowlede
Customer Knowledge
Order And Reservation
Customer Information
CUSTOMER FILE
BUY FILE
Buy inf.
SUPPLIER
Purchase order
ORDER FILE
Customer Invoices
Buy data
Purc. Goods İnf.
Cust. Rep
Sale Inf
1 ORDER and RESERVATION PROCESS
Verified Order
Order Information
Verified Stock
Add.good İnf.
4 PURCHASE PROCESS
Supplier inf.
SALE FILE
Product Info
Reservation Knowledge
Stock Knowledge
Edited supp.knowledge
PURCHASE FILE
Supplier knowledge
Reservation Information
STOCK FILE
RESERVATION FILE
Payroll Inf.
PAYROLL FILE
5 PAYROLL PROCESS
Verified Order
Payment
Res. Rep.
Verified Pay.inf.
Update stock file
Employees data
Accepted Purchases payment
Employee Information
Emp. Sal. İnf
Verified Emp. Payments
CASE FILE
2 CASE PROCESS
Case inf
EMPLOYEES FILE
Verify Payments
Wages and salaries
Daily Case invoice
Accept invoice
3 INVOICE PROCESS
Employee rep.
INVOICE FILE
Employee reports
6 REPORT PROCESS
Invoice inf.
Daily inv. Reports
Sale Information
Reports inf.
Purc. List
REPORTS FILE
EMPLOYEES
All managerial reports
MANAGER
Employee Knowledge
Reports(*)
Employee inf.

Detailed DFD For Order And Reservation Process

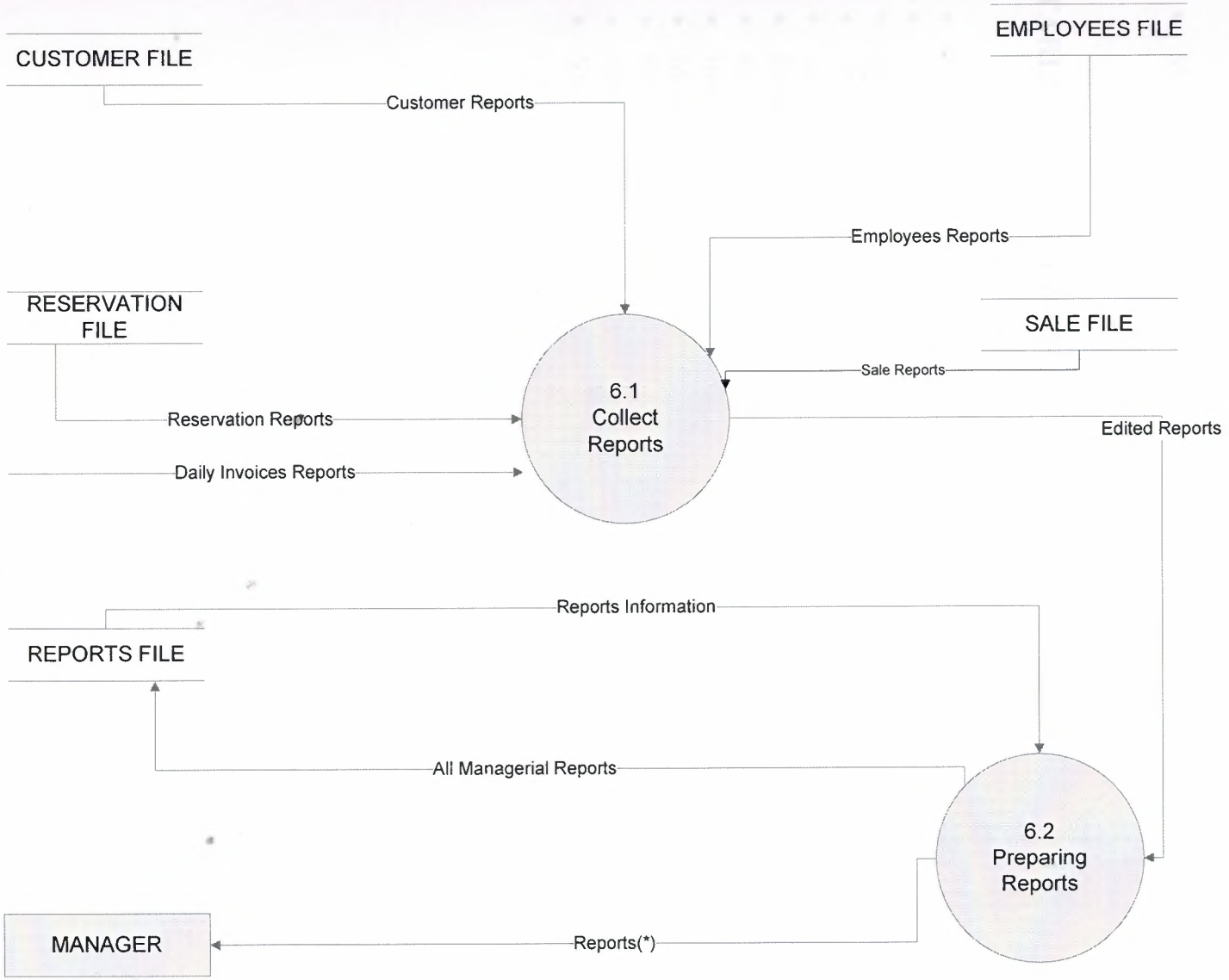



Detailed DFD For Purchase Process
Purchase order
SUPPLIER
Supplier Information
Purchased Goods Information
4.1
COLLECT
SUPPLIER
INFORMATION
Edited Supplier Information
Supplier Knowledge
PURCHASE FILES
STOCK FILE
4.2
SELECT
PRODUCT
PROCESS
Stock
Knowledge
Adding Good Information
Verified Product Information
Verified Supplier Information
4.3
PURCHASE
GOODS
MANAGER
Purchased List
Purchase Invoices

Detail DFD For Payroll Process



Detailed DFD Fcr Report Process



DATABASE DESIGN

DATABASES

- Main Database

TABLES ON MAIN DATABASE

- Buy
- Customers
- OrderDetail
- Orders
- Sell
- Reservation
- Employees
- Invoice
- Menu
- Payroll
- Purchase
- Stock

Buy
buy_id
prd_id
b_prd_name
b_purc_date
b_cost
b_quantity
b_bill_no
supp_id
b_quan_type
Stock
prd_id
supp_id
menu_id
category
prd_name
prd_instock
quan_type
prd_cost
purc_time
min_level
Menu
menu_id
menu_name
category
cost
sell_price
prd_id
item1_name
item1q
item2_name
item2q
item3_name
item3q
item4_name
item4q
item5_name
OrderDetails
orddet_id
order_id
order_no
prd_id
sell_date
menu1
menu1q
menu2
menu2q
menu3
menu3q
menu4
Sell
case_id
cust_no
menu_id
cost
tax
pay_type
emp_id
table_no
card_no
res_id
order_id
Invoice
invoice_id
customer_id
supp_id
invoice_time
emp_id
invoice_notes
payment_id
order_id
invoice_cost
case_id
buy_id
Purchase
supp_id
supp_name
supp_add
supp_city
supp_tel
supp_mail
payment_id
supp_cred
supp_deb
supp_bal
Customer *
customer_id
cust_no
cust_name
cust_sa
c_city
cust_tel
cust_mail
cust_add
Payroll
payment_id
supp_id
payment_quantity
payment_date
payment_time
p_creditcardtype
p_cardno
p_cardname
p_cardlastdate
emp_id
invoice_id
Employees *
emp_id
emp_dept
emp_name
emp_surn
emp_tel
emp_add
emp_startdate
emp_wage
emp_birth
payment_id
emp_pass
orders
order_id
customer_id
emp_id
order_no
orddet_id
table_no
case_id
total_p
Reservation *
res_id
customer_id
res_name
emp_id
res_date
res_stime
res_ftime
reserved_time
res_tel
table_no

V. USER MANUAL

USER GUIDELINES

1- SECURITY: This process makes sure that no one with out the username and password of the Case Users and Manager can access the system. If the employee name or password is entered incorrectly the system will show an error. If entry made 3 times incorrect system automatically will shut down.

2- MANAGER MENU: The people who are managerial department, has got all the authority over the system. Due to this form, the manager users can manipulate every thing they wish. Differently to the case user's admin can access stock, personnel, menu creation forms. They can also see the reports which the users cannot observe.

3- CUSTOMERS: To record new customer or update existing customers, this process will be used. Firstly all information about the customer will be entered then click the add button. When the admin or user wants to know about a customer, this form will be very helpful. All the user has to do is to enter the name or id of the customer and then click the search button. Every necessary detail about the customer will be shown on the form.

4-STOCK :That process used t keep the records of the purchased products.With that products in my system ı prepare new products like a production.Because restaurant's doesnt buy prepared foods they prepared theirselfs.On that step we firstly choose supplier and its products that we can buy.We choose product define a category which will use about to create menu with that products.When we buy some products from suppliers their account change

automatically.And the products quantities of course increase in our stocks.when we buy products we define product cost by purchasing type of product.For example if we buy 1000 gram we define only 1 gram of cost of that product.

5- RESERVATION: All the users can access this form and make reservations according to the customers wants. They can change and delete the details of the existing reservations. And also they can list the reservations on the selected days.

6- PERSONNELS: To record new personnel or update existing personnel, this process will be used. Only manager can access this form. Firstly all information about the personnel will be entered then click the add button. For other processes there are other buttons on the form. When the manager wants to know about personnel, this form will be very helpful.The manager has to do is to enter the name,surname or id of the customer and then click the search button. Every necessary detail about the Personnel will be shown on the form.

7- SALE: All the authorized users can access this form and make sales according to the customers wants. Total price can be find automatically by system.And of course when we sell something we decrease products from stocks.

8-CREATING A PRODUCT : As i told above we buy raw materials and we produce new prodducts.With that menu you can make this things.It is useful interface to determine which product supplied by which supplier and make the deleting and adding new products to the system easily.

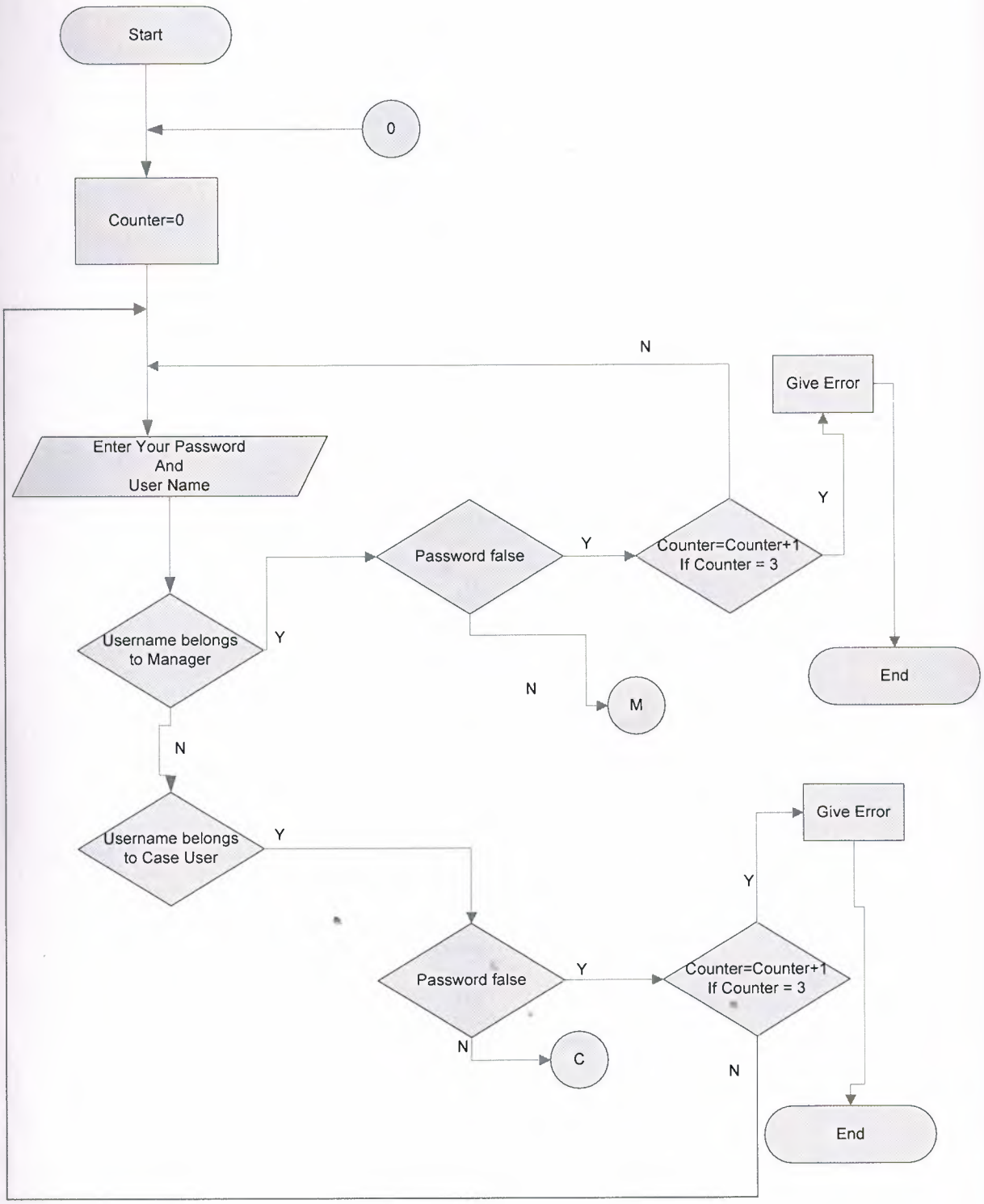
9-CREATING MENU : After creating menu we design the products for to sell.we can put that products to the list or we can use them in the menu and sell them over there.

10- REPORTS: This process gives the manager useful and meaningful information about the customers, reservations, stoks, personnels, products,sales on specific dates.Provide well formd easy to understand form of informations.

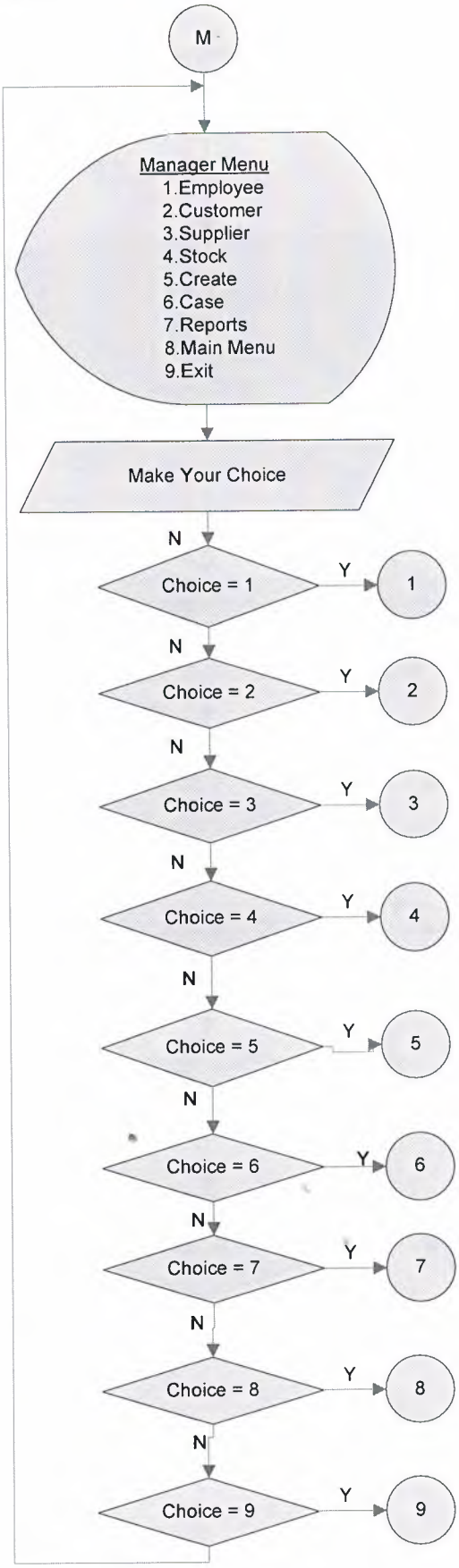
11-CASE USERS : That users has limited by the program.Manager defines when he or she want to approve new employee to the job his or her department.Only case department workers and the manager can authorized to the system.Of course there is not the same authority on the system like manager but he or she can do lots of things very easily by using that system.

