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SOFTWARE OBSERVATION

FROM THE MARKET

FOR THE PROJECT RA-I

(Restaurant Automation – I)

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1st program

Restoran Otomasyon Sistemi (ROS)

http:// www.teknomim.com/

Description of the system:

ROS is an automation system which suggests a practical solution to restaurant management. By the help of handheld computers, system offers an efficient and error-free management of a restaurant. It also provides a reporting system, which makes the whole system more measurable and enables the managers evaluate the system correctly. ROS also contains simple accounting and stock management units. Appendix A.1 is a very good representation of the basic components of the system. And also architecture of the system is represented well by Appendix A.2.

As you may notice while examining Appendix A. 1, there are 5 main modules in the system. These are:

- Handheld computers
- Kitchen monitors
- Cashbox module
- Management module
- Reporting module

Handheld computers:

Users must enter their user names and passwords, while launching the handheld computers because of security reasons. Opening a table, taking orders, controlling reservations are the processes done by the handhelds. After the order is taken, waiter sends the order to the kitchen only by one touch or one click. Some additional things can be done according to the user needs, like determining whether the orders will come one after another, or at the same time. You can see the order form in Appendix A. 3.

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Kitchen monitors:

The given orders will be distributed to the appropriate printers in the kitchen according to the types of the orders. If something cannot be prepared because of running out of some ingredient, kitchen monitors are used to indicate the situation by the workers in the kitchen. An example kitchen monitor screen can be seen in Appendix A. 4.

Cashbox module:

Appendix A. 5 is screenshot of the main menu in the cashbox module. This module can be used by the users which are predefined by the system. Users' validity is identified by their passwords. All users have different rights. For example permitted price-cut percentage differs from one user to another. Users of this module can see the open tables and the order lists of these tables. An example cashbox module screen can be seen in Appendix A. 6. A lot of additional operations can be done by this module such as; dealing with packet & table orders, reservation operations, expense entering, price-cut operations, end-date operations, up-to-now sale flow monitoring, extraordinary situation intervention(like canceling/adding orders from/to the bill)

Management module:

This module is for the management of all the other modules. System's all kinds of settings are defined by using the module and 5 main things can be done:

- *Menu operations:* Insertions, deletions, and modifications of products
- *User operations:* User definitions & deletions, modifications of the rights of users
- *Table operations:* Table definitions, deletions, and reservations
- *Product type operations:* Definitions and deletions of product types
- *Payment type operations:* Definitions and deletions of payment types

Reporting module:

This module is actually designed for managers of the restaurants. By the help of the module, monitoring the firm will be easier. This part of the system not only provides daily reports but also provides reports summarizing a number of months or years.

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Therefore it helps the managers a lot when they want to make a brief estimate of future profit. This module mainly provides reports like:

- *Daily activity reports:* At chosen dates, shows the sales, pay-cuts and giro.
- *Reports for date intervals:* Between chosen two days, reports how many products have been sold on each category of products, total giro and pay-cuts.
- *User reports:* Between chosen two days, reports the products which have been sold by a specific employee (user).
- *Product reports:* Between chosen two days, reports the sales of a specific product.
- *Table reports:* Between chosen two days, reports the sales to a specific table.
- *Cashbox reports:* Between chosen two days, reports the sales that are made from a specific cashbox.

Comments on the system:

The basic components of this software seem to be well organized and simple. The figures representing the main structure of the program are a good abstraction of the overall system, and constructing a modular, decomposable model. As it is seen, there are 5 main modules in this system. We think that they are acceptable for all the parts of our project except the “online reservation and order management” and the “customer management” part. Some details can be added to stock management and accounting parts, but the skeleton of the program is more or less overlapping the scene in our minds for the collective parts. In other words, the 5 modules introduced by the ROS system will be a good start point for us; of course we must add some modules for the missing parts later.

Architecture scheme gives us a hint on wireless communication handling; communication between handhelds and the main computer is conducted in this system with the help of a wireless communication point and a switch.