USER FLOWCHART

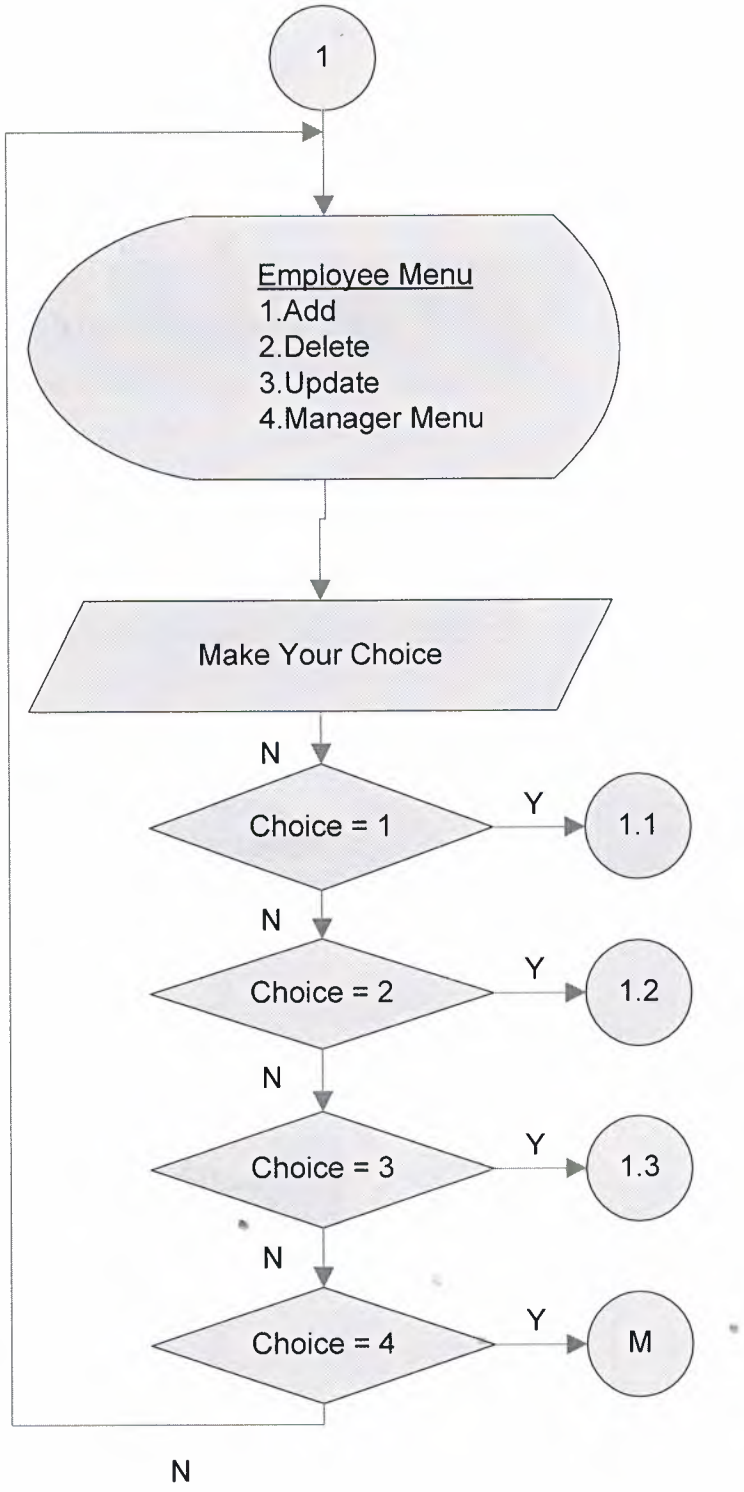
PASSWORD ENTRY



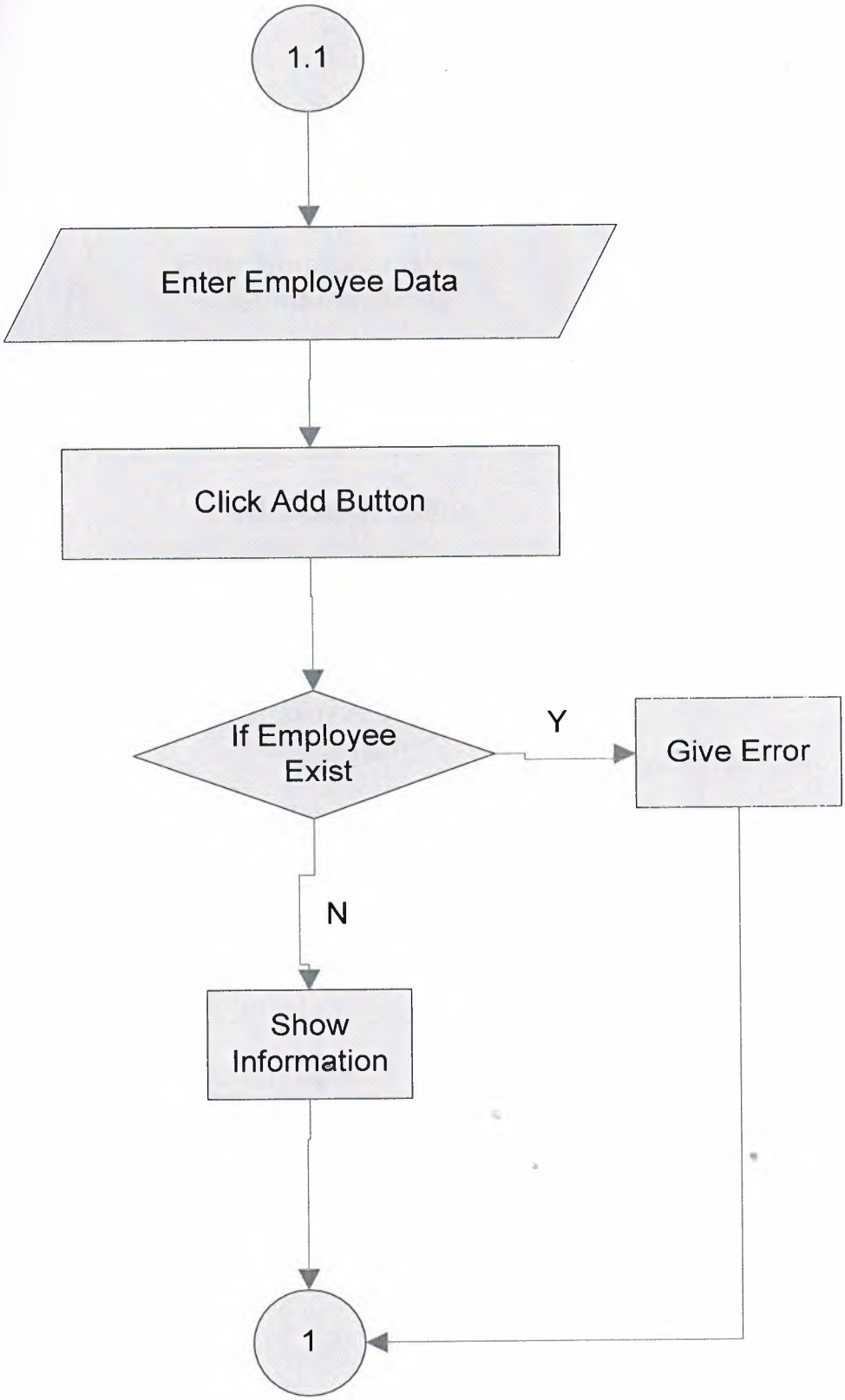
MANAGER MAIN MENU



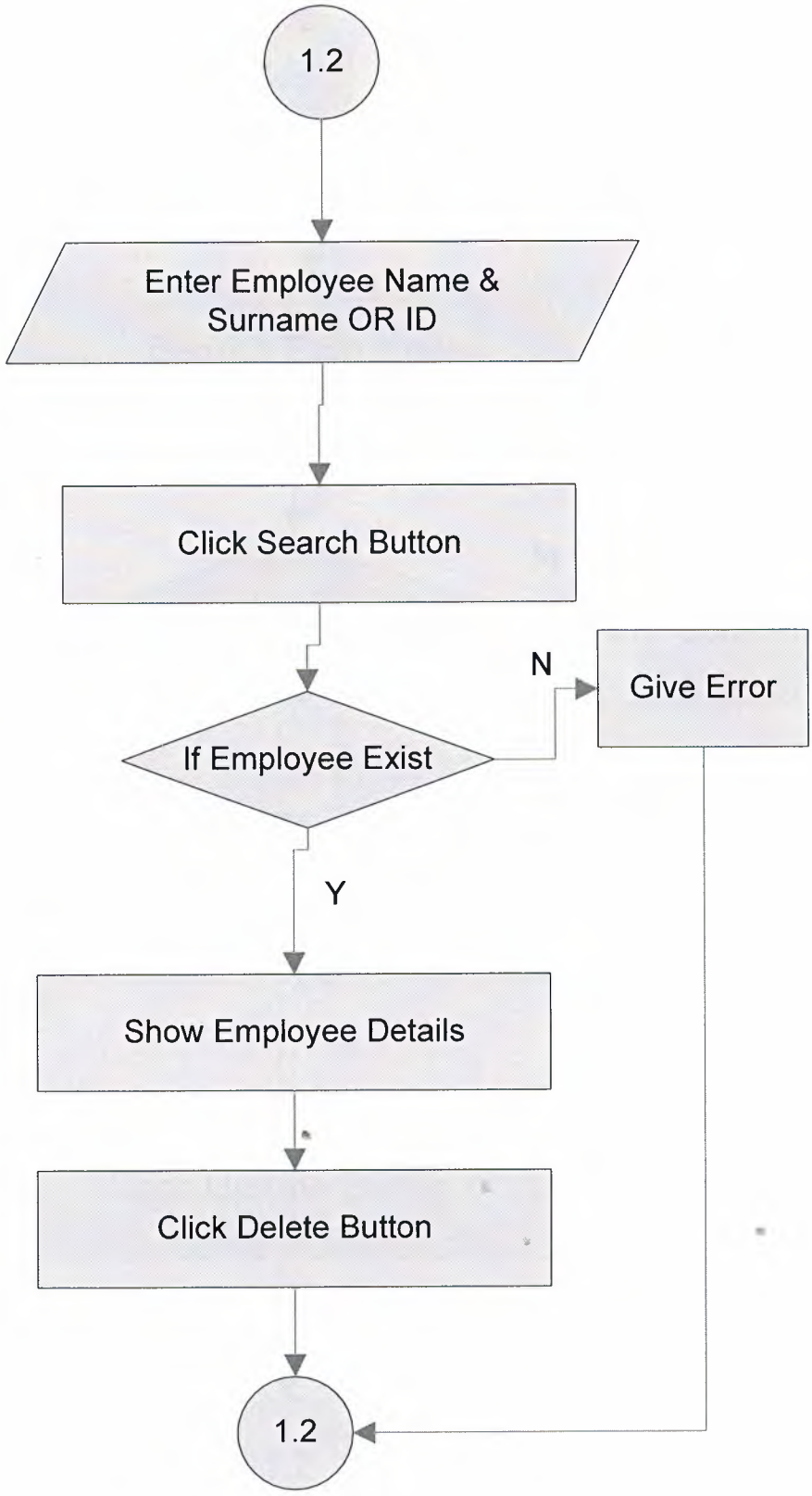
EMPLOYEES SUB MENU



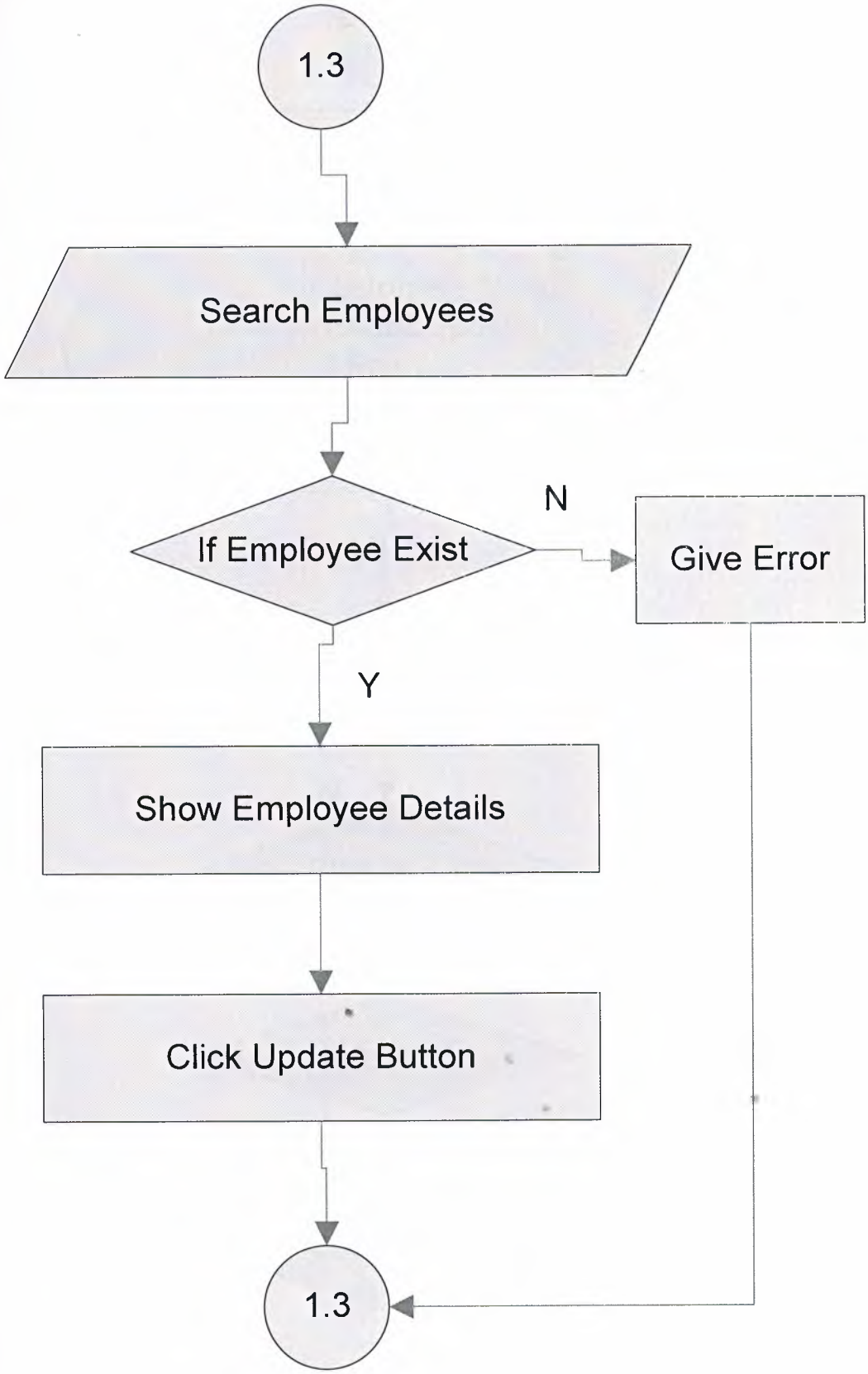
ADD EMPLOYEE



DELETE EMPLOYEE



UPDATE EMPLOYEE



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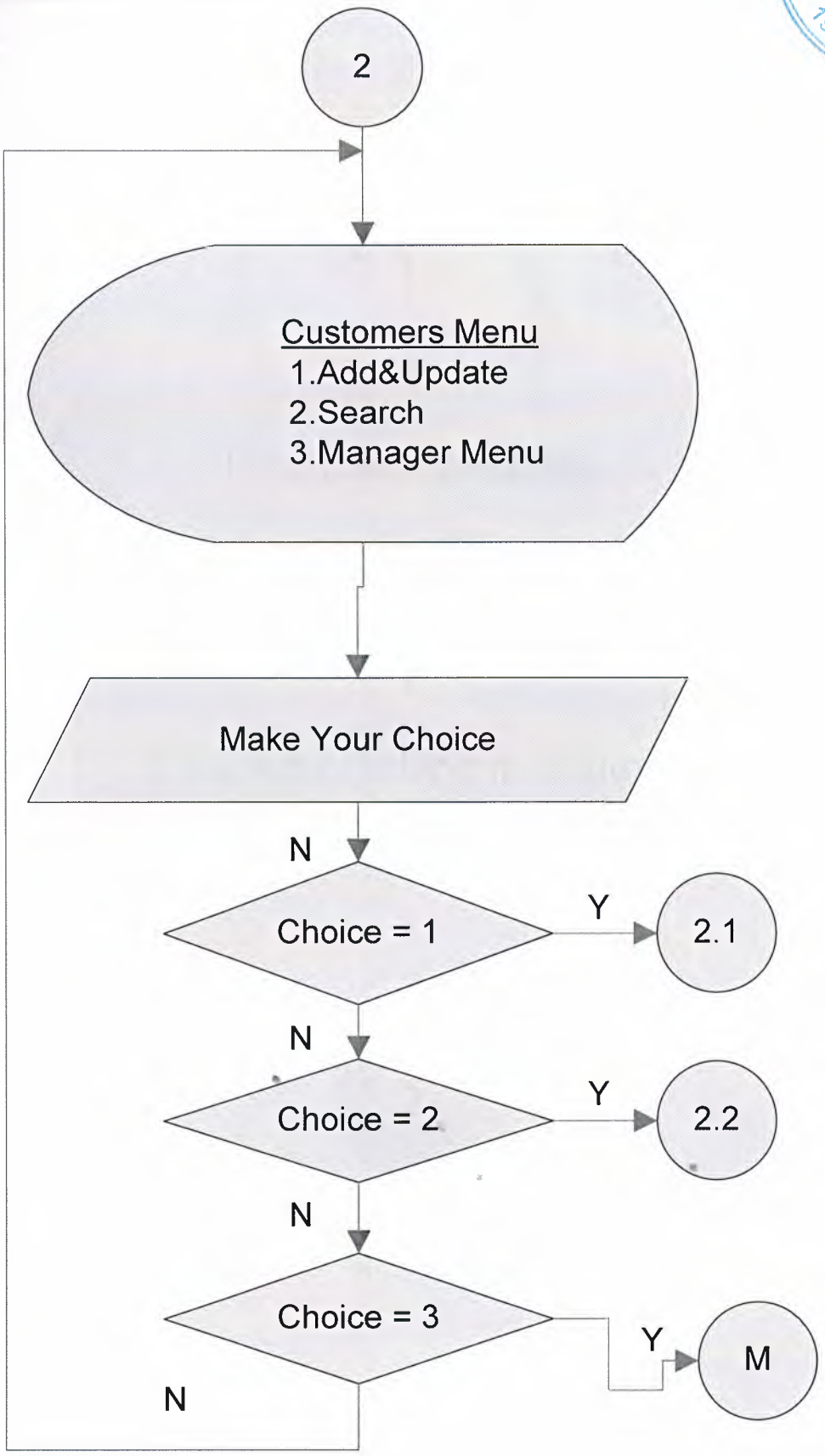
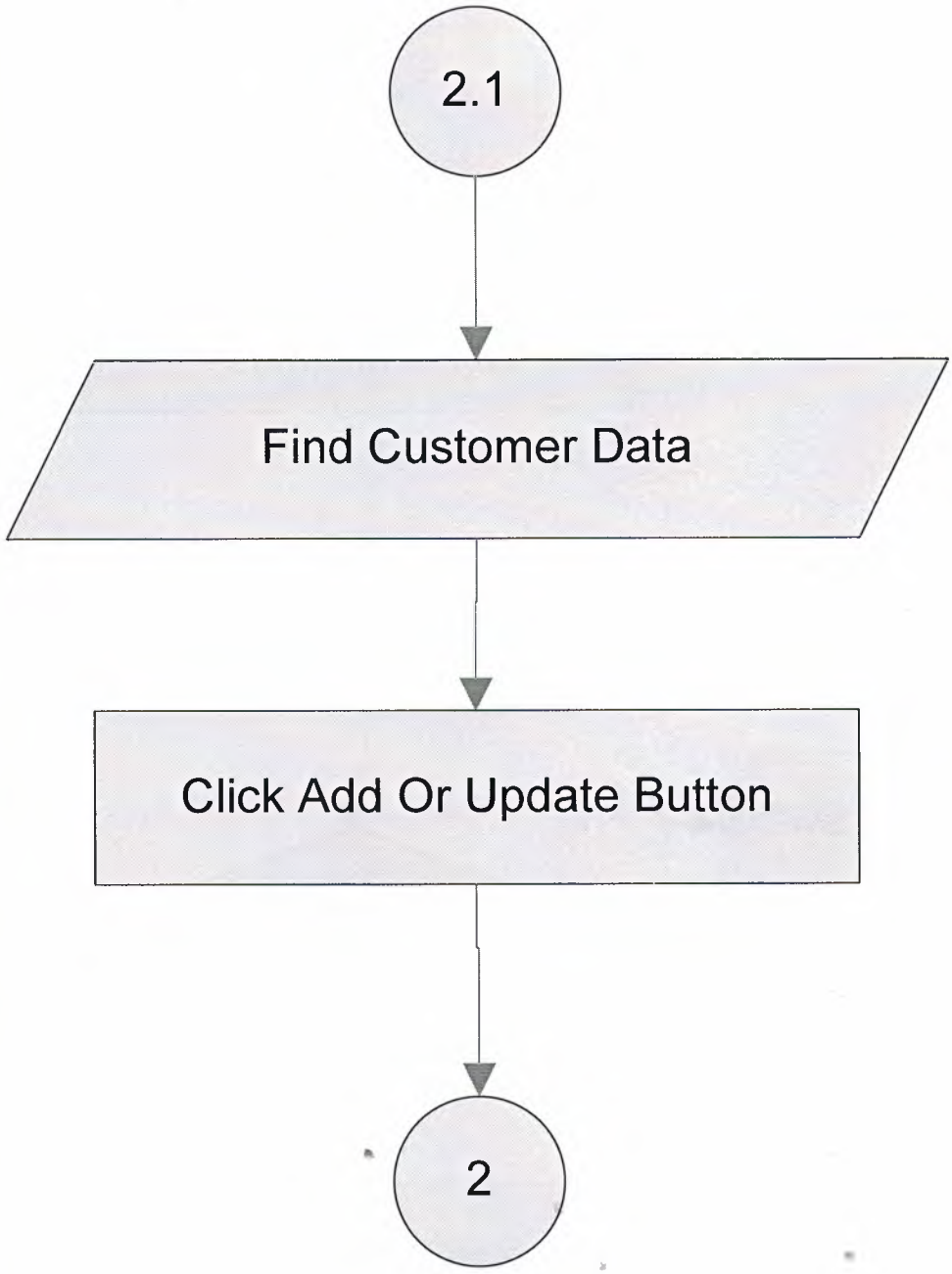
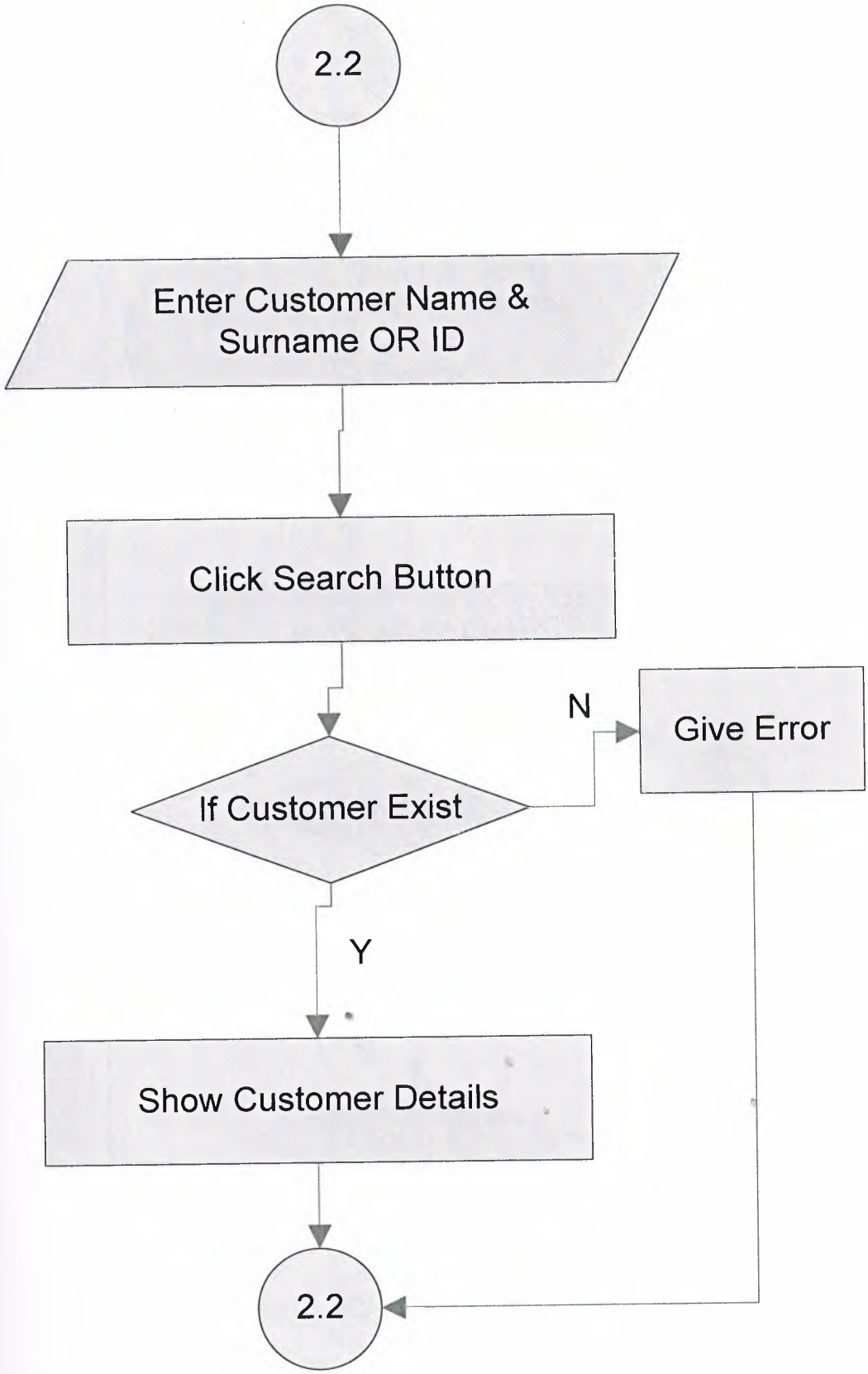
CUSTOMERS SUB MENU