We found the GUIs of the handhelds inadequate by looking at the order form. Order form is inefficiently designed, and using this may slow down the waiters. Instead of using just combo boxes, submenus can be used in the order form for a tinier look. And

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also we thought that manually typing table numbers in every order is not a good idea. Instead of that, tables can be graphically chosen from an upper level menu. Also this form is not appropriate to take detailed and non-confusing orders, since there are no specific options for each meal. Only notes can be taken manually, but this is neither reliable, nor efficient.

We thought that the main reporting topics of this system are very well chosen. We decided to use the reporting titles of the system as a starting point in our project, at the reporting module.

User login system used in this program is useful; we will construct a system similar to that in our project.

Program examined for detailed information on "Customer Management"

Amazon.com

http://www.amazon.com

Description of the system:

Amazon.com is a popular web site by which people can order goods, especially books. New users must sign in if they want to order something from the site. During sign in process, system asks e-mail address, name, and birthday (optional) of the user and wants a self chosen password from the user. If user prefers using the secure server, his personal information will be encrypted while storing in the system.

User accounts are composed of "Where's My Stuff?" and "Account Settings" parts. In the first part, the information of the orders that users have given are stored. Users can see open & recently shipped orders, cancel an order, change shipping/ billing addresses, change payment methods, etc. by using the links contained in this part. In the

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second part there are some subparts such as personal information, payment settings, e-mail notifications, shopping lists. In personal information part, users can update their names, e-mail addresses, birthdays, etc. In payment settings part, users can edit/delete their credit card information and can do some other stuff about gifts. In e-mail notifications part, users can determine which kind of alerts/notifications they want to receive from the. In shopping list part, users can develop a shopping list and save it on the system for using later. A part of the main menu of "user accounts" can be seen from Appendix A. 7.

When users sign in, they have a shopping cart and a wish list. They can put the products they want to buy in their wish lists and if they are sure to buy, in their shopping carts, as if they are actually in a supermarket.

This site gives importance to security. When users sign in using secure server, all the information they give is automatically encrypted by the system. The entire critical information users store in their accounts is also encrypted.

Program doesn't send a confirmation e-mail to users to control the e-mail address's validity. Since when users are surfing around the site, no need to control anything, but when the order time comes, the system starts to control the validity of the information that users have given to the system.

Sign-in process is extremely quick in this web site; while signing in, the only information they want from the user is his e-mail address, name and a chosen password. Making a quick sign-in can be an advantage for a restaurant web site. Think of a hungry person searching for something to eat in the web. If your restaurant's web page has a sign-in process which wants a lot of extra information that is actually not needed at that moment like preferences, hobbies, special dates, etc. from him, he will get angry and look for another site. We mustn't forget that the web site of a restaurant is not only for easy ordering and reservation, but also for best introducing the firm to the user. By examining this site, the most useful thought which come to our minds is that "giving every user an

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account by a quick sign-in process and letting them add more information later" is good strategy in customer management.

In this site, users can add lots of things into their accounts. By looking at these things, we can say that in our customer management system, the main options which can be used by the users are:

- Order status control (statuses: didn't sent yet, will be received in [predicted delivery time] minutes)
- Users can see orders they have given in a specific month, year, etc. And can follow-up the points (it is like bonuses) they gained from their orders in monthly or yearly basis.
- Change, modify the address information. Also users can have a right to store more than one addresses in the system and just before the ordering process has completed, system can ask to the user which address he wants to use in that order.
- The same thing can be performed for the credit card information, users can have a right to store more than one credit car number in the system and just before the ordering process has completed, system can ask to the user which credit card he wants to use in that order.
- Let the user develop preference lists and store them in the system. These lists may be used by the user when ordering. By the help of this feature, users can save a lot of time.
- Users must have a right of blocking or accepting the notifications, alerts, promotion news, etc. sending from the web site.
- Users can modify their personal settings like e-mail address, special dates, address books, etc.

In our project, we want to provide fewer options than the options provided by this web site to the users. We eliminate some of them, and roughly decide on the options which are on the above.

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Program examined for detailed information on "Online Reservation"

MillenniumRestaurant.com & OpenTable.com

http://www.millenniumrestaurant.com

http://www.opentable.com

Description of the system:

This is a site introducing a restaurant which enables the users make online reservations.

Main menus of the site are:

Restaurant: Using this menu, users can have brief information about the restaurant. It has submenus such as:

- *Press:* Contains some newspaper news about the restaurant.
- *Team:* Gives detailed information about the restaurant's staff.
- *Design:* Gives detailed information about the restaurant's design.
- *Cookbook:* Lists the cookbooks which are written by the restaurant staff.
- *Gift certificates:* For the ones who want to give someone a gift of eating a meal on this restaurant
- *Special events:* Gives information on special events held on the restaurant

Menus: The submenus of this menu are: Appetizers & Small Plates, Entrees, Desserts, Wine List, and Beverages. In each category, the meals, the ingredients that are used in the meal and the price of the meals are listed.

Reservations: This menu gives some information about reservation procedure and directs the customer via a link to a web site (*OpenTable.com*, it will be introduced in the following pages) which enables the users make secure reservations.

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Catering: Morning and afternoon teas and coffees, lunch and dinners can be organized by using the facilities the restaurant provides to the customer. Detailed information can be taken from this menu.

Links: Some links of the sites on Health & Nutrition, Vegetarian organizations, etc. are listed in this menu.

Description of the system – Open Table

This web site is used by restaurants like Millennium Restaurant, for online reservation. This site is also good for seeing an example of a customer management system. Actually, OpenTable.com is defining itself as "the premier restaurant reservation network". Users can sign in to the system and start gaining "OpenTable dining points", which is actually something like bonus. The more users use this site for reservation, the more they gain dining points.

Users have profiles in the site. When user profile menu is chosen, a form is displayed, which can be seen from Appendix A. 8. The main work the site does is online reservation for the restaurants which somehow registered this site. When users want to make a reservation, first of all, they choose the restaurant they prefer from a main menu, then a reservation form like in Appendix A. 9, is displayed.

System sends a confirmation mail to the addresses users have given, when reservation is done successfully. When users reserve something, their dining points will increase and after it reaches a limit, they can use them as dining cheques.

Comments on the two systems:

The neat design of Millennium Restaurant's web site impressed us. We thought that design of a web site is important for impressing the customers. User cannot do online ordering from this site, but online reservation can be done. This site is using the

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restaurant reservation network named OpenTable.com for reservations. OpenTable.com provides reservation service to the registered restaurants. If we look at the customer management side of this site, we see a quick sign-in process as in the amazon.com, a simpler user account, and less options (no multiple address option, no control on notifications, no control on choosing report types, no preference list, etc.). Since this site is for making reservations to various restaurants, detailed customer management is not needed there. But in our system, we may need a more detailed one. Reservation is done very simply; user asks to the system whether there is a non-reserved table in the chosen restaurant at the date and time he specified for a number of people. Dining points system in this site is similar to the one in amazon.com, this one is a bit simpler, and we thought this complexity is enough for our project.

Program examined for detailed information on "Online Ordering"

PapaJohnsOnline.com

http://www.papajohnsonline.com

Description of the system:

Papa John's Online is the web site of a pizza restaurant. Using this site, users can do online ordering. While registration, system ask user's e-mail address, name, address, phone and password. Users can modify all these settings later, whenever they want. When users sign in, the system asks them what they would do; change account settings or order. If users choose ordering, then asks for delivery or carryout. Whatever is chosen, a screen with full of options of pizza kinds, drinks, sides and extras is displayed. And also there are some other options on the screen like: Logout, Enter promotional code, Add my last order, Change location, Change to carry out/delivery, Shopping cart is empty/View my order and checkout. If you want to have a brief idea on how this screen looks like, screenshot of the half of the screen can be seen from Appendix A. 10. If user decides to order something, he puts them into shopping cart and then follows the "View my order and checkout" link. The form displayed after that action can be seen from Appendix A. 11. If payment method is chosen as cash, the confirmation screen comes after that is on the Appendix A. 12. Else, if payment method is chosen as credit card, some additional

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information about credit card will be asked to user. The form which is displayed at this time is at the Appendix A. 13.