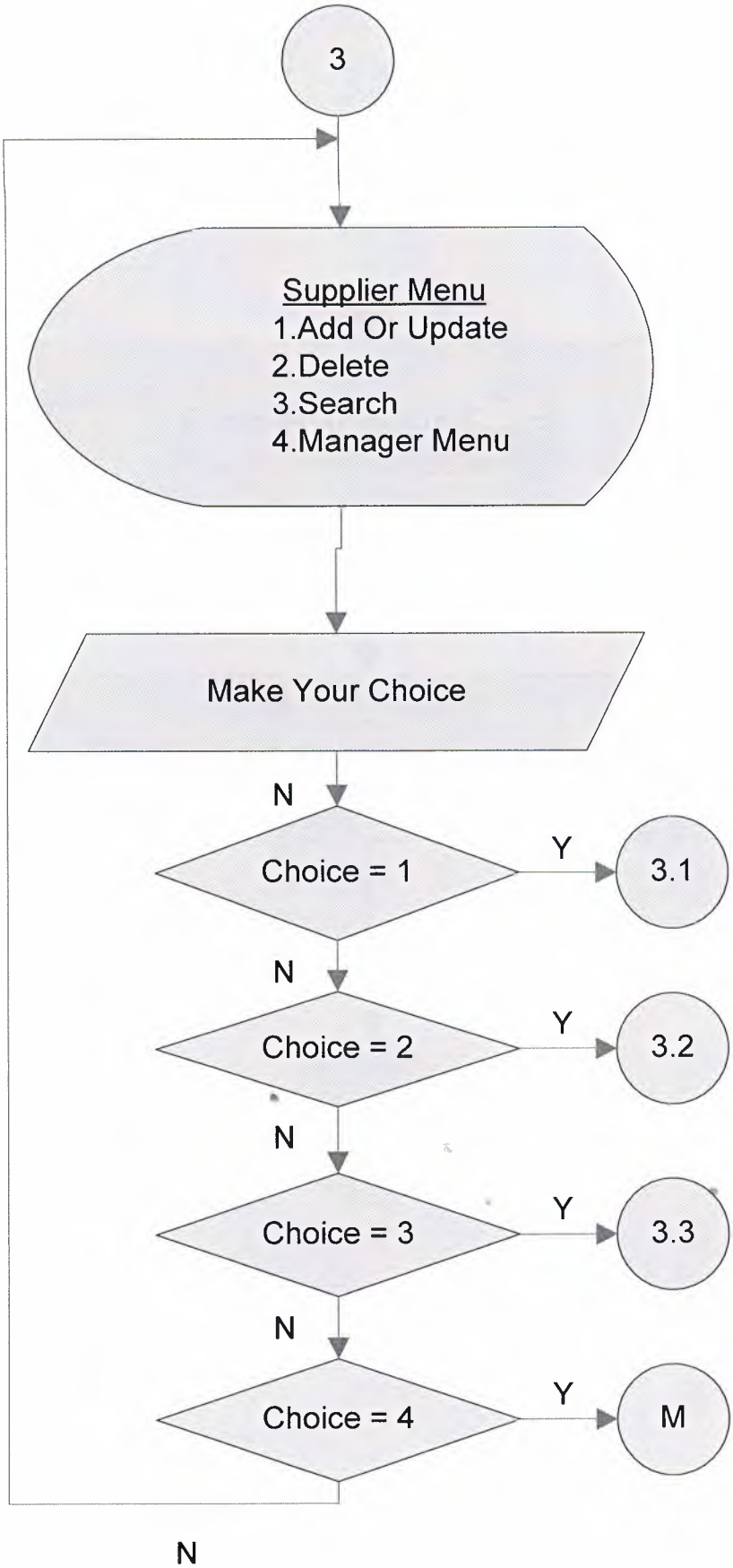
ADD & UPDATE CUSTOMER



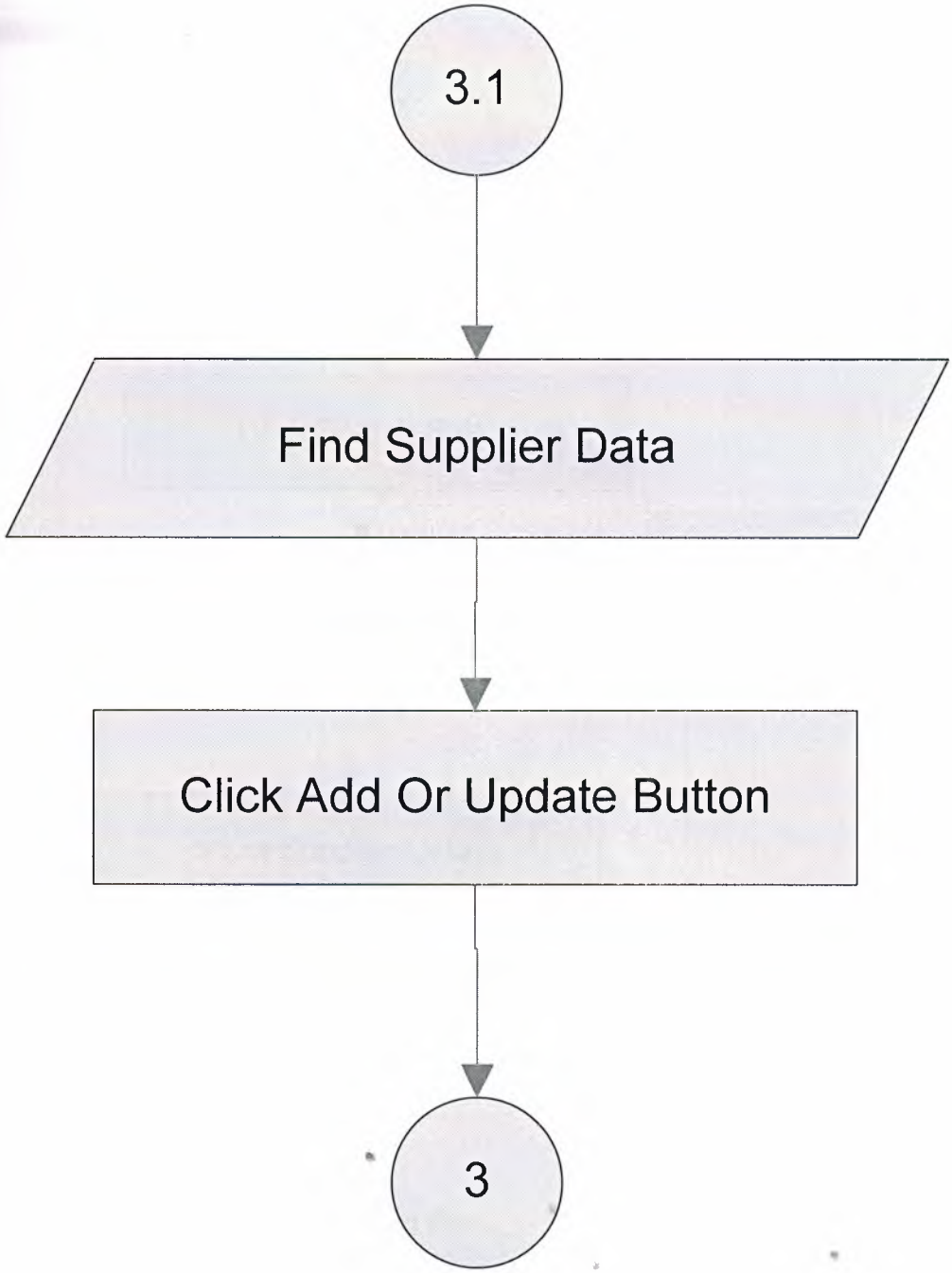
SEARCH CUSTOMERS



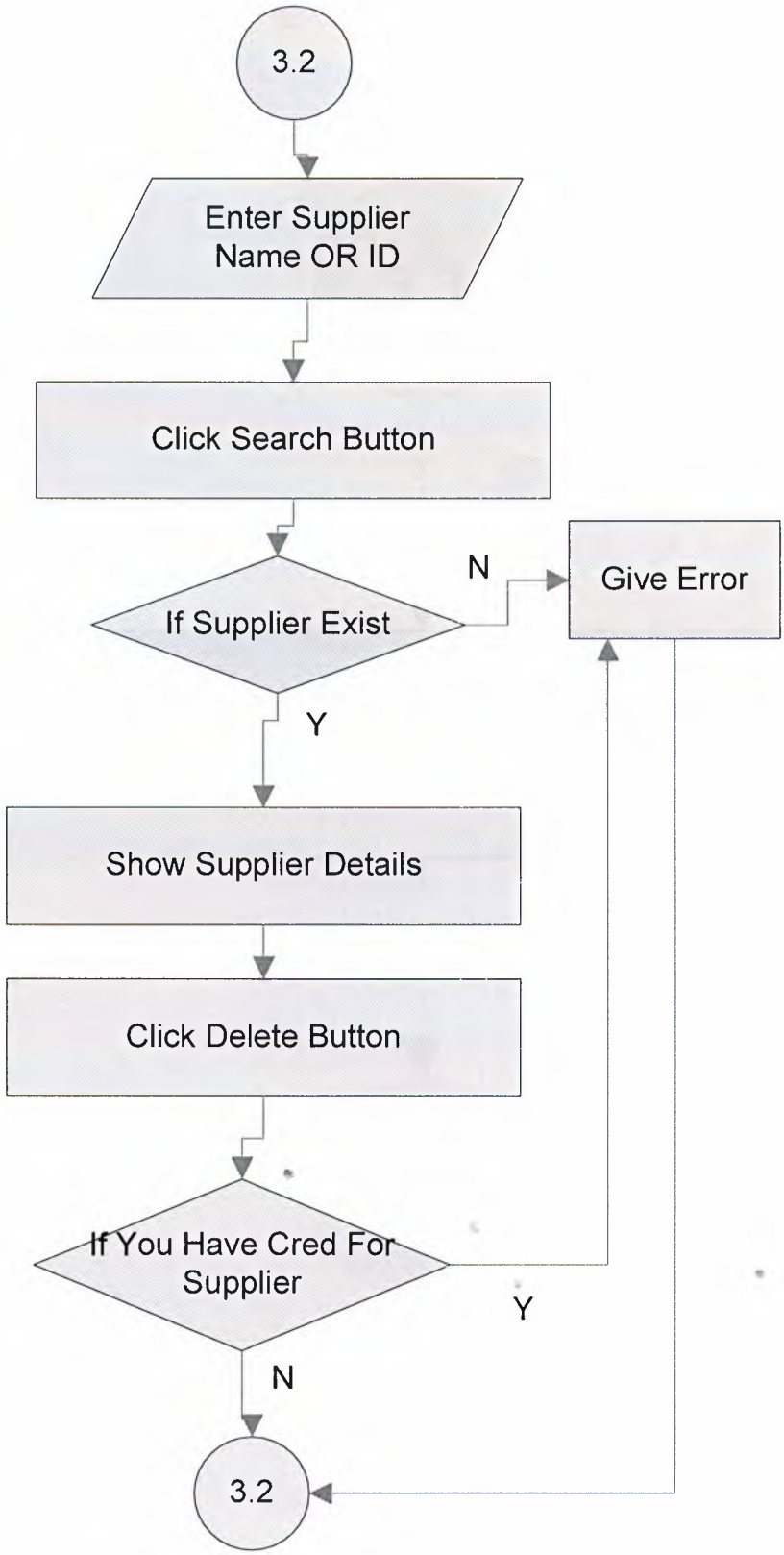
SUPPLIERS SUB MENU



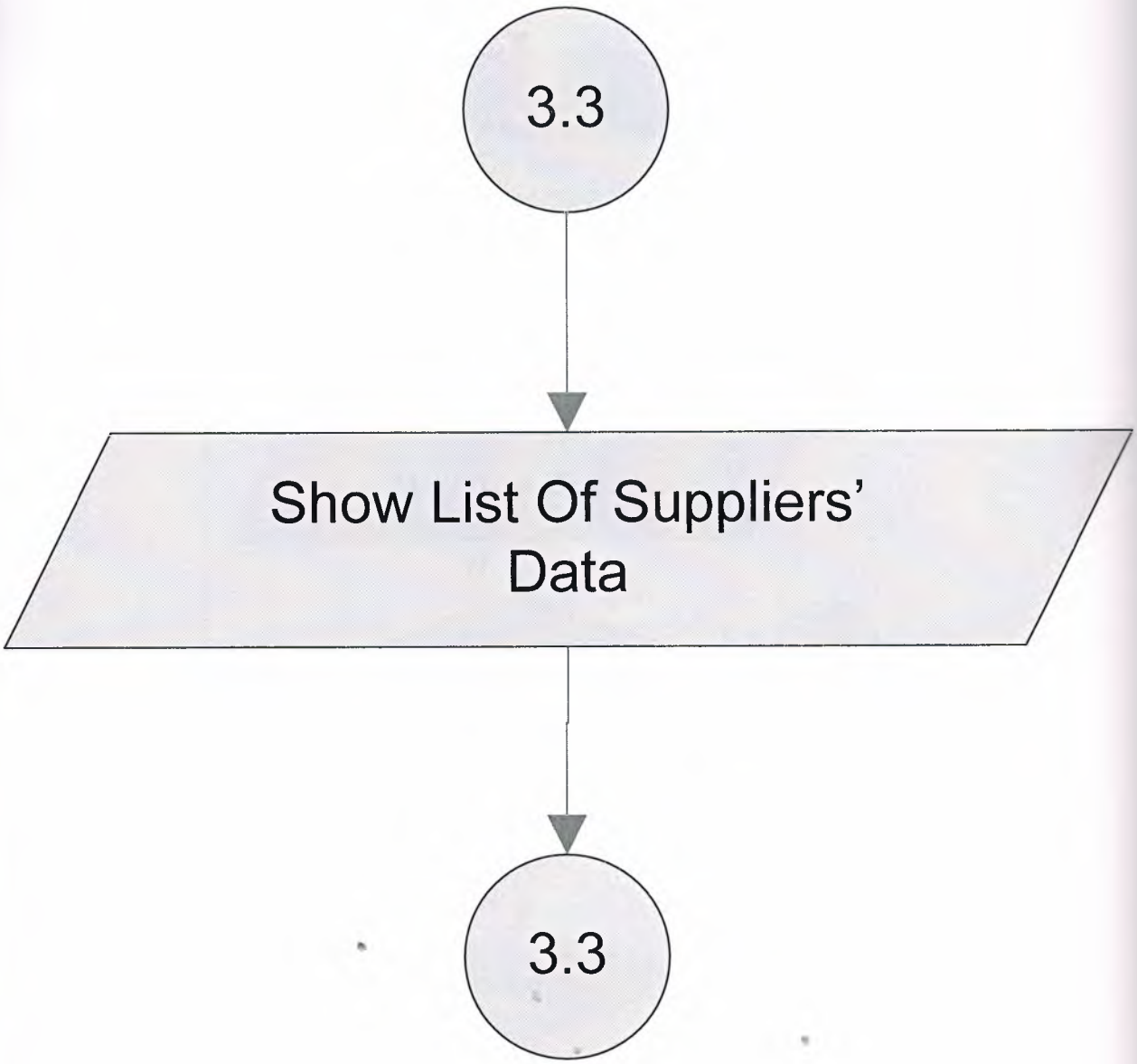
ADD OR UPDATE SUPPLIER



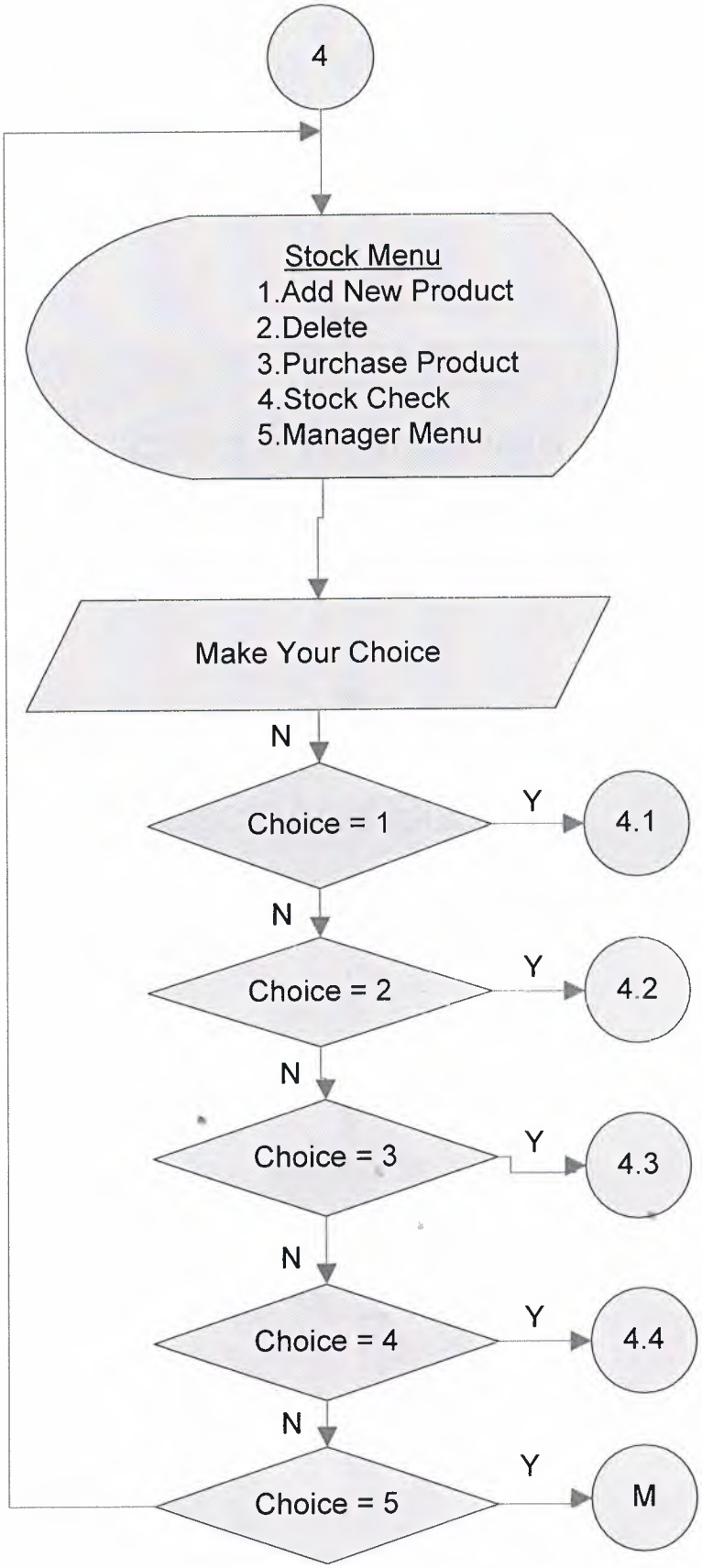
DELETE SUPPLIER



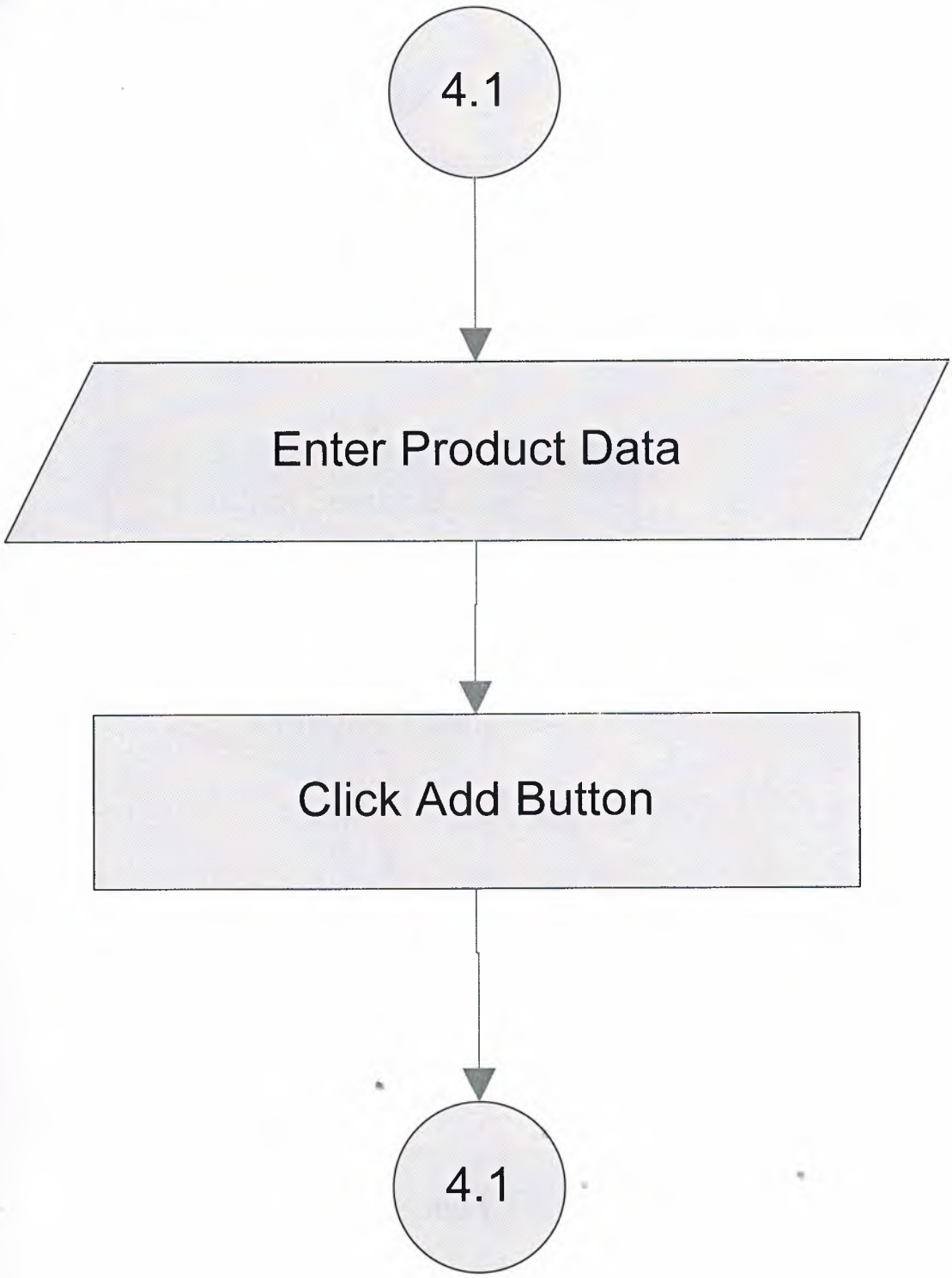
SEARCH SUPPLIER



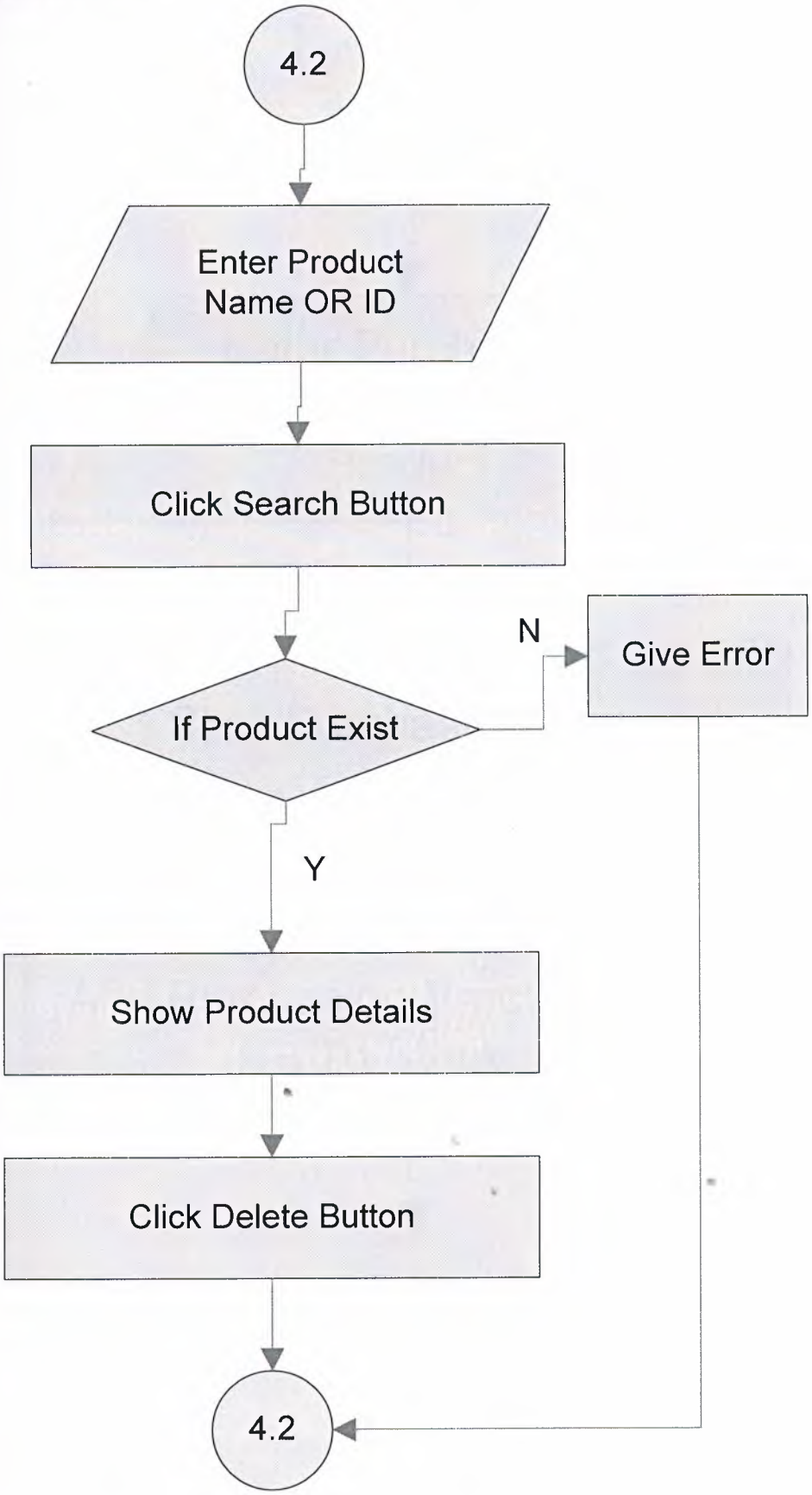