Comments on the system:

This site's registration form is a bit long comparing to the others, but this does not mean that it asks for extra information. Conversely, the additional questions asked there are necessary for delivery; address and telephone number. Shopping cart seems very sympathetic to us and also we thought that it enables users create their order lists efficiently. Tip calculation and offer is a simple but interesting feature of the program. We intended to make something like that.

As it can be noticed, customer management part is weak in this site. After registering, user mustn't rewrite his credit card number settings every time he orders something; this is time consuming for users and also for the system. Thought of a case that a customer makes a menu for his family, describes pizzas in detail, he works on the menu at least 5 minutes, and wants to order the menu whenever he wants. In this site, he must consume 5 minutes on the each order. A solution for that will be letting users store their preference lists and providing an easy access to them. So by only one click, users can order their specialties.

A promotion code is introduced in this site. This is actually a good way of making customers happy. In special dates, times, or for the orders exceeding a limit quantity, system can give a promotion code to the user (this can be independent of "Dining points" idea), which can be a pay-cut, or an extra drink, etc. for being used in the following orders by that user.

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2nd program

Restoran Otomasyon Programi (ROP)

http://www.rop.com.tr/

Description of the system:

We will try to make a summary of our exploration about **R**estaurant **A**utomation **P**rogram (ROP) on net. Since ROP is really so much detailed, we had to cut it off and made a brief introduction of the product by screenshots of its user interface.

Actually, before this online investigation on the net, we, as TusubasaSoft, tried to itemize some features that should exist on this kind of automation to meet the general needs. And as a result, we got many of the followings in common, which are the main properties of ROP:

- Track of Addition
  - for table
  - for package
  - for customer
- Account (Cash-Credit Card-Current-Foreign Money)
- Receipt
- Kitchen Control
- Reservation
- Customer Tracking
- Daily sale lists
- Cashier Notebook
- Reports of Past
- Graphical Reports
- Security

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We really could count more than 50 percent of these items. However, we knew not so much about them. Hence, each of us did some search:

- To get the general concepts of restaurants in the market,
- To see the currently running software on the market,
- To be more familiar to and sophisticated about the topic.

To explain these terms briefly in the point of view of ROP:

Addition for table: ROP presents two kinds of addition for table. One is the financially approved addition while the other is the normal one. An addition is started by two ways. You can start is by pressing the keyboard buttons typing the waiter number, table number, and the number of people that will use the table as customers. Else, you can start it by just touching the monitor. For this, the user must have the right kind of monitor.

It is started by selecting the "Yeni" tab in the group named "Table" which is daily operation, so the window comes to the screen firstly by clicking on "Gunluk Islemler" tab on main menu. (Appendix B.1 & B.2)

Addition for package: ROP requires the phone number as a search index. If it cannot find the customer whose phone number was given, it displays the customer registration form (Appendix B.3). All data related to the customer has room for itself on this detailed form of ROP.

It is started by selecting the "Yeni" tab in the group named "Table" which is daily operation, so comes to the screen firstly by clicking on "Gunluk Islemler" on main menu**.** (Appendix B.1 & B.2)

Addition for Customer: This addition is generally used in places like clubs. The customer is not dependent on one table, and can spend his money within the enterprise according to his wishes.

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The way to start an addition for a customer: Main Menu “Gunluk Islemler” › “Customer” › “Yeni”. (Appendix B.1 & B.2)

Account: ROP presents four ways to pay the bill: Cash, with credit card, current or with foreign nation money. Also, you can acquire the reports about these operations immediately. By this way, documentation of credit card account or foreign money will not be a laborious issue anymore. Meanwhile, all the current account customers will be tracked by their consumption by giving no way to misunderstandings.

If the customer wants to pay the bill, the operator clicks the “Hesap” (Appendix B.5) button on the “Siparis Giris Ekrani” (Appendix B.4). On this screen, you can see all the products that the customer consumed or bought by their names, amount and unit price. At the most right bottom of the screen, the total debt of customer is displayed.

If the customer wants to pay by credit card, that button is clicked (Appendix B.5) and one of the credit cards is chosen. The credit cards are reserved by the ROP operator in advance. Then the credit card number is entered and “Hesabi Kapat” is clicked to finish the process of paying the bill.