STOCK SUB MENU



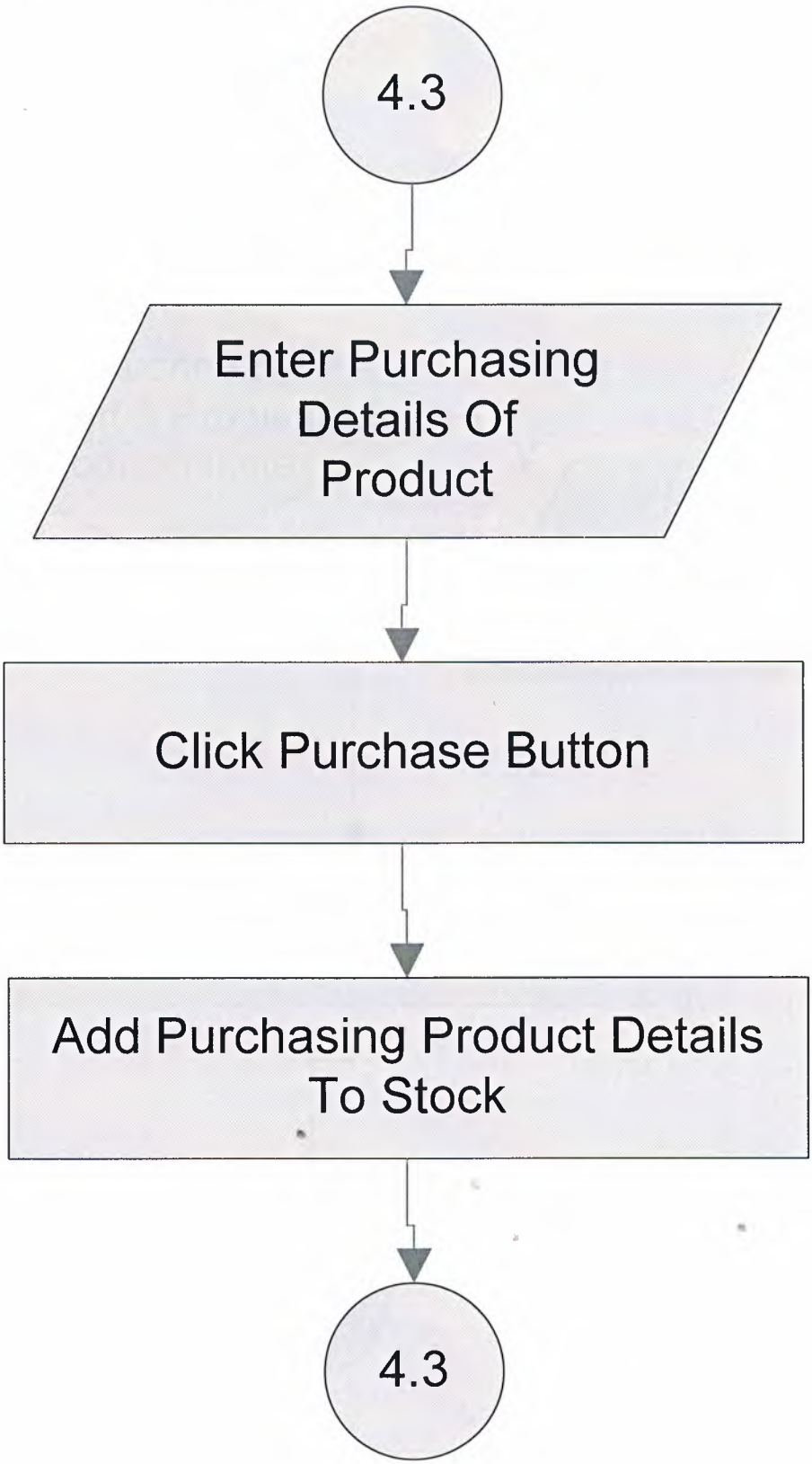
ADD NEW PRODUCT



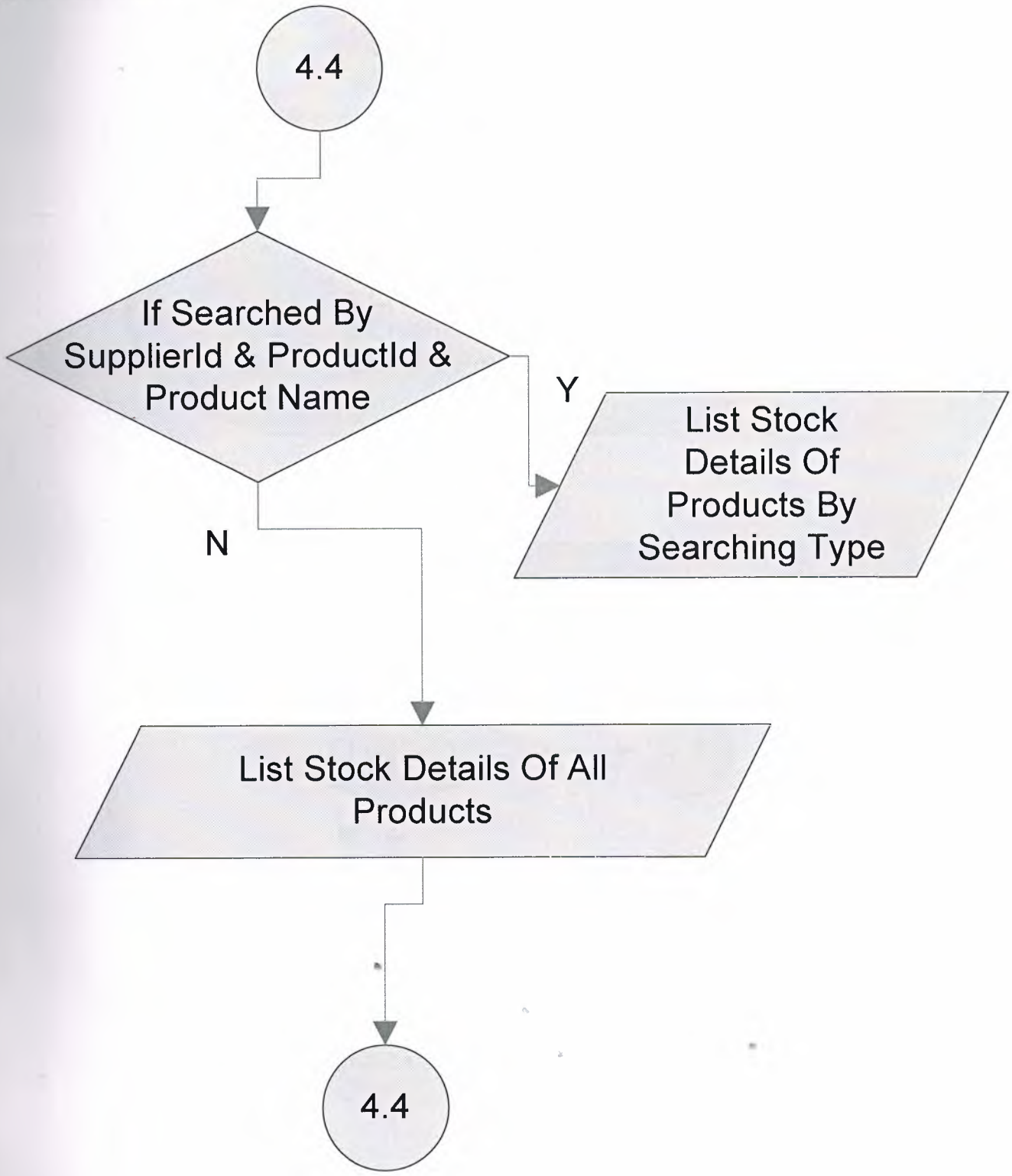
DELETE PRODUCT



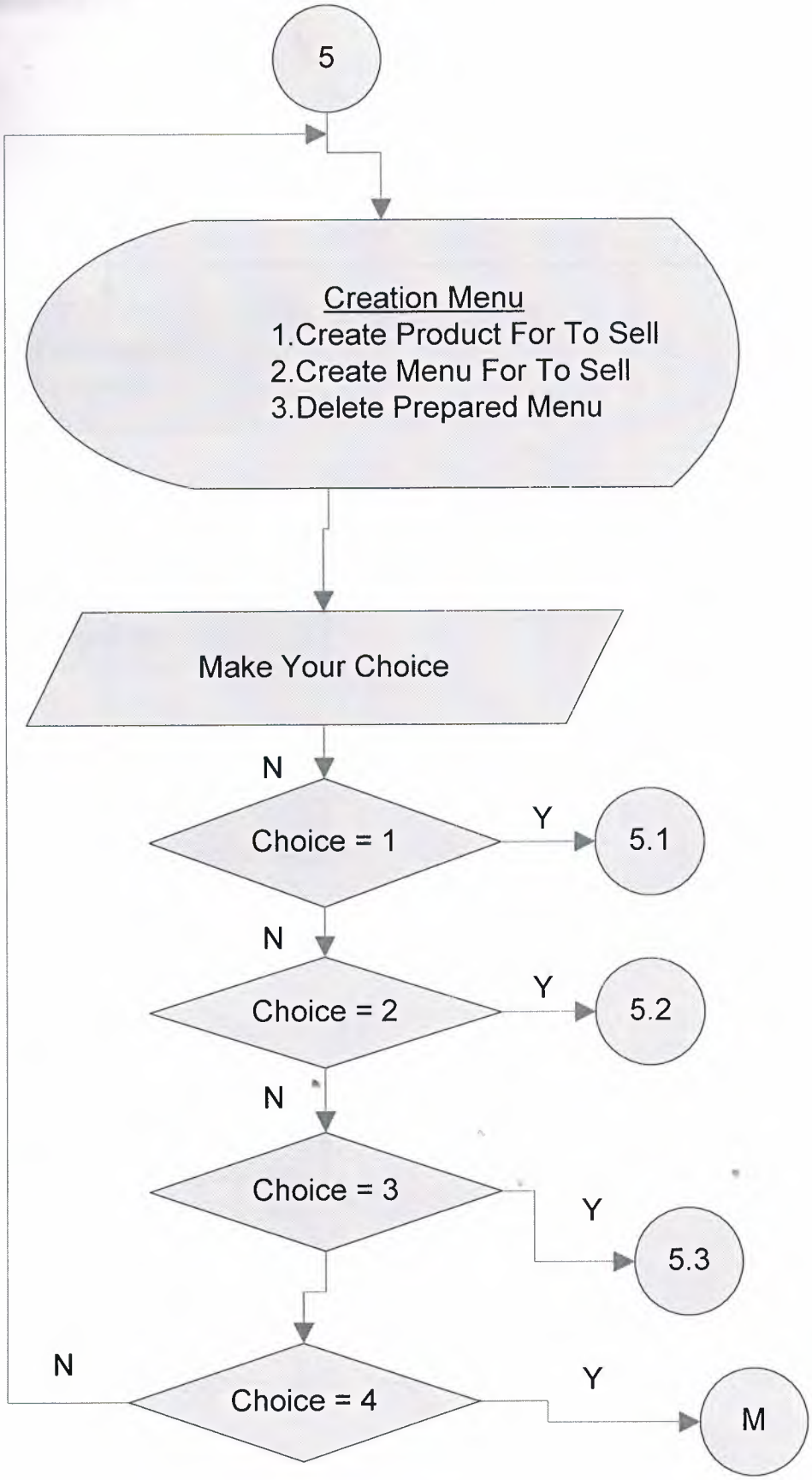
PURCHASE PRODUCT



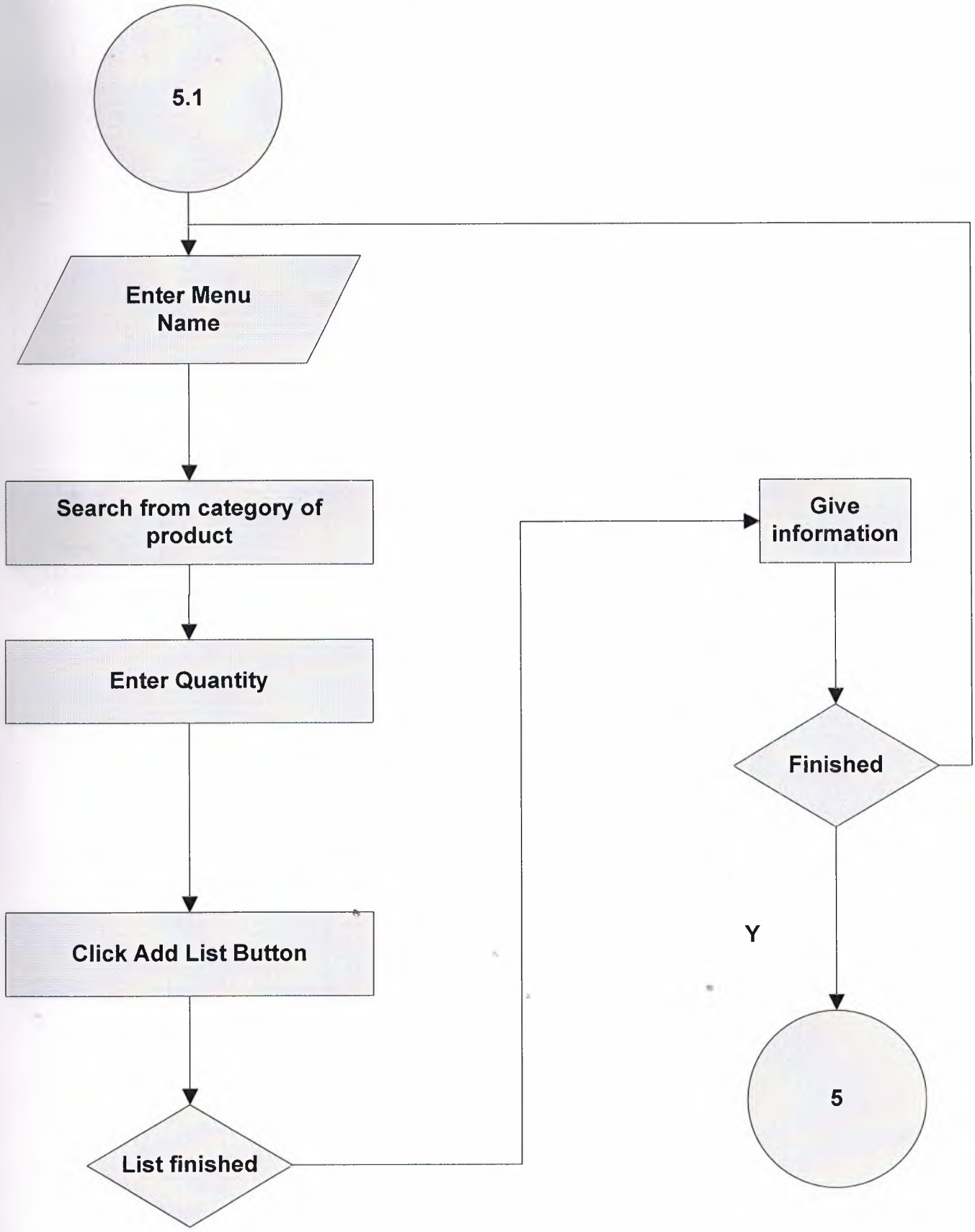
STOCK CHECK


4.4
If Searched By SupplierId & ProductId & Product Name
Y
List Stock Details Of Products By Searching Type
N
List Stock Details Of All Products
4.4

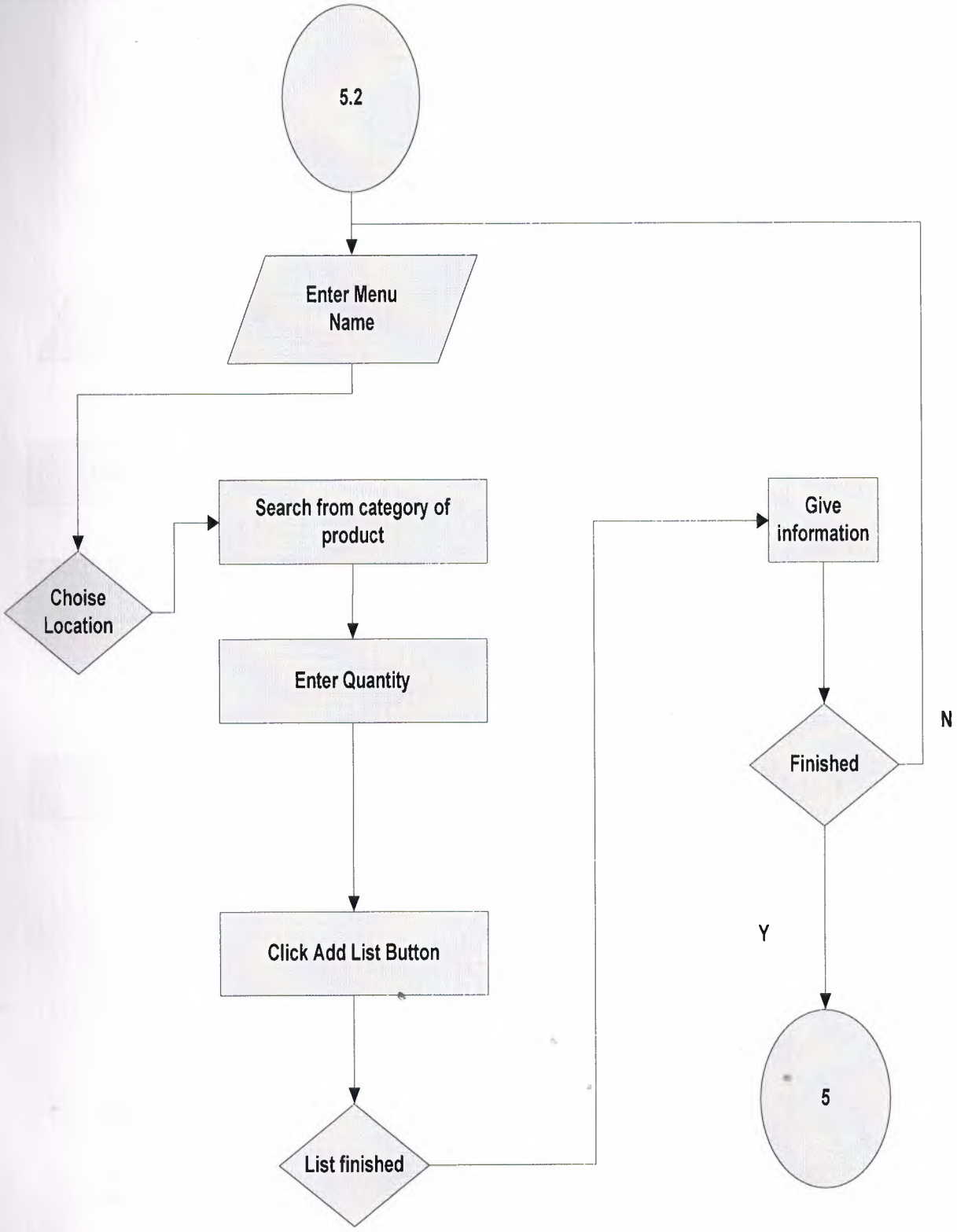
CREATE SUB MENU



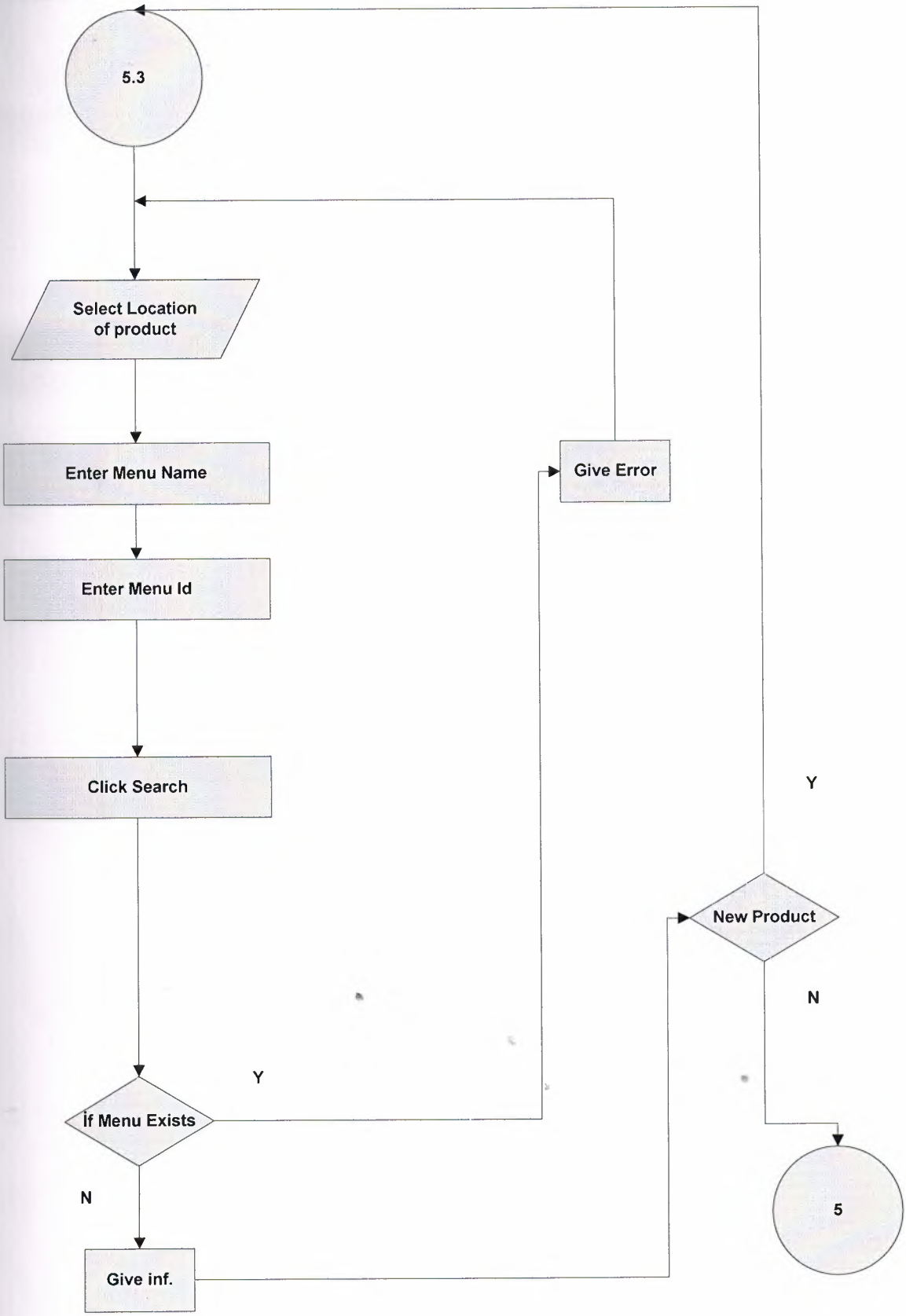
CREATE PRODUCT FOR TO SELL



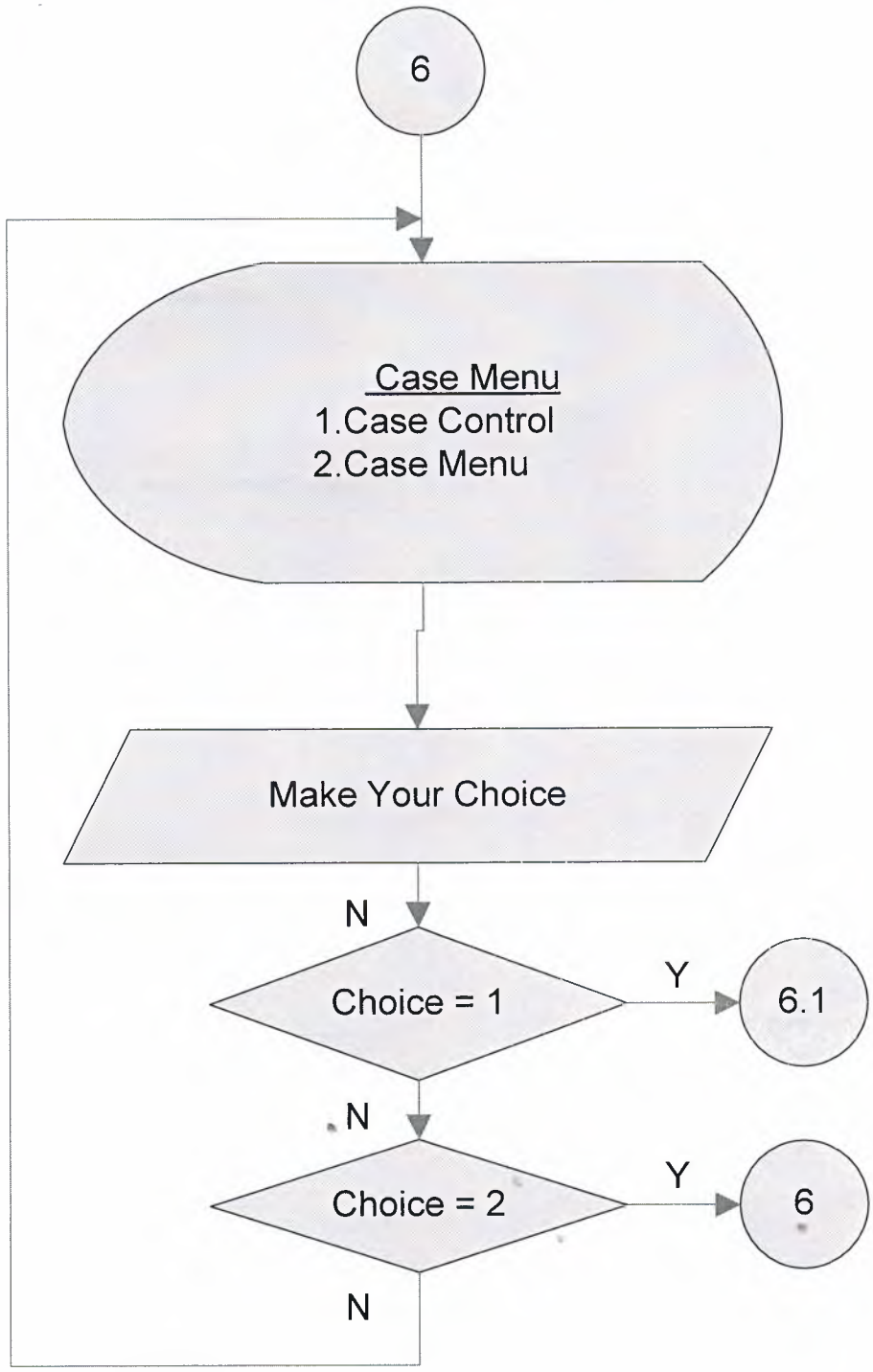
CREATE MENU FOR TO SELL



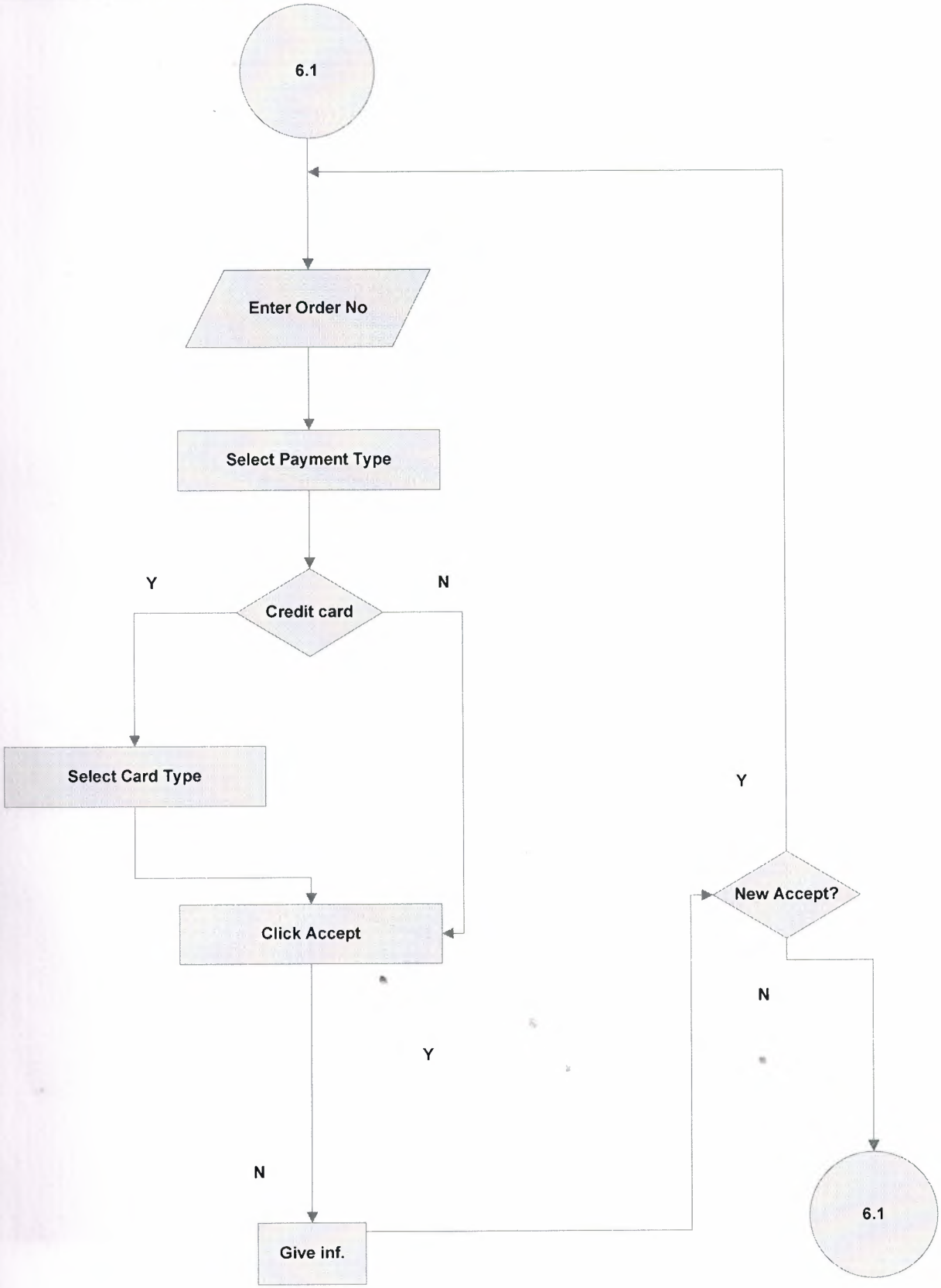
DELETE PREPARED MENU



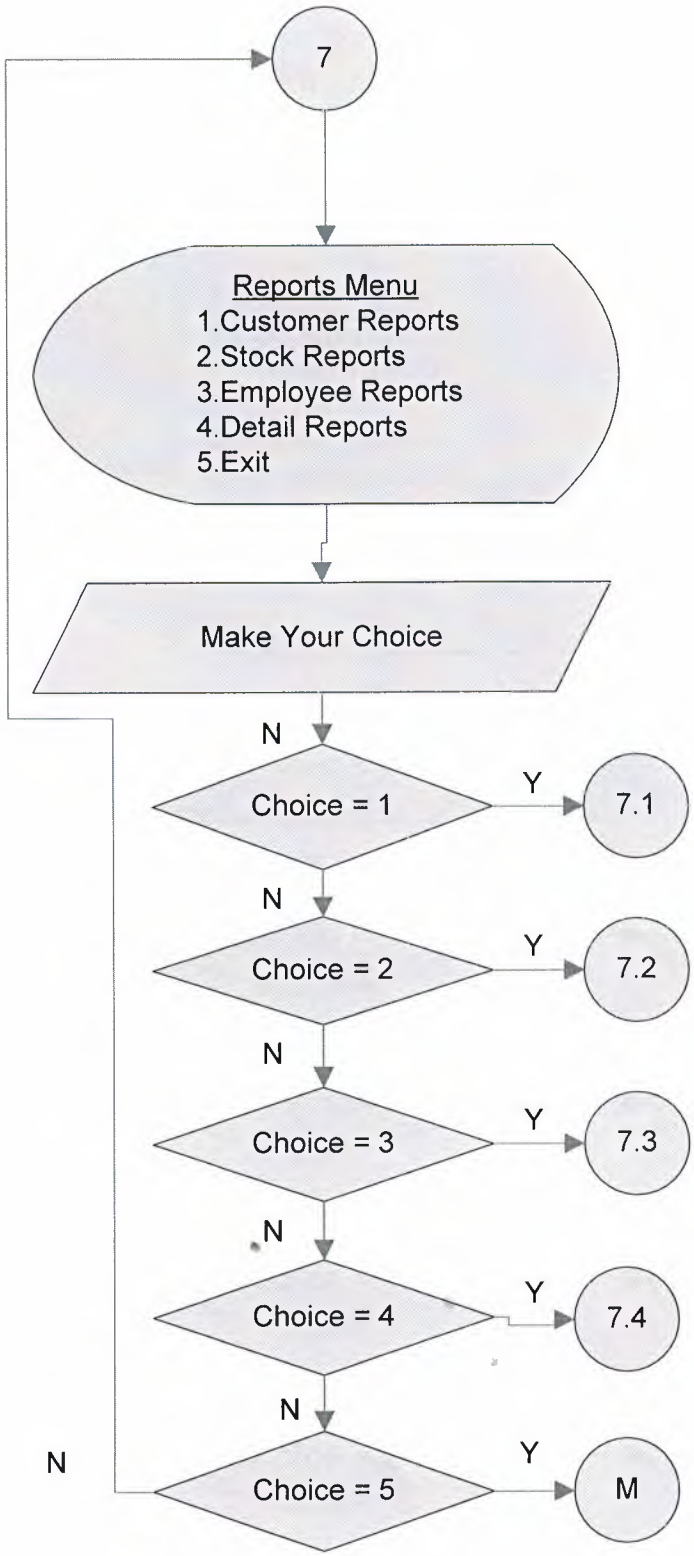
CASE SUB MENU



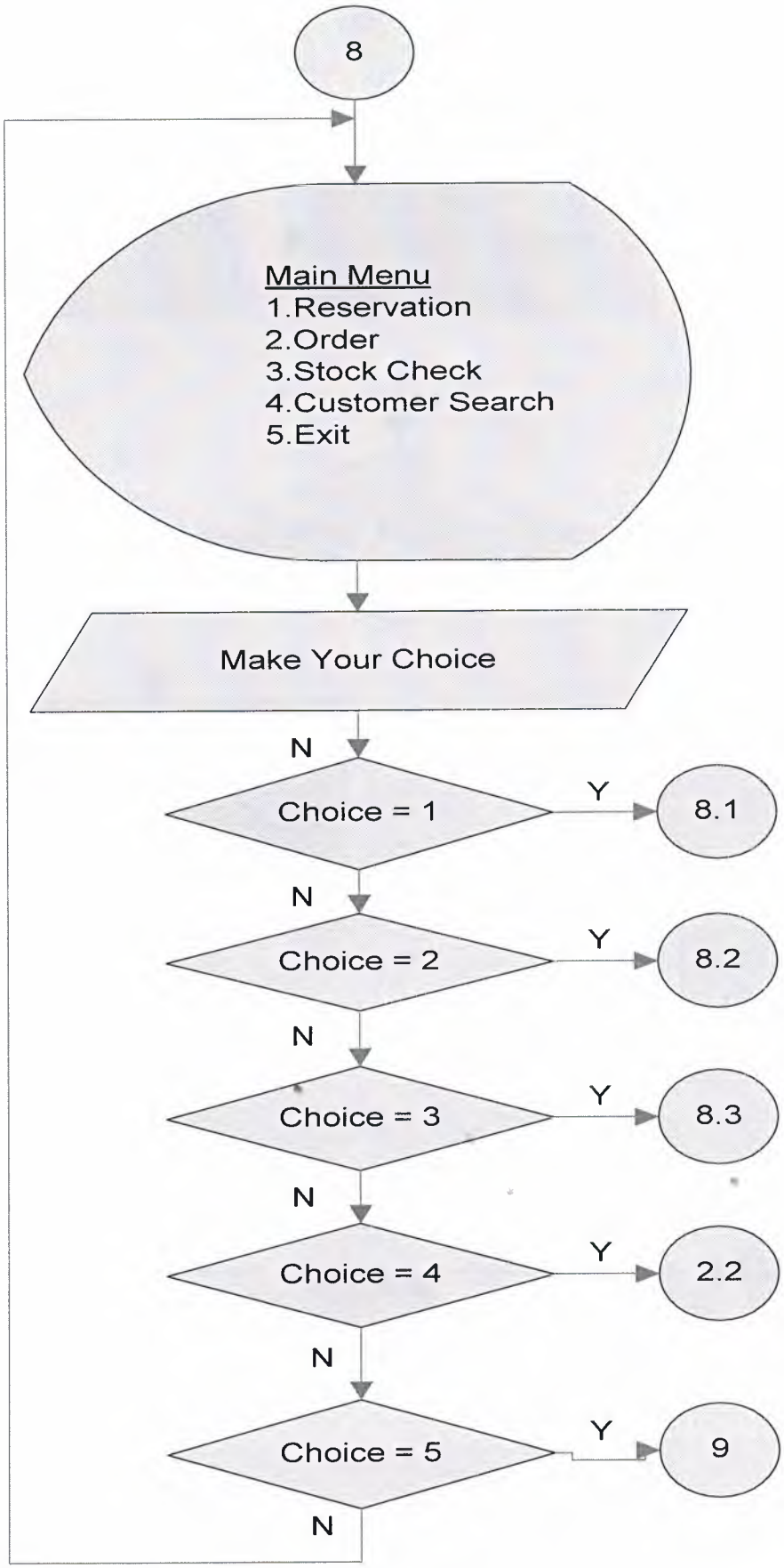
CASE CONTROL MENU



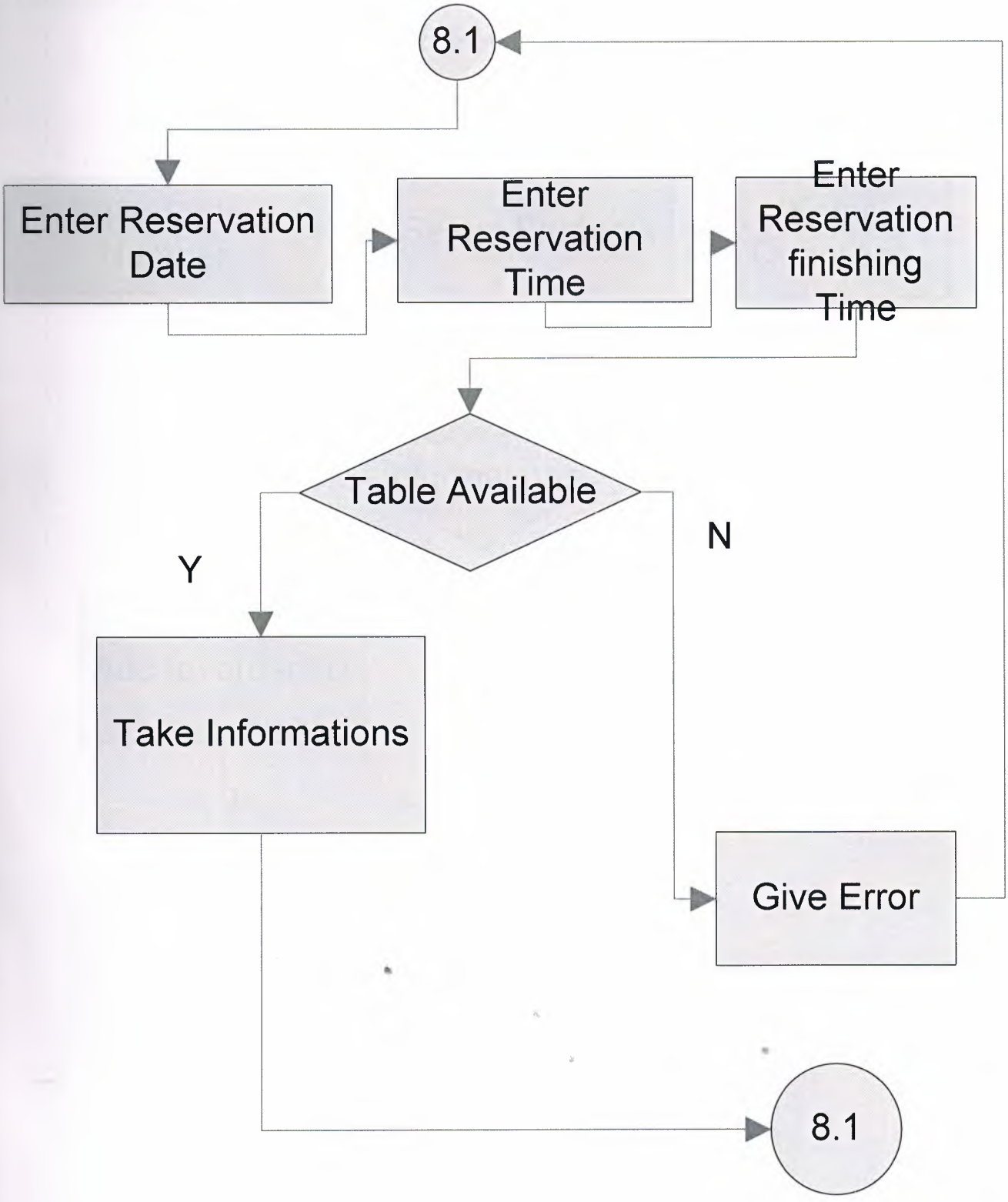
REPORTS SUB MENU



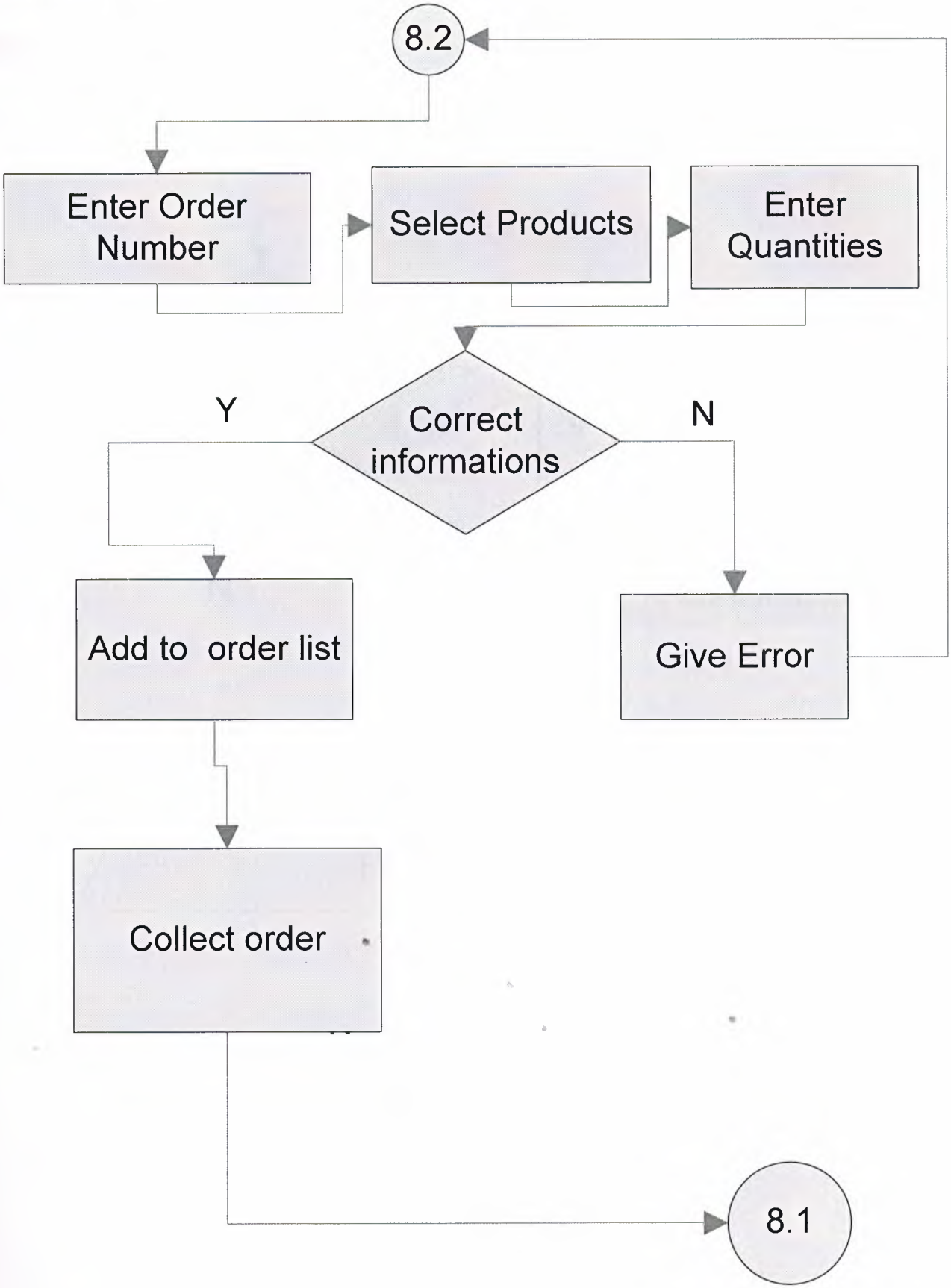
MAIN SUB MENU



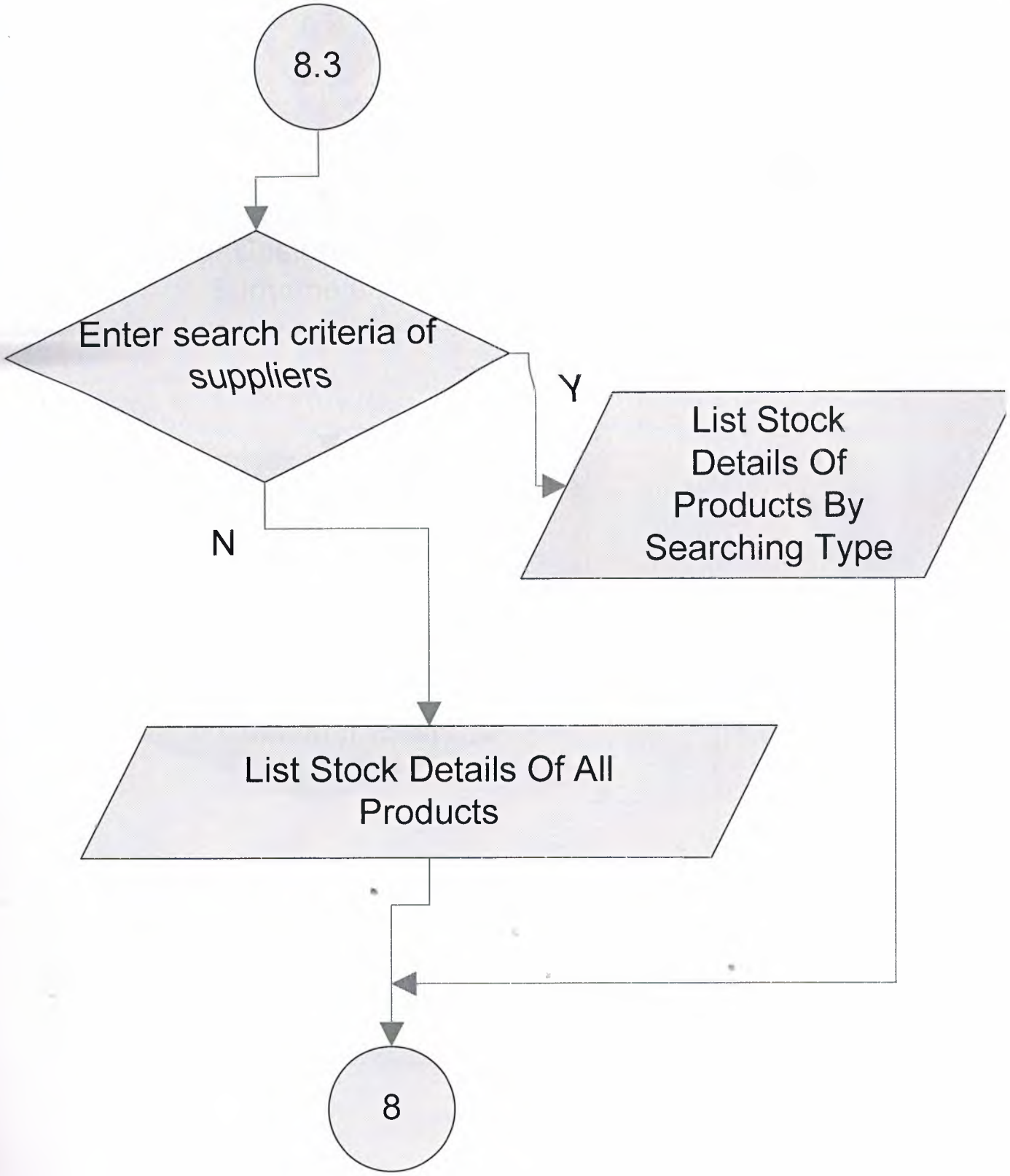
RESERVATION MENU



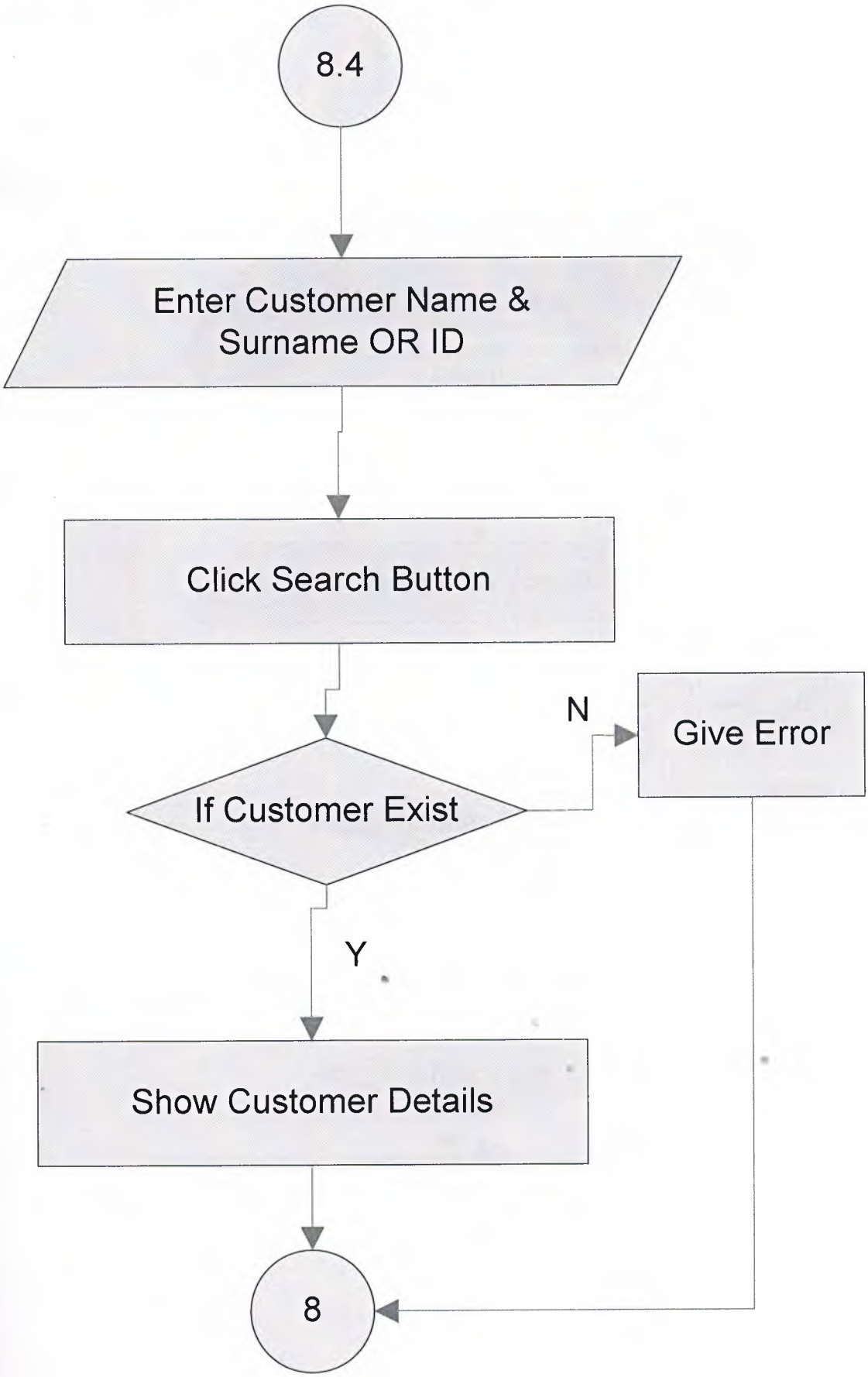
ORDER MENU


8.2
Enter Order Number
Select Products
Enter Quantities
Correct informations
Y
N
Add to order list
Give Error
Collect order
8.1