Or, the customer may want it to be included in his current account. In that case, the related button, “Cari Hesap”, is clicked (Appendix B.5). Then, the new input is added to the customer’s current account.

Receipt: To make a receipt, the operator clicks on the “Fatura” button in the “Hesap” window (Appendix B.5). There are 3 kinds of receipts:

Detailed one includes each product the customer paid, while the total one includes just the total debt of the customer, as the name implies. And a third option is the group selection. If it is selected, the documentation of the receipt will include the products group by group in the receipt. After filling the required blanks in the form, “Fatura Yazdir” is clicked and the process is finished.

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Kitchen Control: A new time period starts just after the order of the customer is entered to the system, ROP. The orders are forwarded to the kitchen by means of the specified printers or monitors as soon as the form on "Siparis Giris Ekrani" (Appendix B.4) is filled and completed. And, customer requirements are also sent via these ways by giving no way to misunderstanding.

Reservation: ROP gives the customers to reserve table before they come. Customer name, address, phone number, table number and date are the necessary information to book the table. ROP gives no chance to book the same table on the same time on the same date.

ROP outputs also some informational graphics as reports, the reservation graphics. It gives the density of the reservations in terms of days of month.

Customer Tracking: By giving expenditure limited cards or introduction cards or by just typing the customer name to ROP you can track your customers` consumptions, special dates, addresses, also receipt data, subscriber data and current account processes. You have the ability to document this information on hardcopy by some clicks whenever you want, and then you can dispatch the documents to your customer.

Daily Sale Lists: All the details of a day about the enterprise can be seen via ROP. For example: Orders, Packages, Sales, Rate of vacancy of tables, pay balance, waiter performance, etc.

Cashier Notebook: You can see all money input and expenditure of the enterprise. Waiter salary, current accounts of the other firms that you commerce with them for raw materials. You can see for the current day up to current time, a detailed page of cashier report which gives all information about money: total income from tables, from packages, total income, total discounts, total inclusions, payments -credit card, foreign money, cash-, current account payments and money remaining in the case. (Appendix B.6)

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Reports of past: You can see all the data related with past by comparison.

Addition Reports:

Given a time interval, all those additions are displayed with the specified amount of details: waiter number, number of people, payment type, open-close are the main options to filter the additions. Waiter number; to acquire the additions of the specified waiter, number of people; to obtain the additions of that specified many people, payment type; to get the additions that are paid by cash/credit card/current account/foreign money, open-close; to see the open but not closed additions, or closed additions.

Waiter Sales:

Given a time interval, you can find out which waiter did how much work: how many additions he opened, how many tables he opened, how many people he served, how much money he provided…

Product Sale:

Providing ROP with the required input: date interval and other specializing attributes, it displays a list of products each is attached with the information about how many of it sold, sale price, and sale sum.

Cashier/Sale:

Amount of sale for the products is displayed for each cashbox typing the date interval. By this report, one can investigate which products are better in sale in which desks.

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Endorsement Reports:

--- Summary

Documents of table, package, and the current additions can be obtained individually, also altogether. In the document of summary of endorsement report, days between the required dates come one after another in order. Every day in the list gives information about how many additions closed, how many customers came in, total revenue, total discount made, and total revenue except KDV.

--- Detailed

Data above is seen in much more detailed way, i.e. endorsement of total foreign money, credit card, and cash payment, and current account back payment, remainder of cashier processes…

--- Hourly Endorsement

In the output report, one can find out the mean of the chosen days in between the dates given as input. For example, you can see the endorsement for everyday in a month.

Graphics:

--- Product Sale

Which product has been sold how much? The report in graphics format answers this question visually. Also, if it is specified as input, one can find out the sales of a chosen waiter, or the total amount of products sold in each product group. For example, “drinks” is 10. If the “drinks” is a group of water and coffee, one can say that water and coffee, totally, has been sold 10 units in the date interval given as input. An example for a graphics report is in Appendix B.7.

Actually, we have seen that every report has a graphics version except its text version. So, we can count them as the following:

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- Monthly Distribution
- Group Sales
- Waiter/Endorsement Graphics
- Product Sale Graphics
- Yearly Distribution
- Addition Distribution

Security: By the authorization, jobs to be done by every personal can be assigned and designated. If wanted, magnetic cards can be delivered to personal to make the processes more secure.