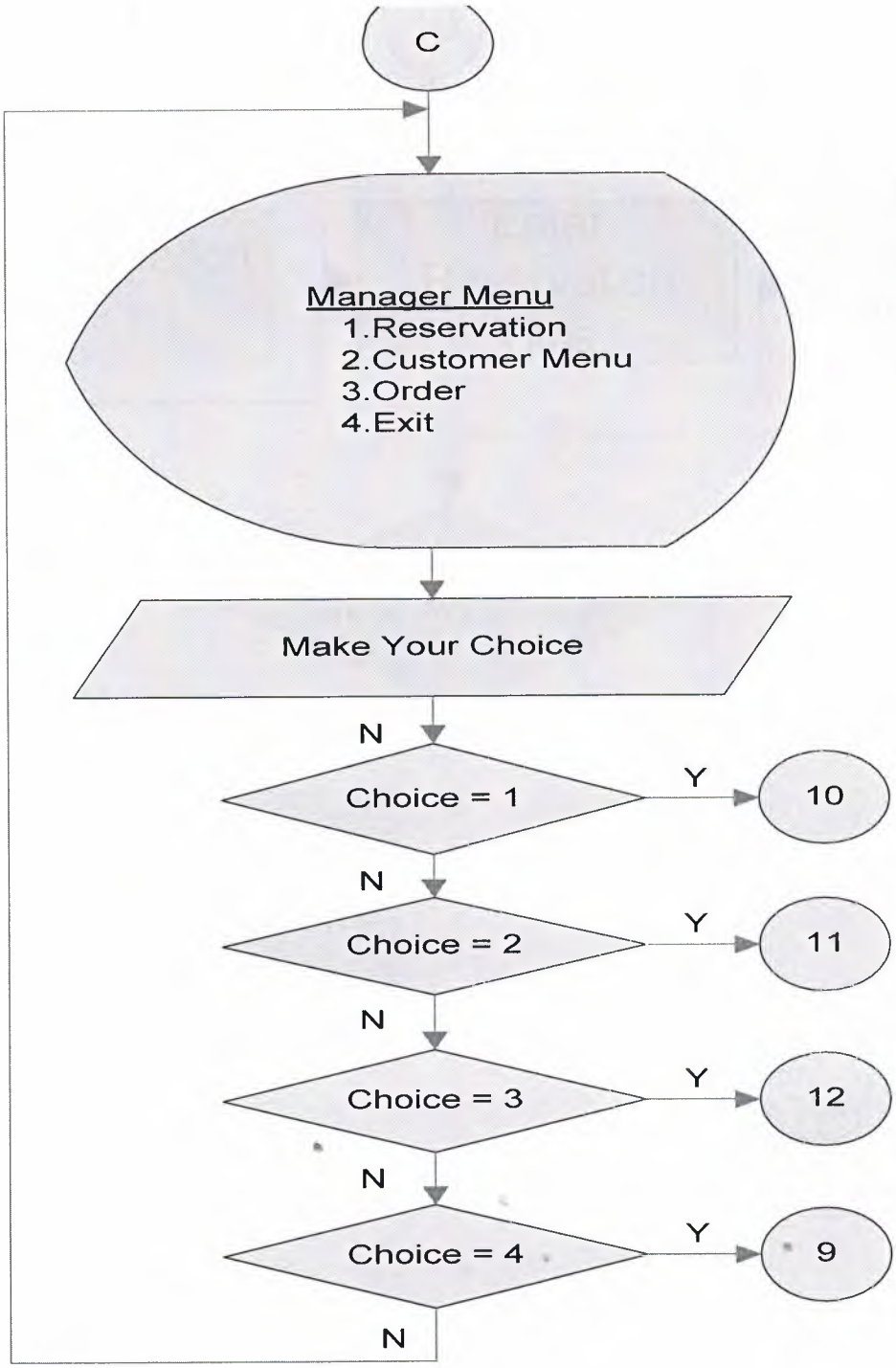
STOCK CHECK MENU



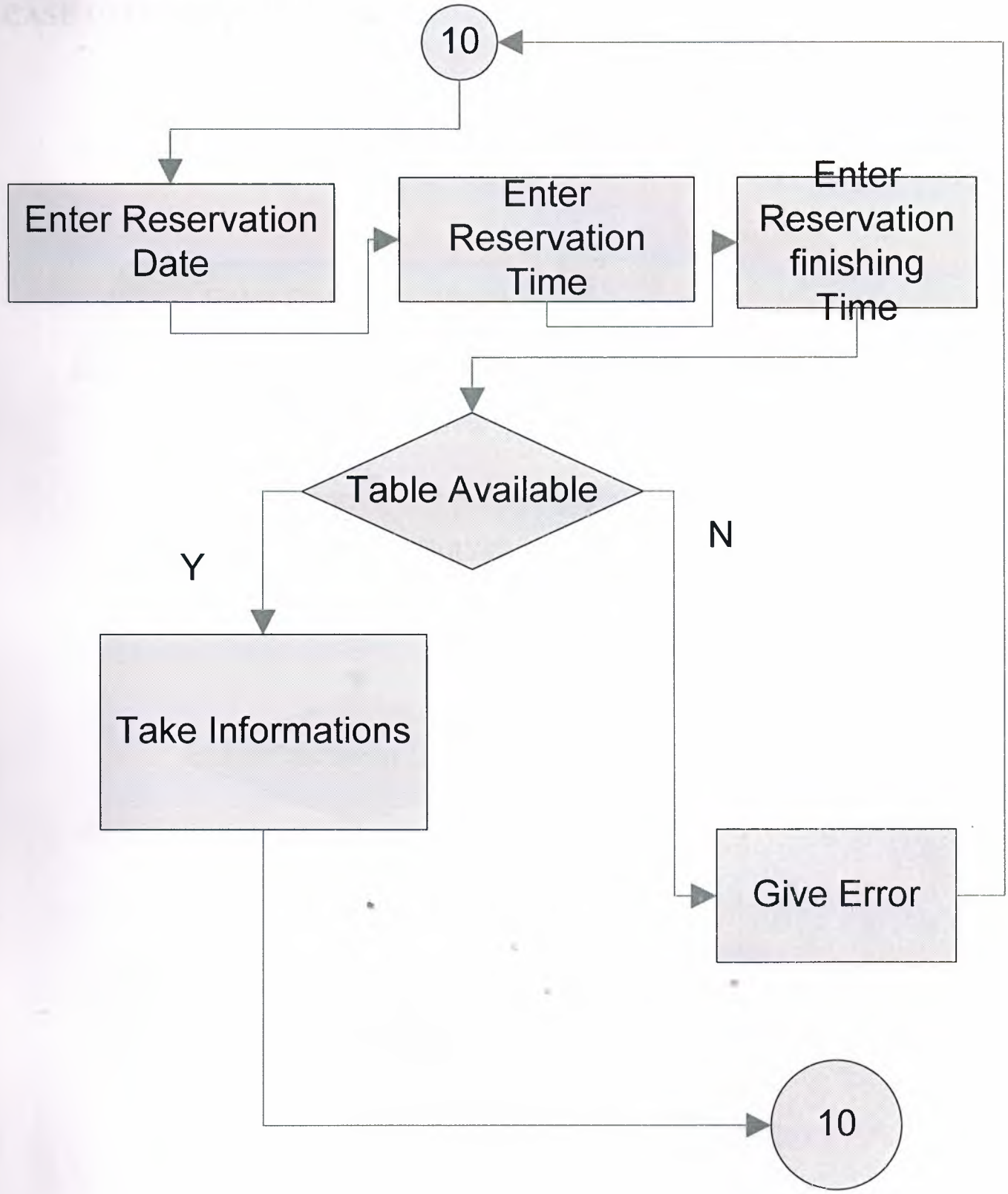
CUSTOMER SEARCH



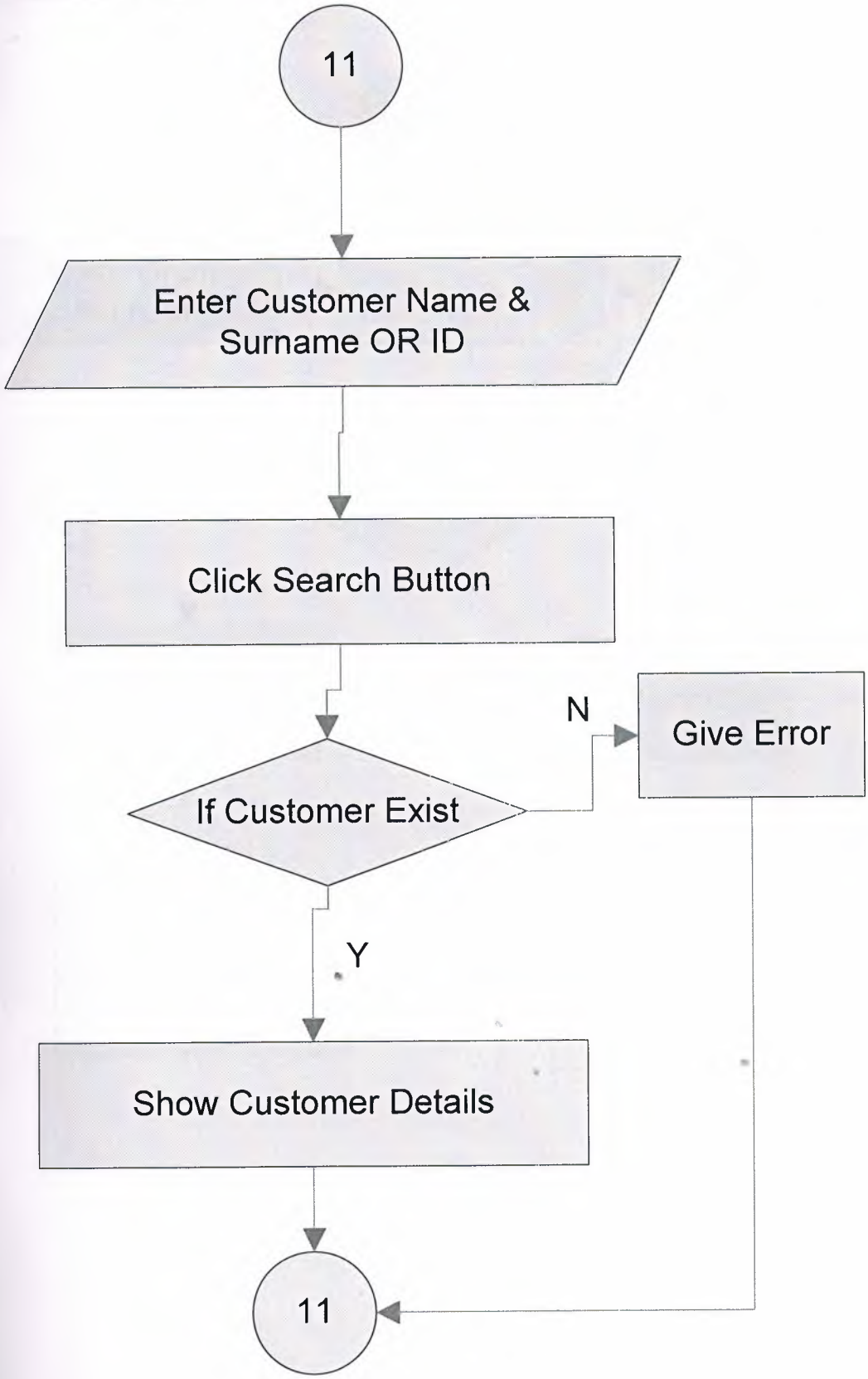
CASE USER MAIN MENU



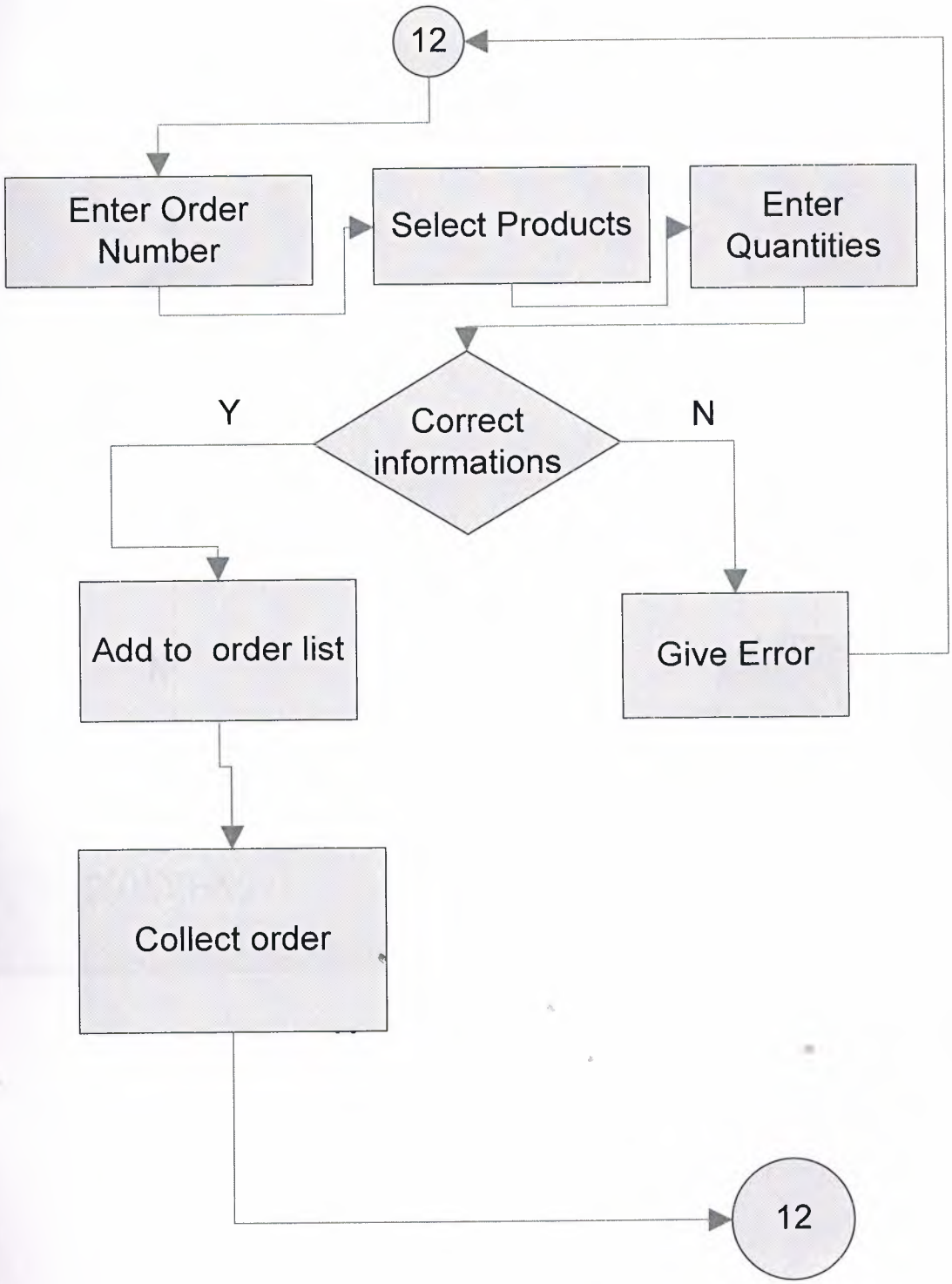
CASE USER RESERVATION MENU



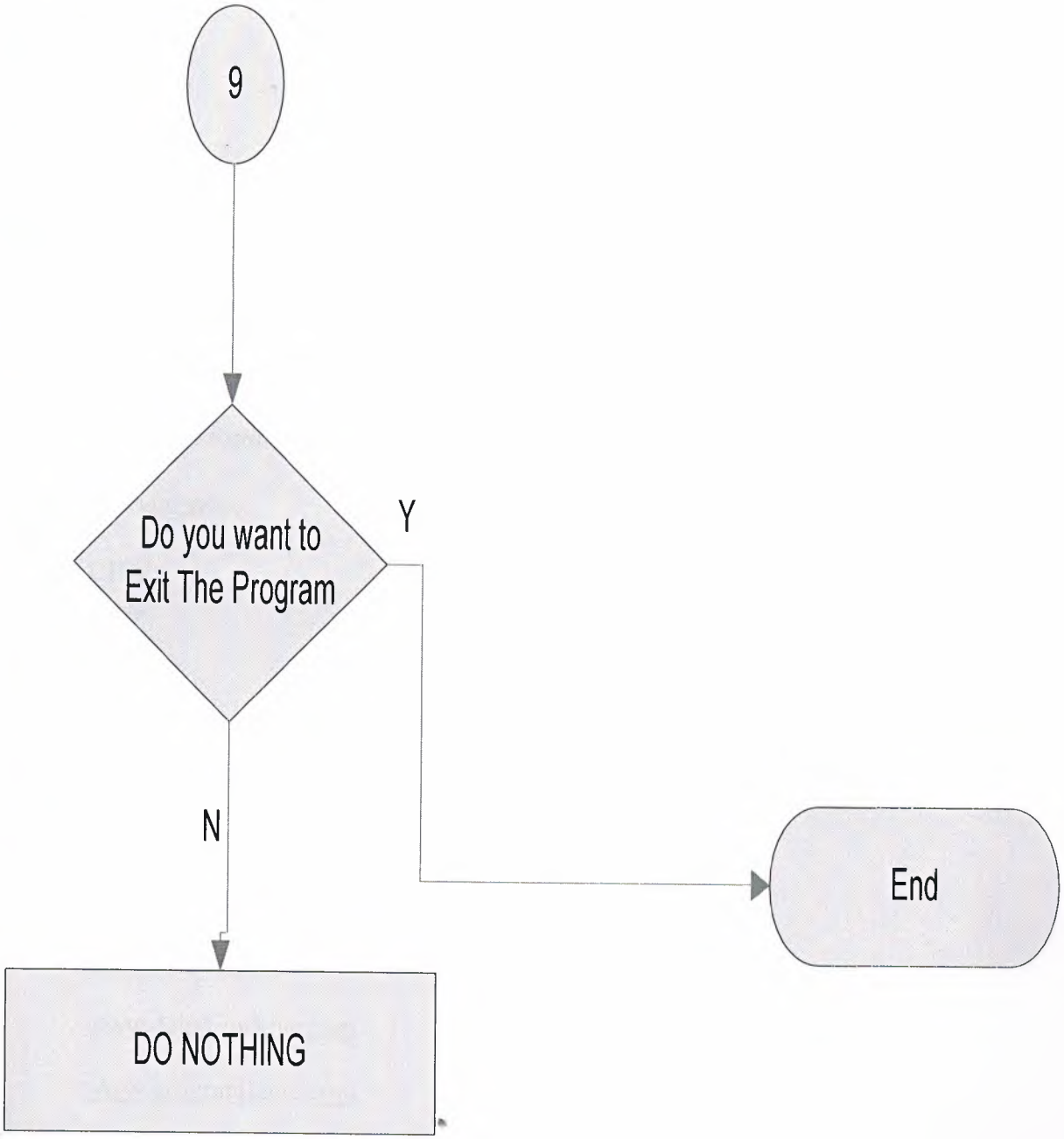
CASE USER CUSTOMER MENU



CASE USER ORDER MENU



EXIT



VI. REFERANCES

BOOKS

- Borland Delphi 7.0 Ezel Balkan
- Delphi 7 By İhsan Karagülle.
- Management information systems Kroenke, David.
    - PC-Magazine
    - CHIP

WEBSITES

www.delphi.about.com

www.delphiturk.com

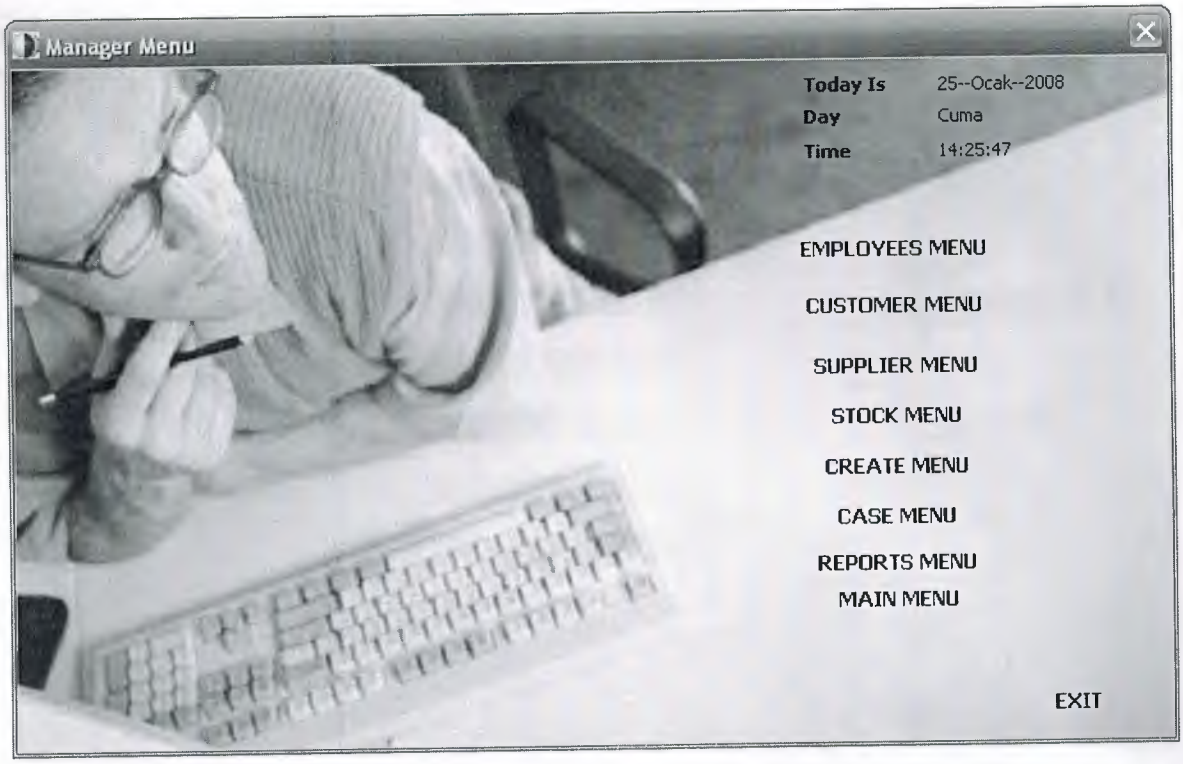
www.delphiturkiye.com

www.programlama.com

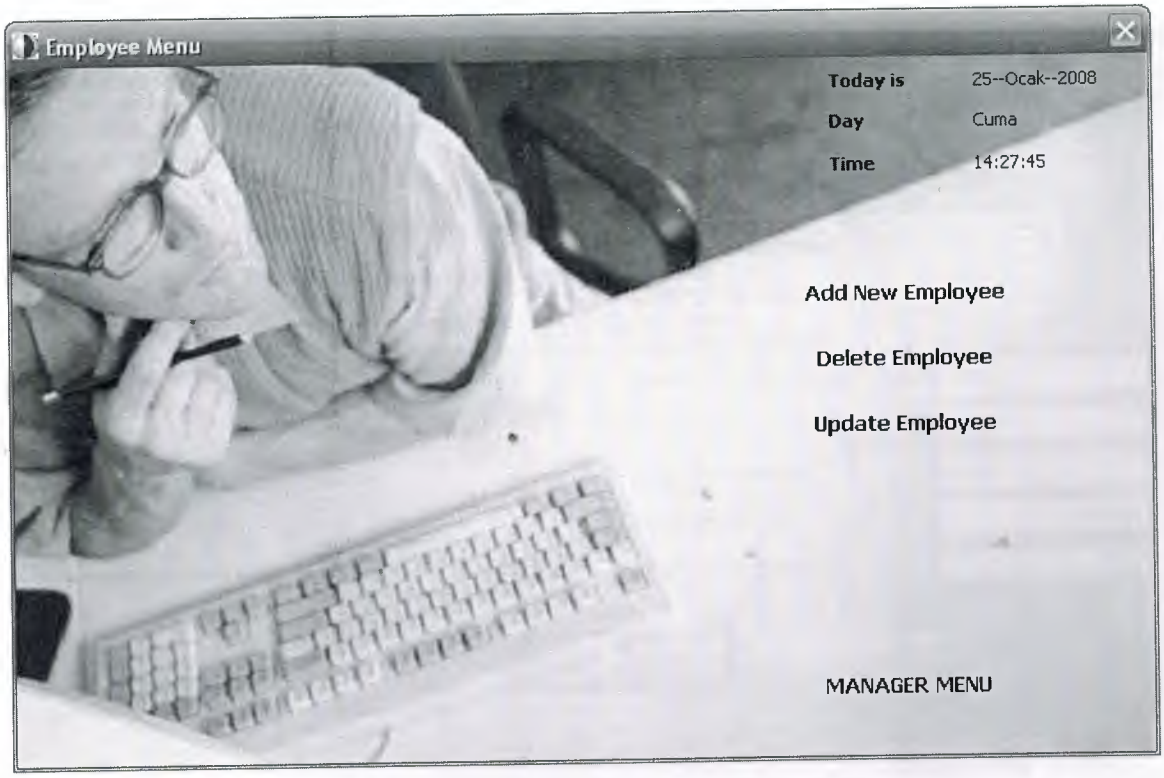
LOGIN MENU

LOGIN MENU
Today is : 25--Ocak--2008
Day : Cuma
Time : 14:23:15
Please Enter Employee Name
Please Enter Employee Password
ENTER
A good time to start something new.

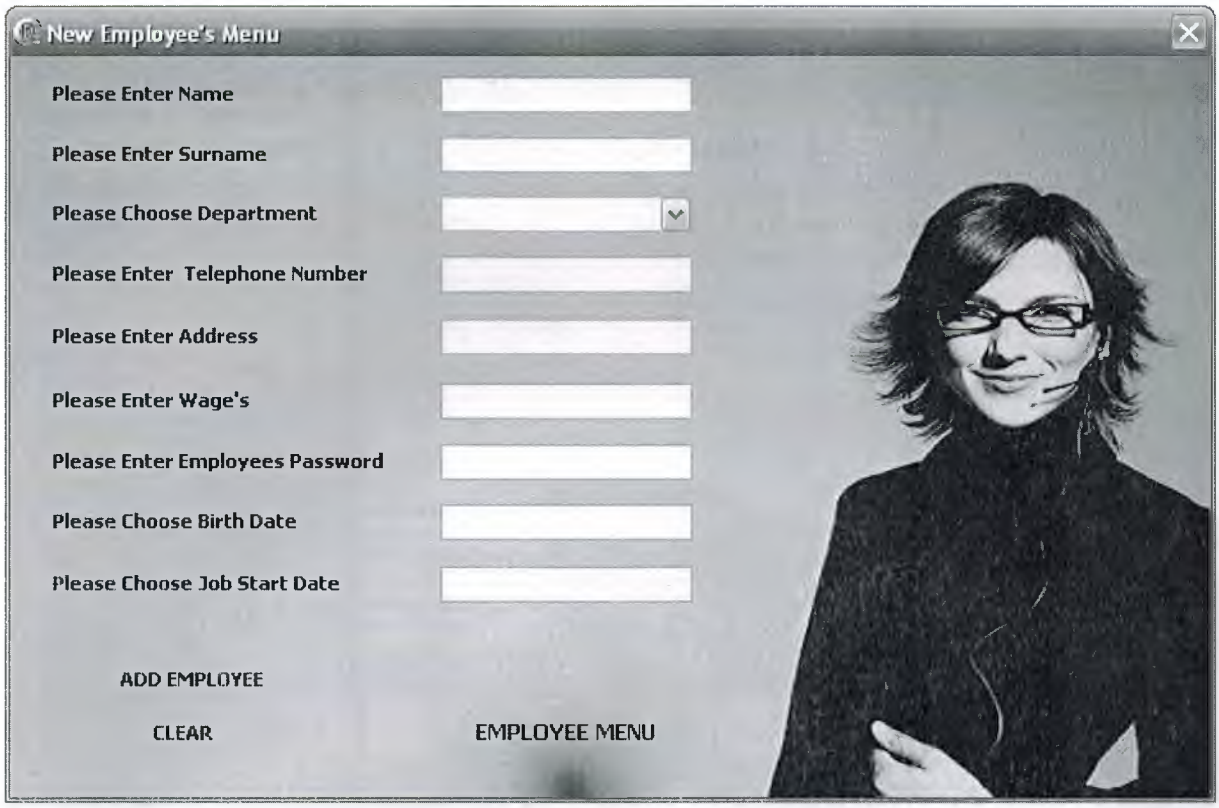
MANAGER MENU



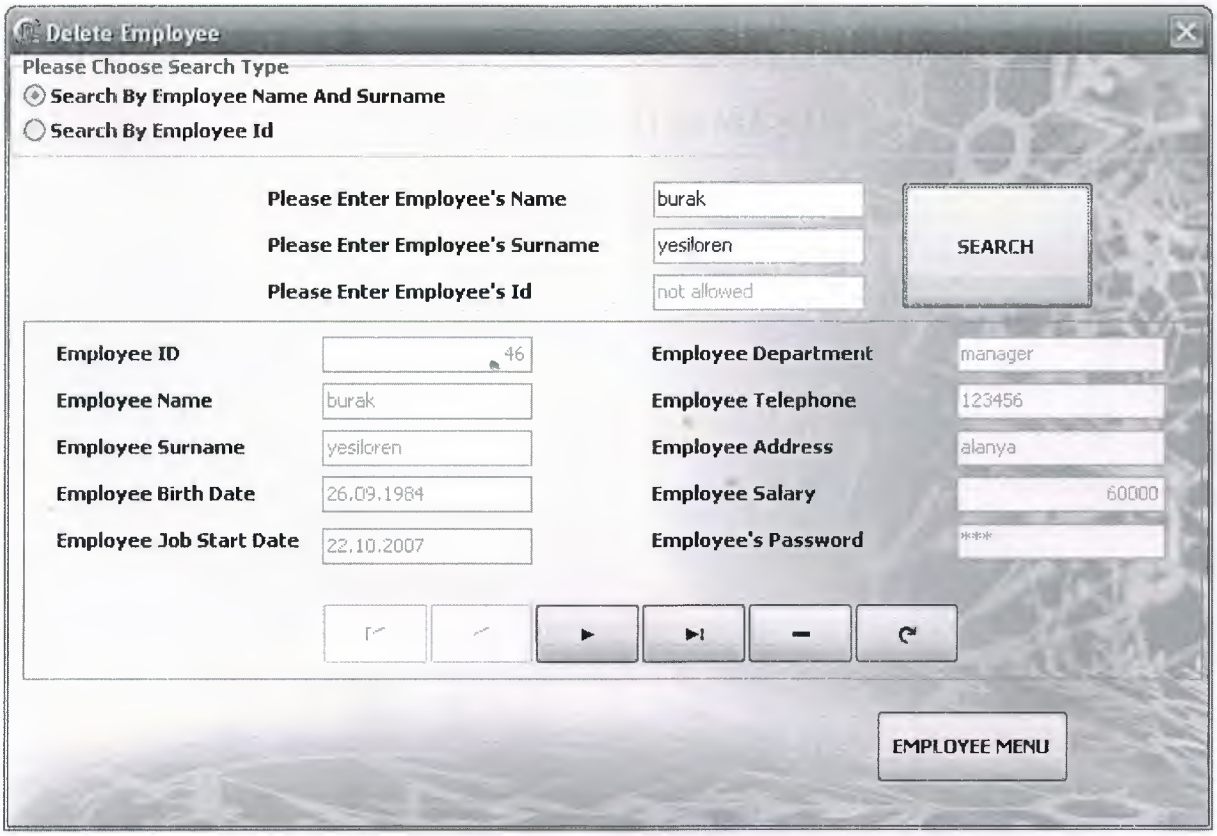
EMPLOYEE SUB MENU



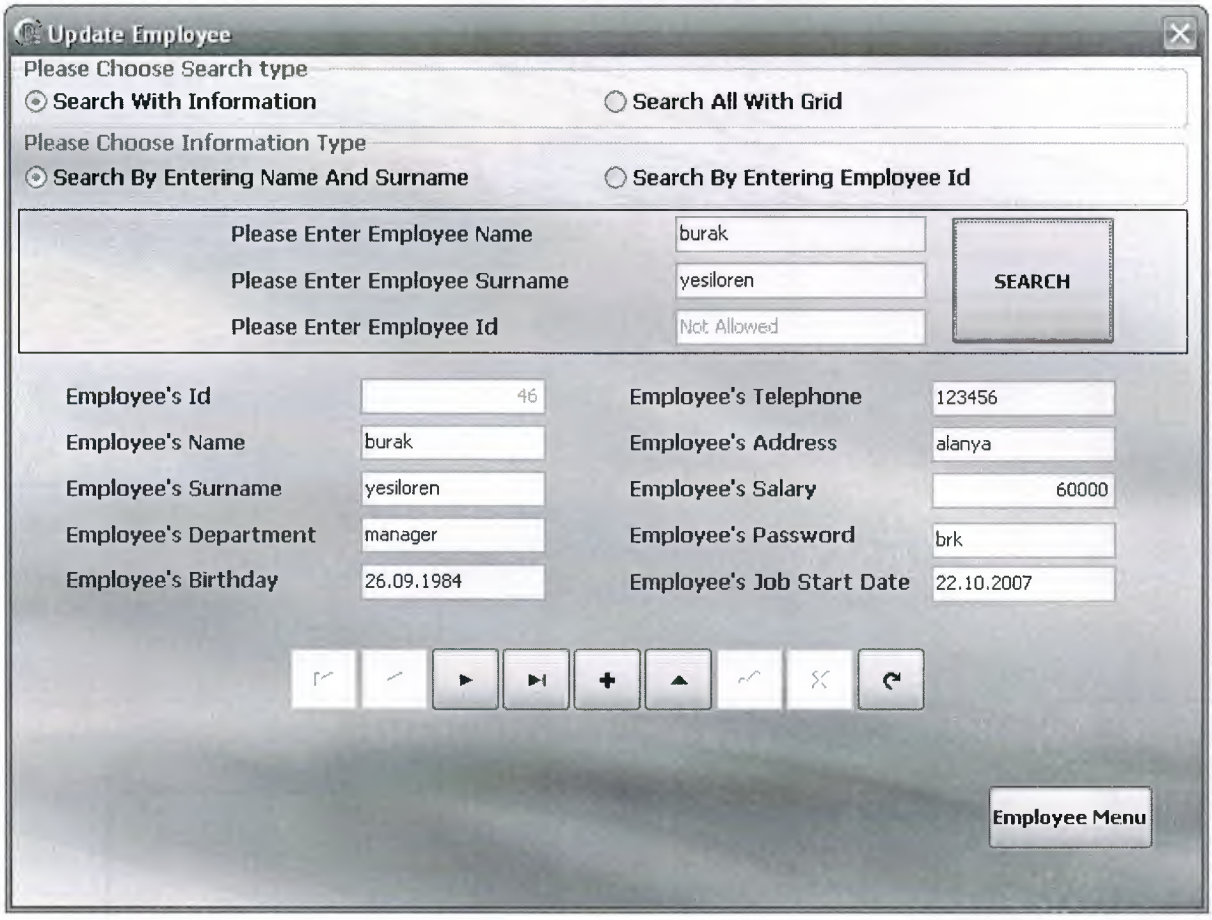
ADD EMPLOYEE



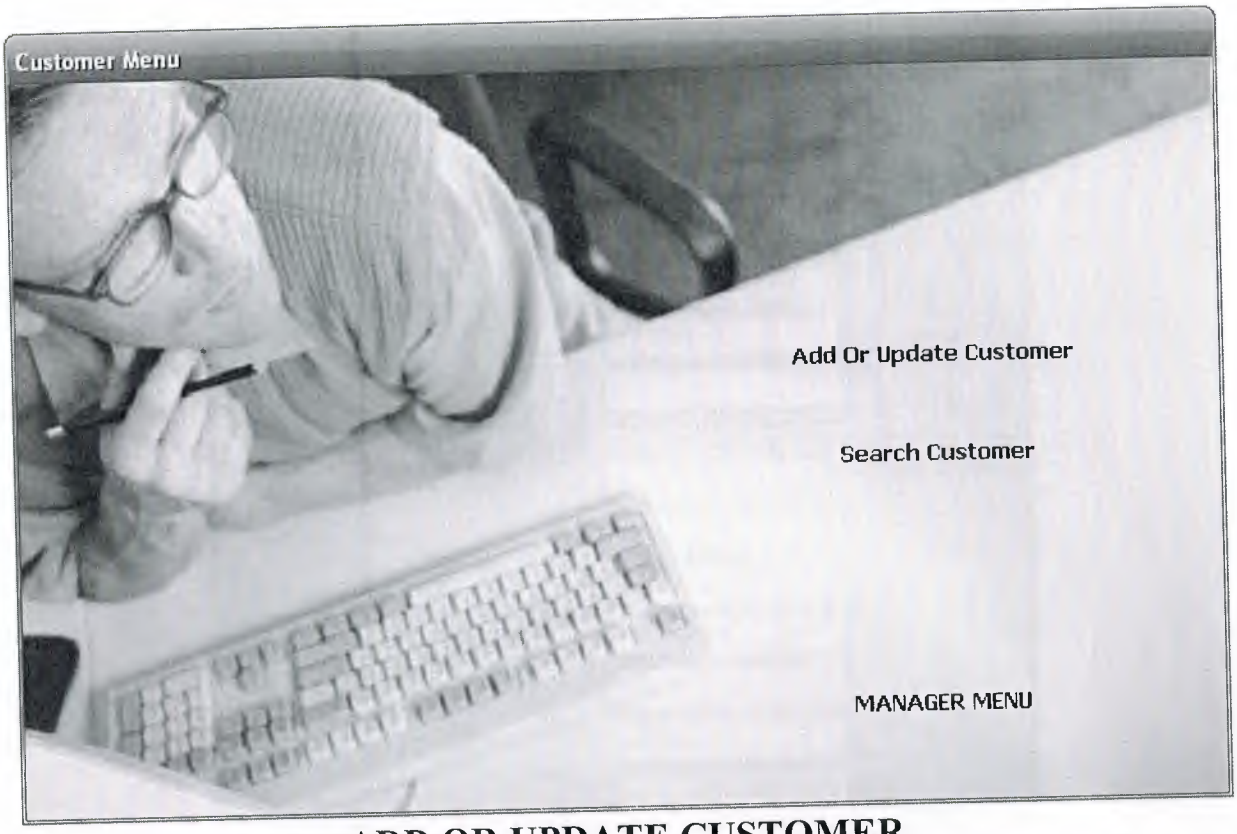
DELETE EMPLOYEE



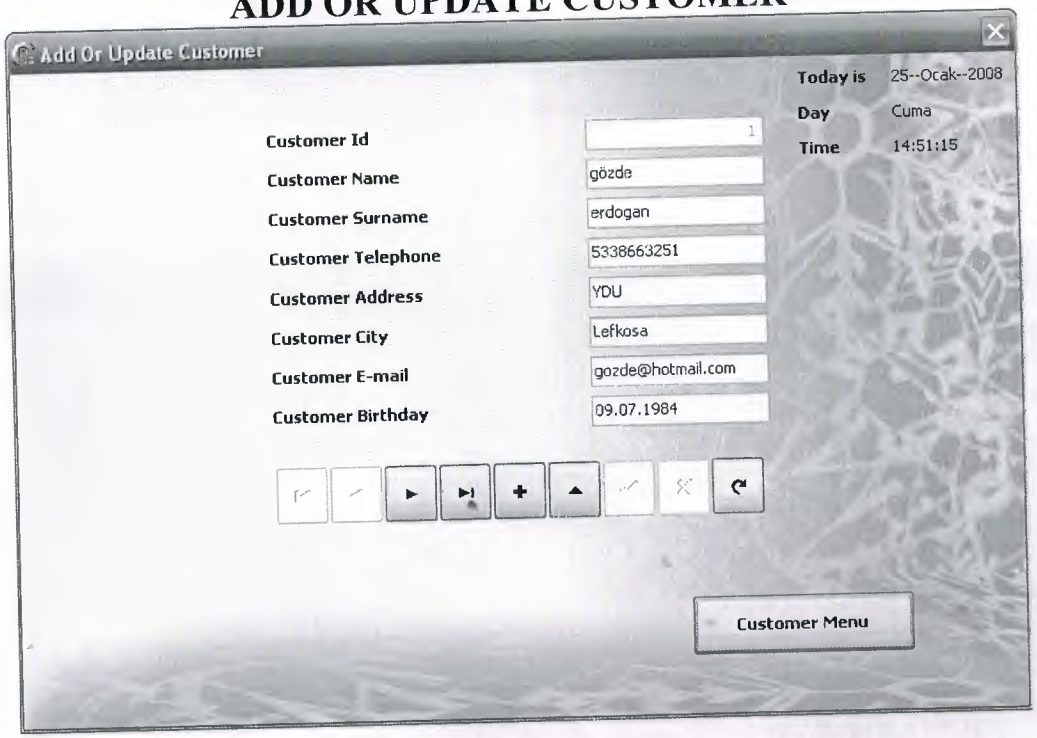
UPDATE EMPLOYEE



CUSTOMER SUB MENU

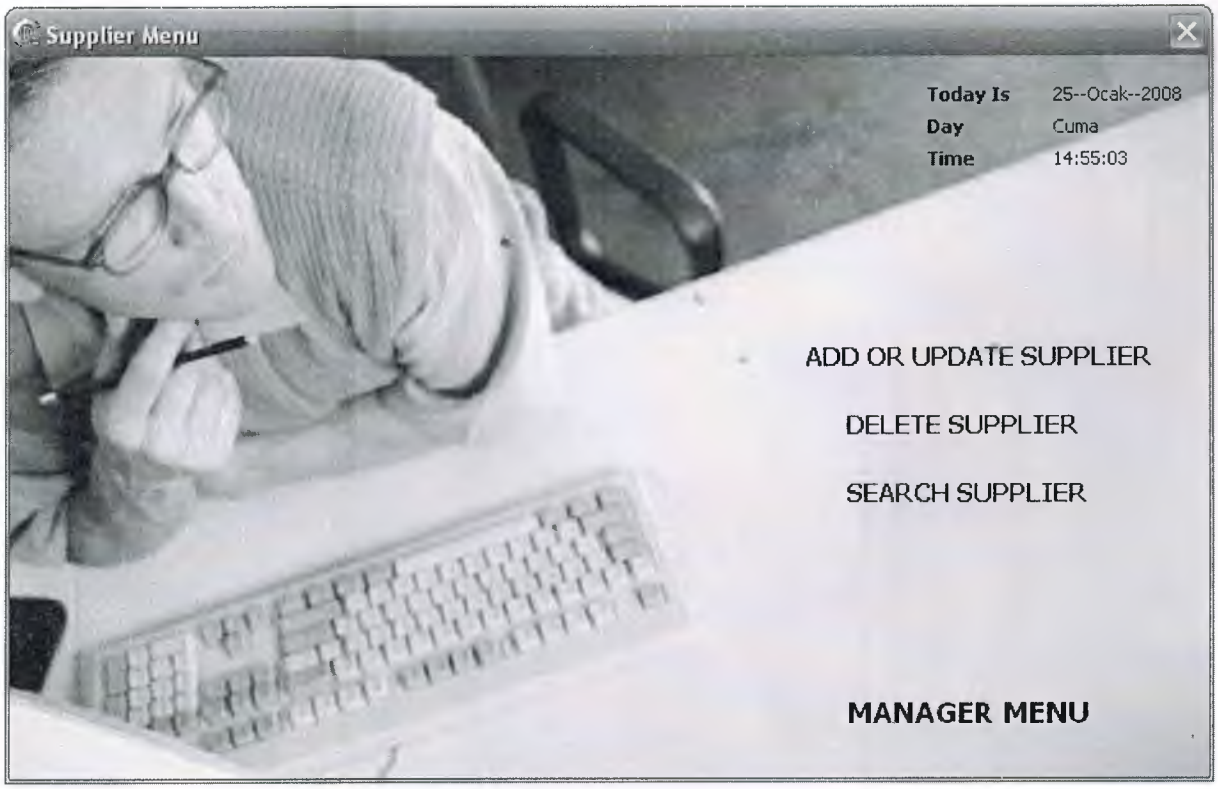


ADD OR UPDATE CUSTOMER



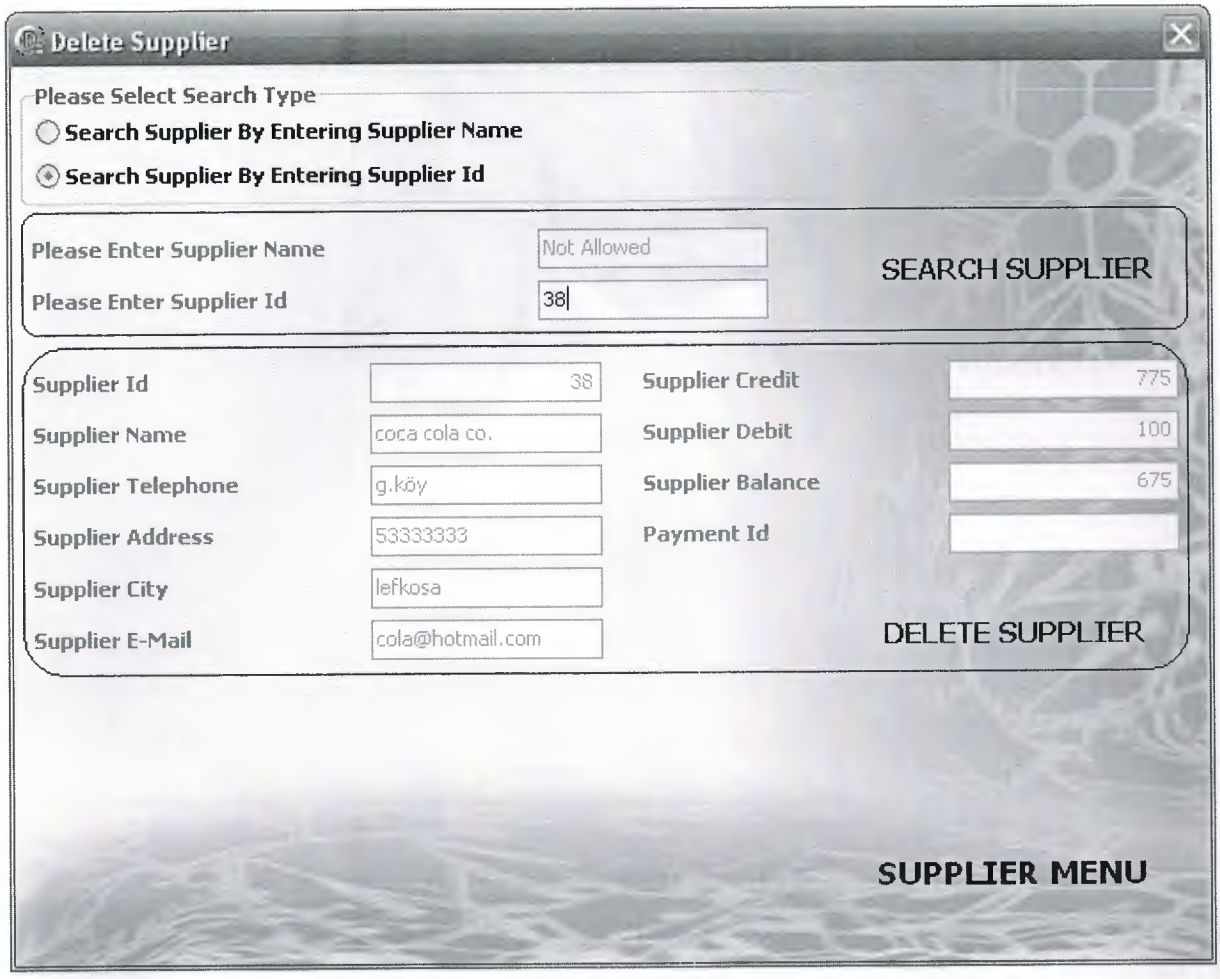
SEARCH CUSTOMER

SUPPLIER MENU

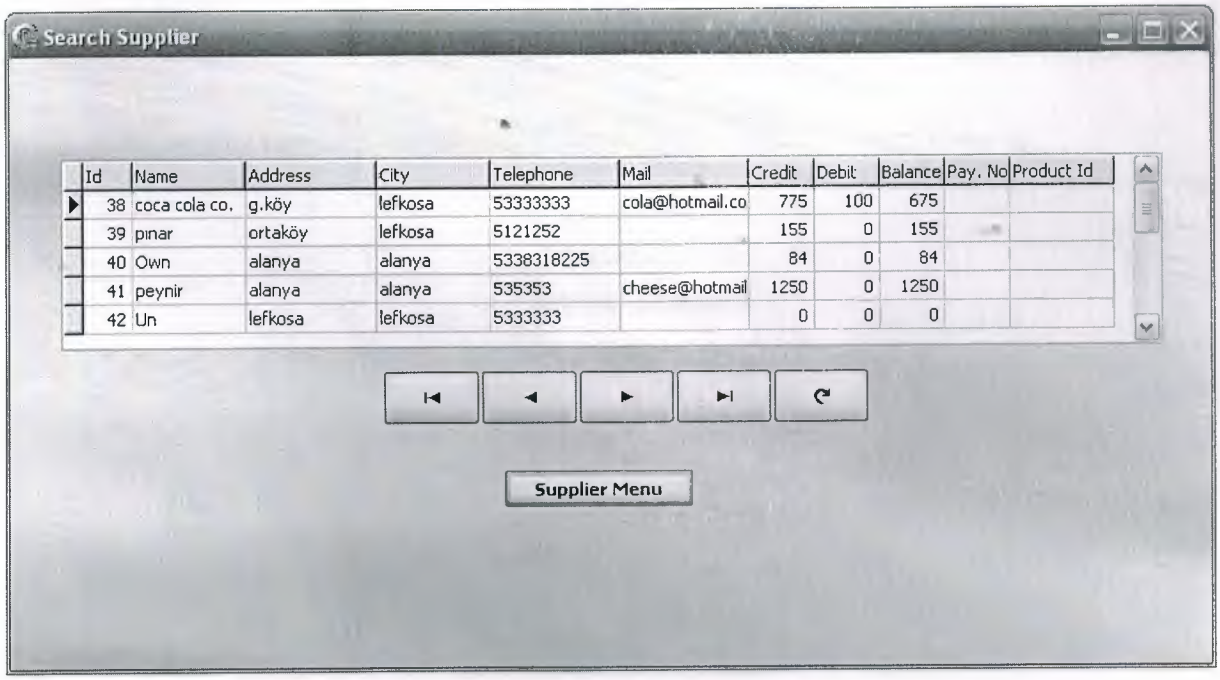


ADD OR UPDATE SUPPLIER

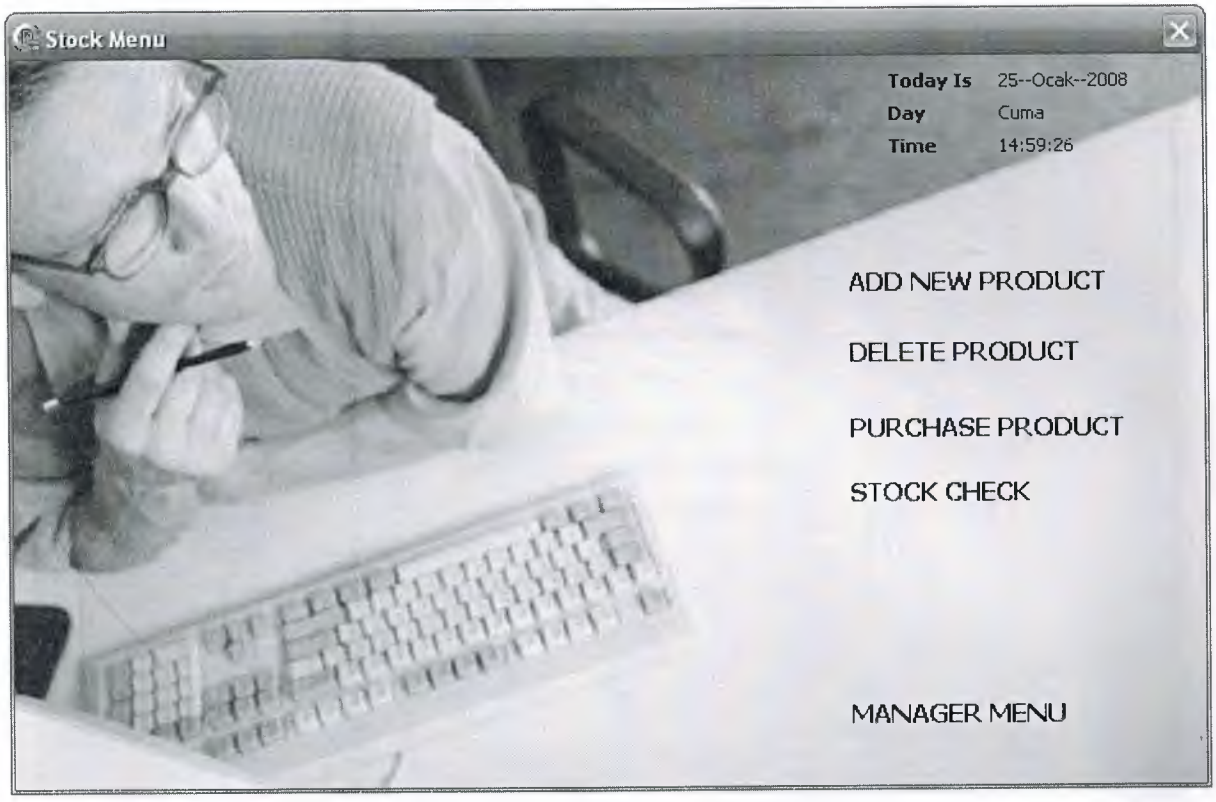
DELETE SUPPLIER



SEARCH SUPPLIER

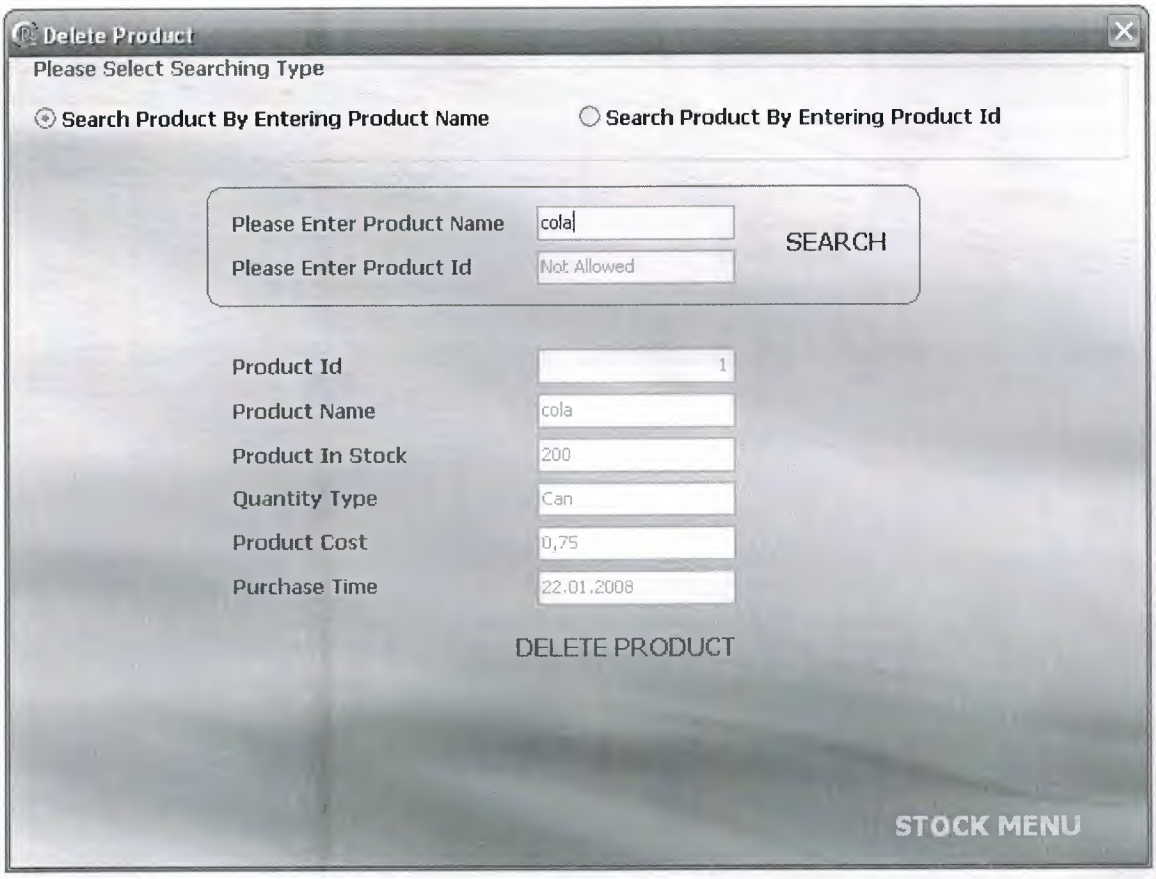


STOCK SUB MENU

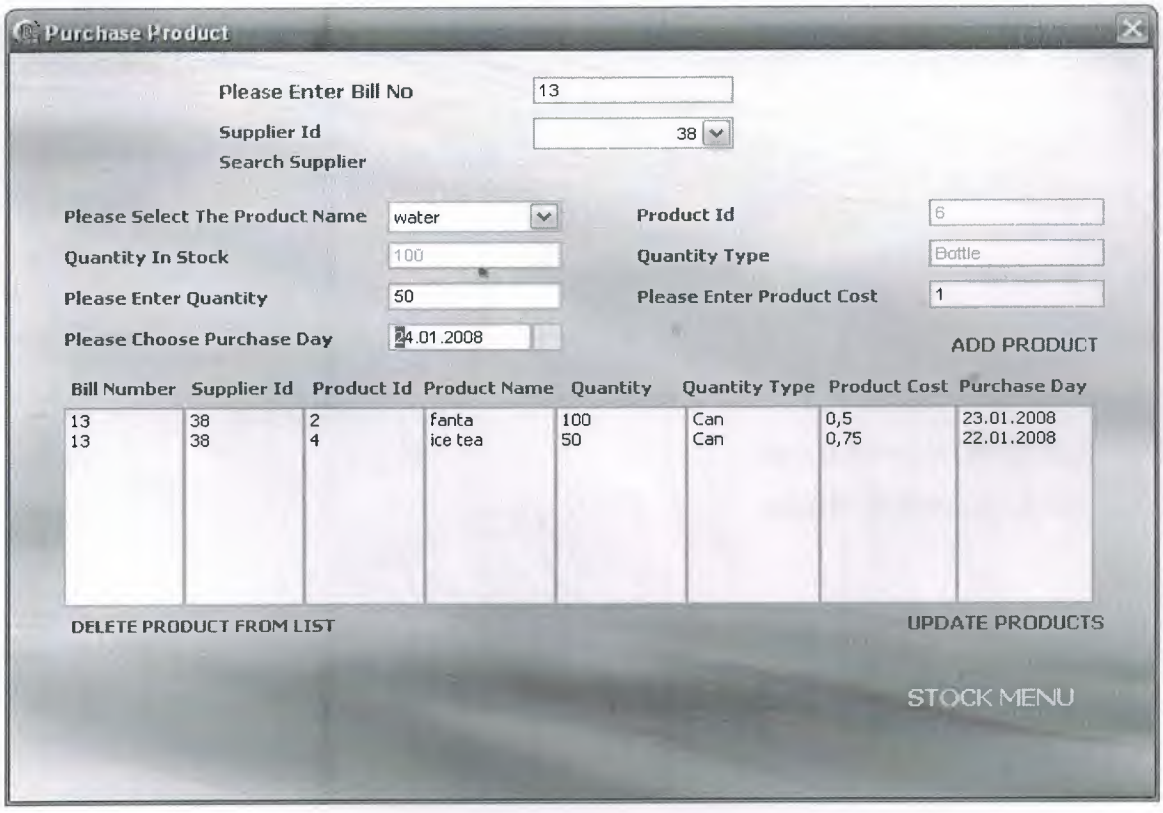


ADD NEW PRODUCT

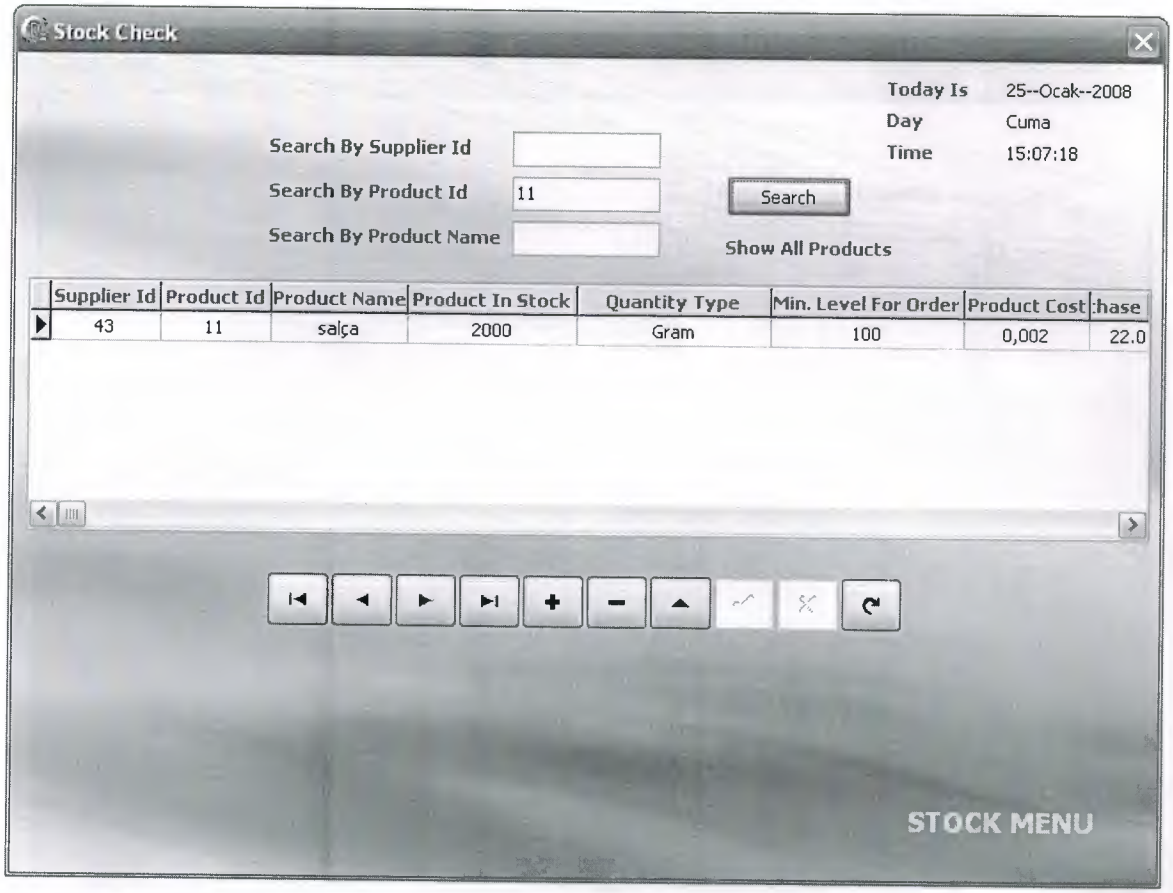
DELETE PRODUCT



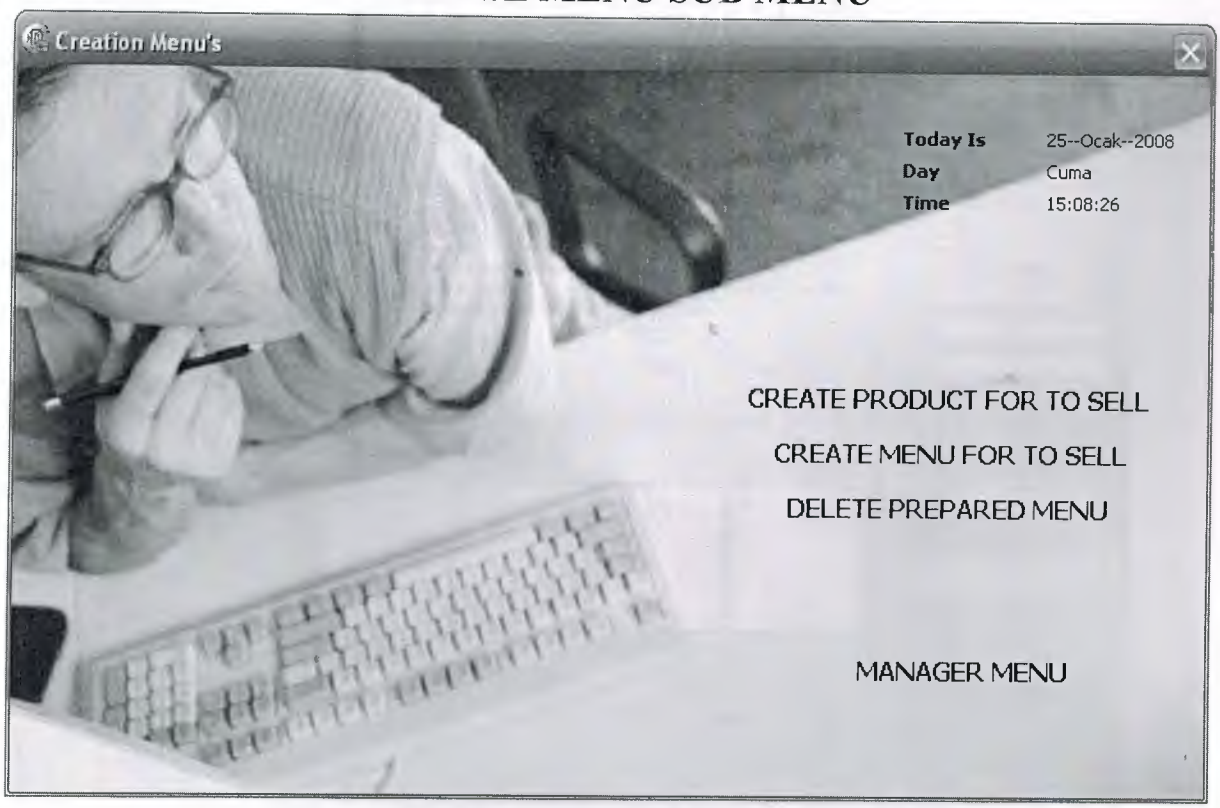
PURCHASE PRODUCT



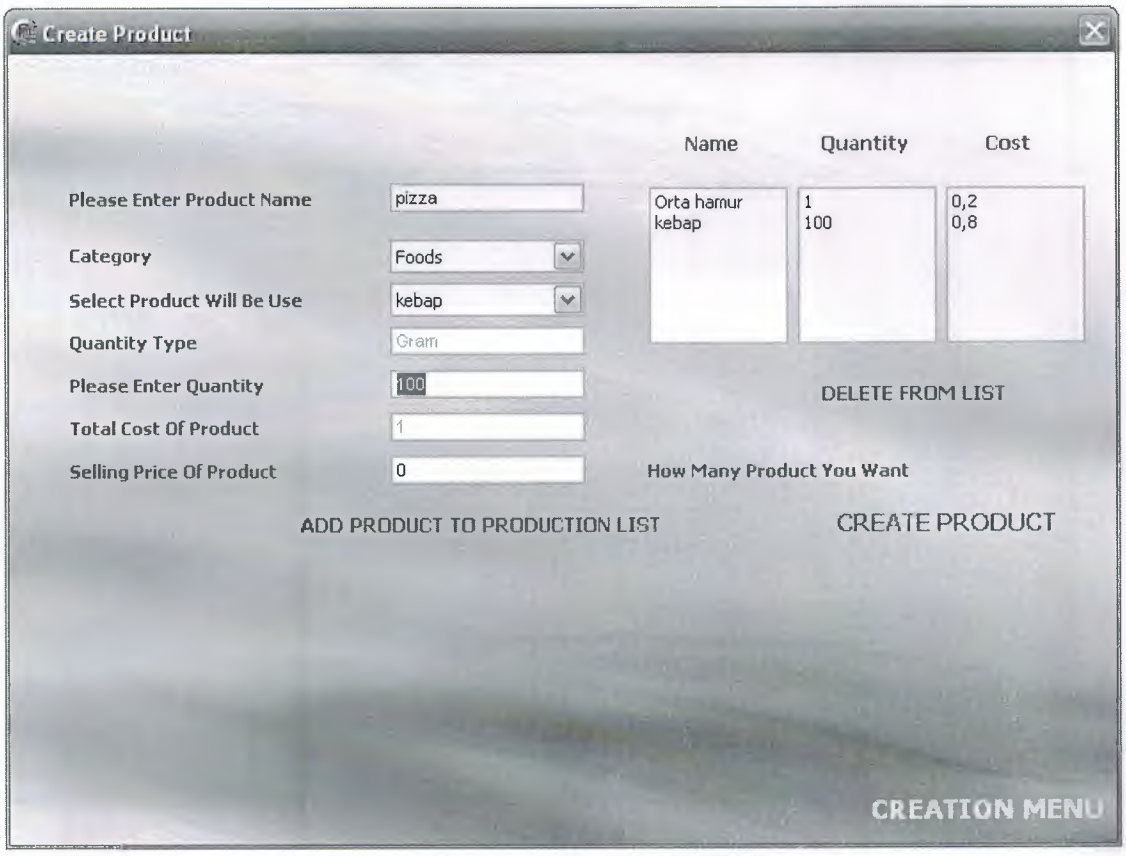
STOCK CHECK



CREATE MENU SUB MENU

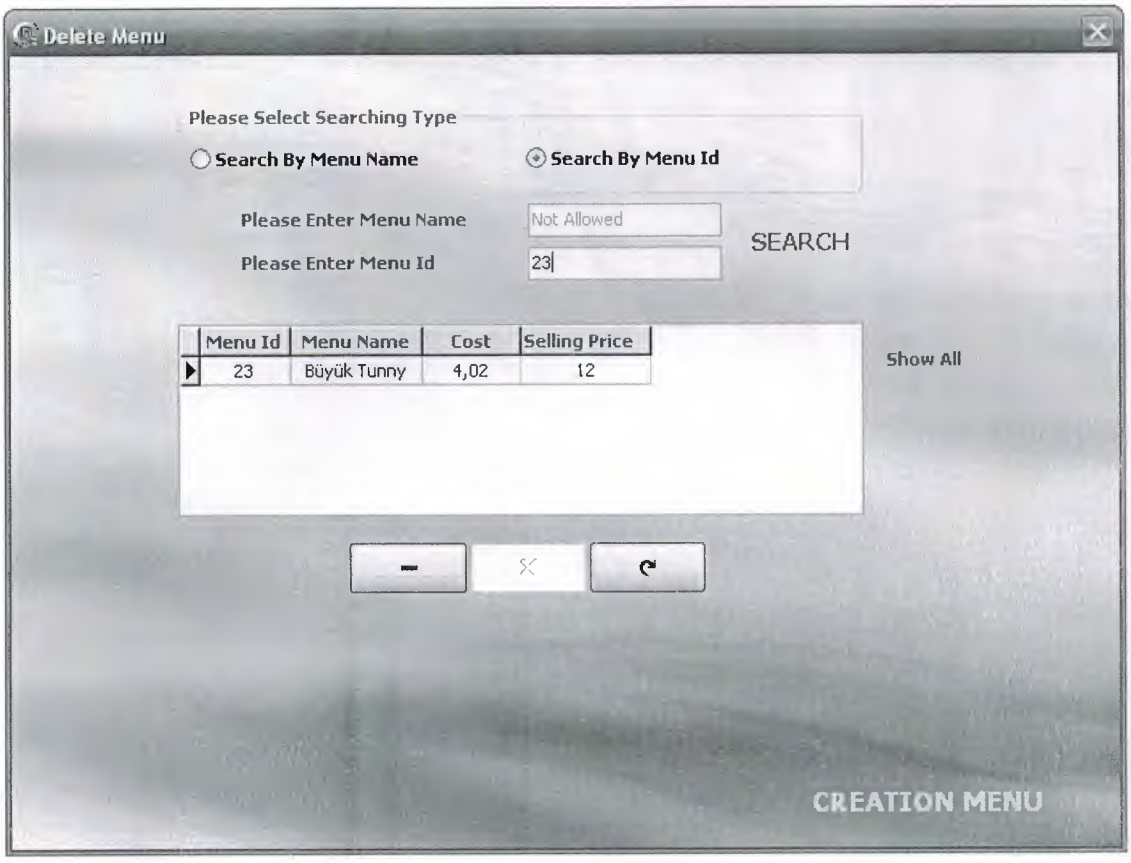


CREATE PRODUCT FOR SELL MENU

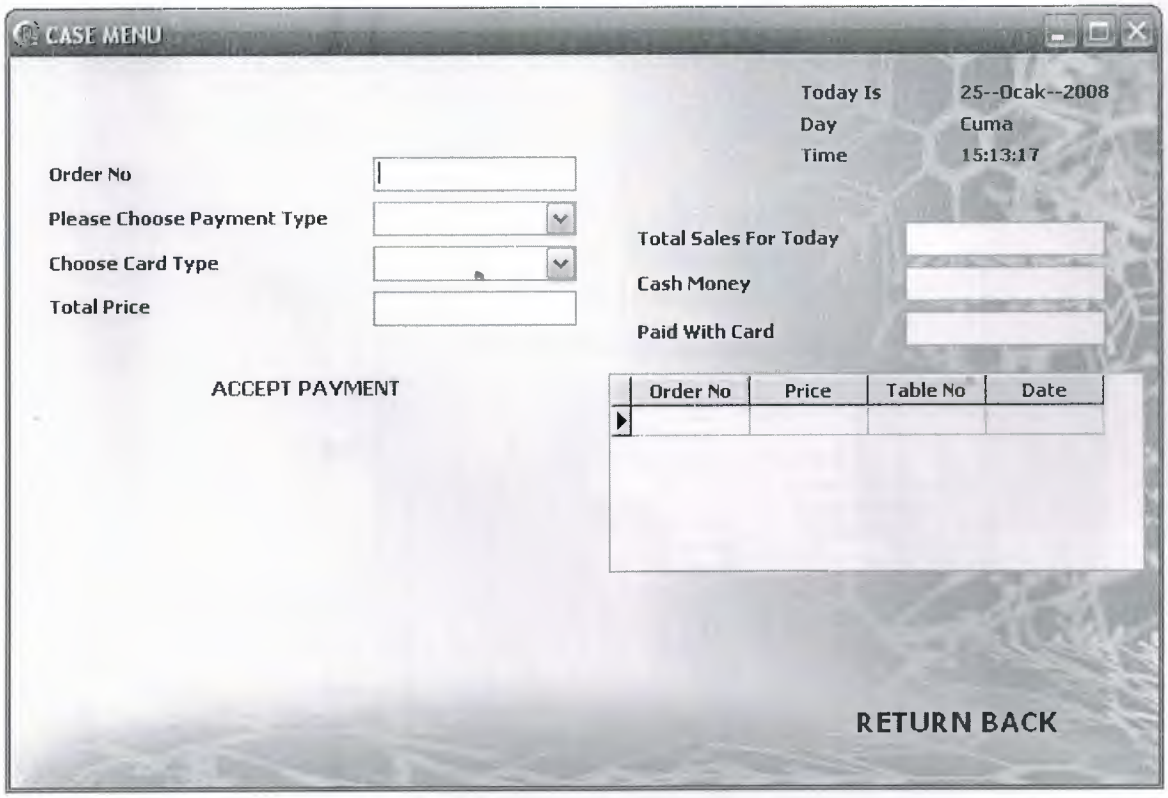


CREATE MENU FOR SELL MENU

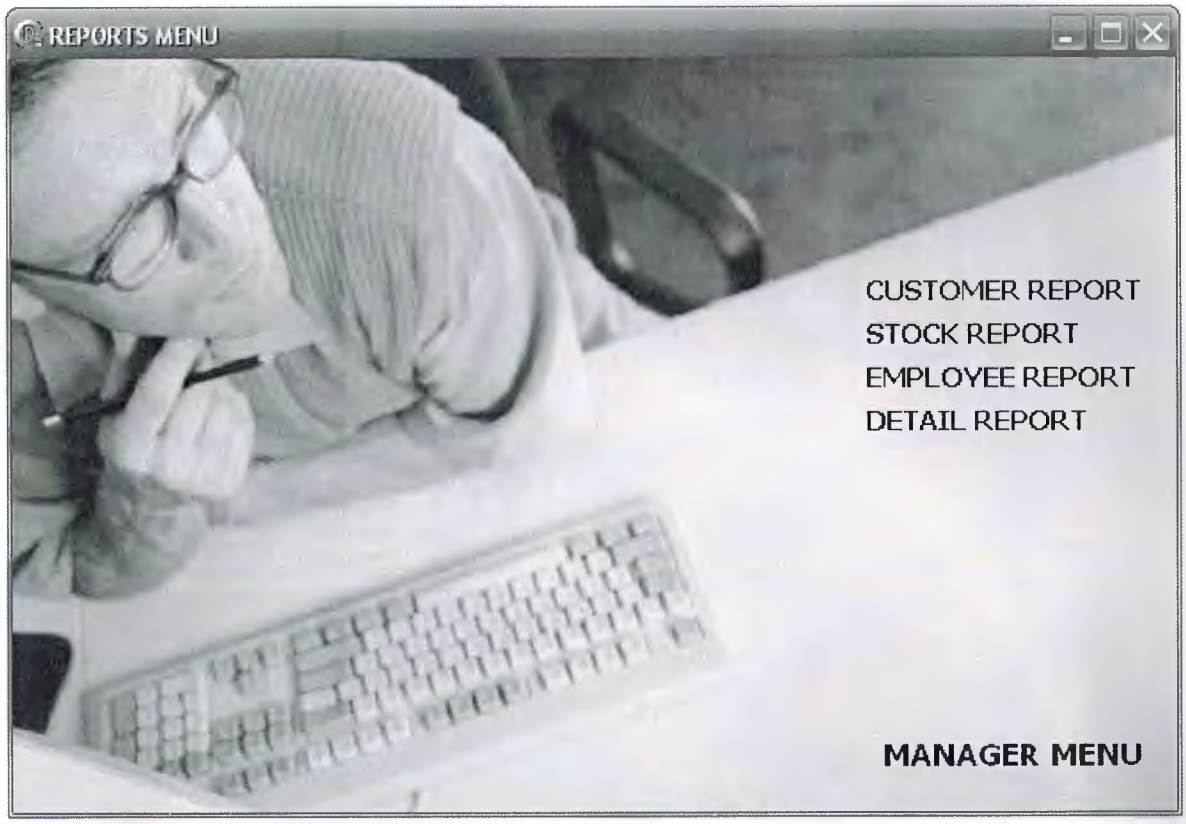
DELETE PREPARED MENU



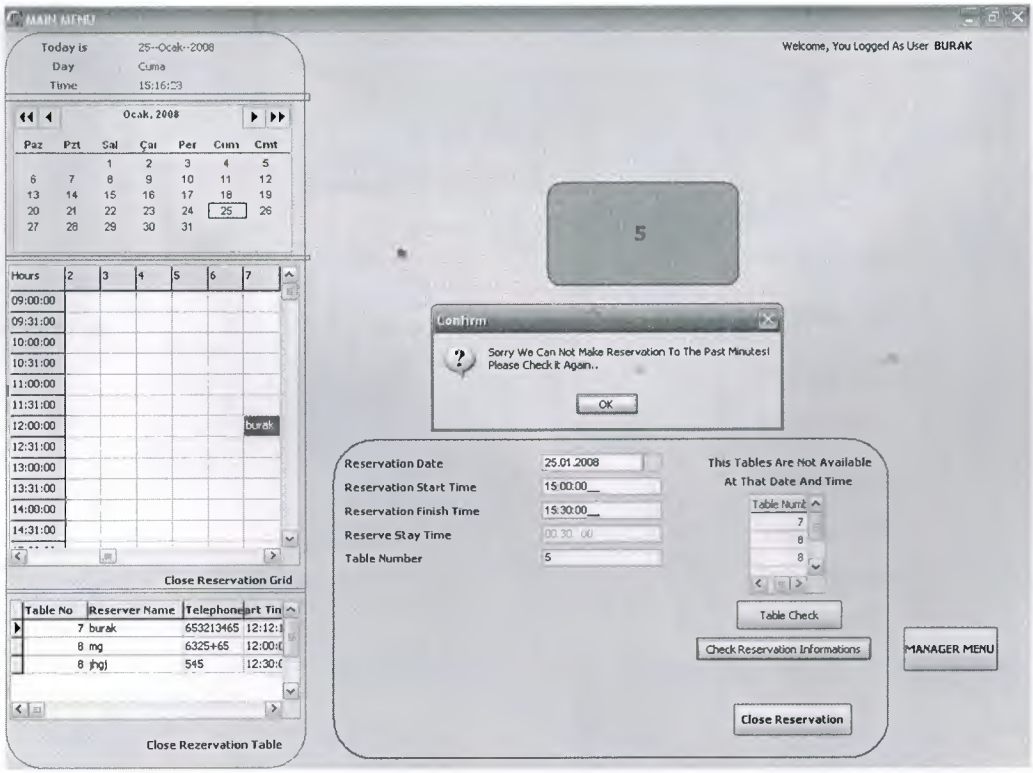
CASE MENU



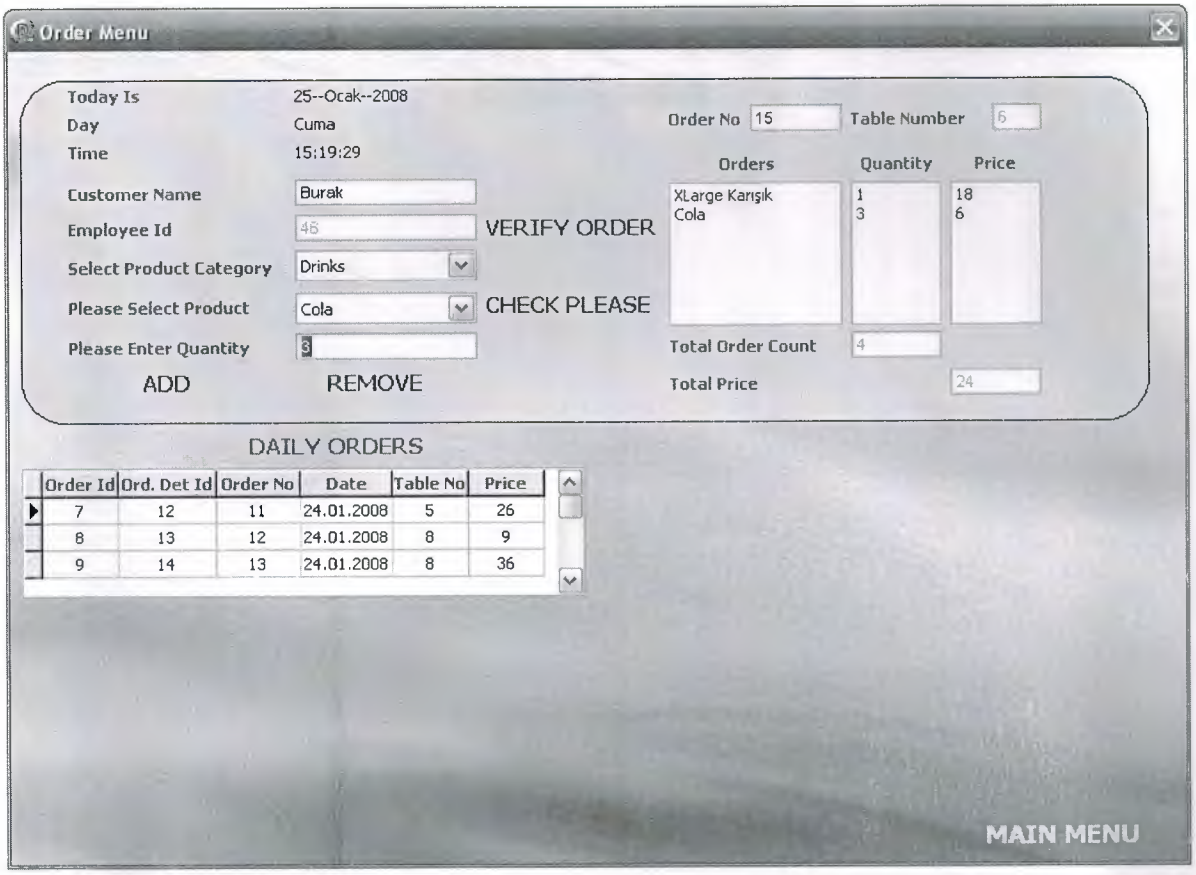
REPORTS MENU



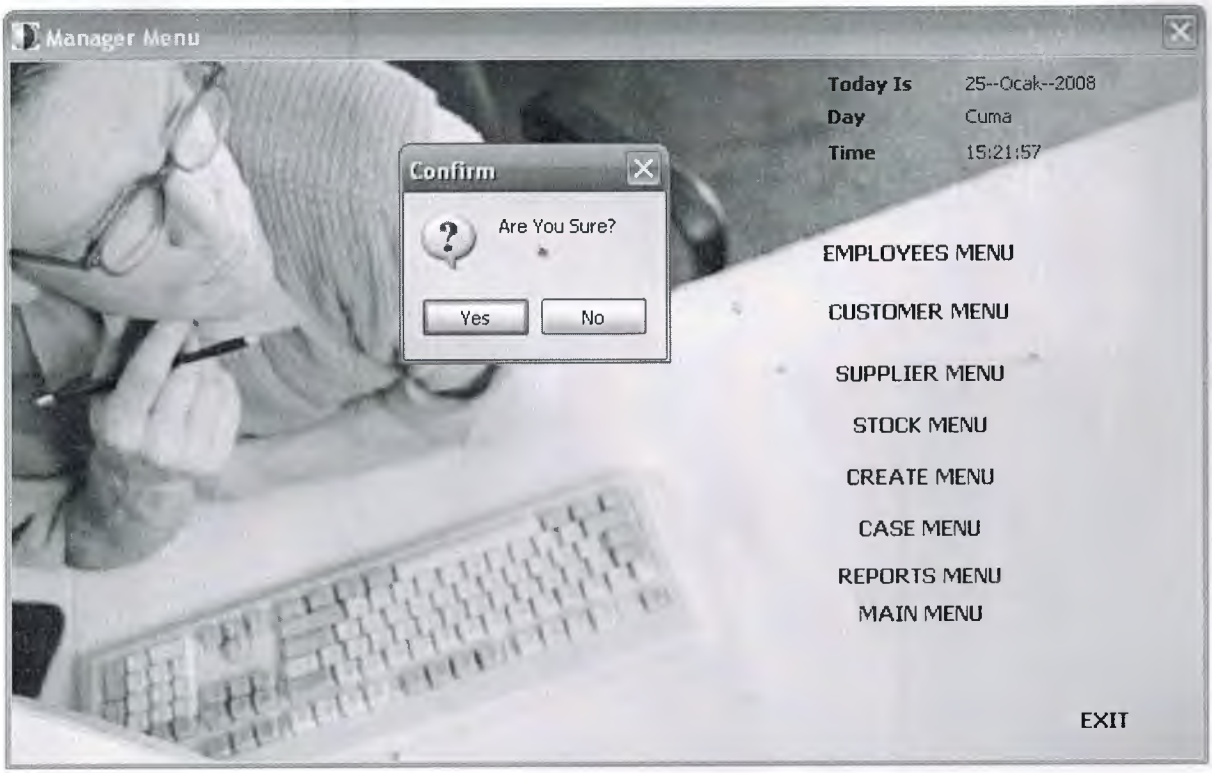
RESERVATION MENU



ORDER MENU



EXITING FROM PROGRAM



APPENDIX II

SOURCE CODE

You Can Access Source Codes on CD.