This is really a brief summary of ROP, but we also want to point at the hardware used for this automation:

- Desktop Computer
- Mouse + Keyboard
- Color Printer, Receipt Printer (Appendix B.8)
- Handheld (Appendix B.9)

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Comments on ROP:

Firstly, easy manipulations on additions attracted our attentions. Because of the variety of additions, financial management becomes simpler and more traceable. But, since ROP is a huge program, the one that we will develop is not going to be detailed as it.

We liked the “Customer Registration Form” because it provides so many fields, may be too many fields, to get the ample information to make surprises to your customers, to make alerts, to make notifications about discounts and promotions. The graph at this form gives nice information about how often that customer buys from the restaurant. We think that this data can be used to rank the customers and award some of them by some discounts, or some free of charge services, or some promotions.

Also, daily sale lists are important, because they monitor the enterprise from the financial point of view. This data might be mostly used by the administrator of the enterprise who has the authority to do changes.

ROP has too many report options. We don’t think all are being used by the restaurant that runs ROP. Of course, there are some to be important. For example, we think that there is no need for cashier sale reports because the program that we will develop will be big enough for an average restaurant which won’t have more than 1 desk.

There are kinds of data that someone shouldn’t have right to access it. So we need password support to our system that will enable a personal see the special reports, balance, performances of the system while others cannot. User password confirmation meets such a need which is resolved in ROP in both handhelds and desktop computers.

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3rd program

RESTO, Biltek Bilgisayar

http://www.biltekbilgisayar.net/resto/resto.php

Description of the system:

RESTO is a restaurant automation system which suggests a solution to all functions of cafe, restaurant and fast food restaurants [ref n3]. It suggests a quick and safe system so that the company will do more work with less number of staff. In this software, the main features are fast food which means direct sale, restaurant, packet sale and handheld computers. The system can be used with all the features it has or it can be used by the help of some modules that the manager choses. So the system has a flexible structure on the software side. This flexibility is valid on the hardware side also. With the help of magnetic card reader logging into the system will be easier, the system control can be achieved by keyboard-mouse-normal monitor or touch panel monitors can be used instead.

The main menu operations in this system are below, you can see Appendix C.1 and Appendix C.2 for the related screens;

- The user can define a new product or a group of product, such as deserts, drinks…
- The user can state the names and the pictures of the products, s/he can easily chnge those characteristics.
- The prices of the poducts can be defined and changed easily.
- The user can state which kitchen will take the order and which printer in that kitchen will do that.
- The user can set any details about the orders. For example; no salt in the chicken…
- The portion of the meal can be defined, 1, 1.5, ½..
- By the help of handwriting module, any note to the kitchen can be transfered.

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- The user can define the tables into the groups and name them according to the criteria s/he thinks.
- The user can see the status of the tables, reserved or empty, on the monitor. To see the details about the open tables, the user can click to the related table on the monitor.

These operations are the main restaurant operations. On the other hand we can group the other options that the system has into some other parts; customer management, stock management, reporting (executive information system). In addition to that we can mention about the other system modules.

Customer Management Options:

Customer management aims to make the things easier for the customers. This concept has a lot of details. The main customer management properties of the system can be listed below;

- The user can enter the details of the order of the customer. For any order the desired properties of the order can be defined and this information is transferred to the kitchen by the printers.
- The user can make a reduction on the bill of the desired customers, the discount rate can be entered to the system before and the reduction is made automatically.
- The user can make collections according to the customer's way of payment. For example; cash, credit card, Multinet, ticket, Sodexo…Please see Appendix C.3.
- The corresponding foreign currency of the bills can be seen and the customer can be informed.

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Stock Management Options:

- After the entegresion of the stock management module, the user can monitor the condition of the stocks. It can be on the basis of product and its sold quantity, the name of the meal and how many portion it is sold or the remaining quantity of the products. Please see Appendix C.4.
- After the entegresion of the BT accounting module and MySis module the user who has branches can do central stock management.

Reporting Options:

- The user can see the daily, monthly and yearly collection reports.
- According to the kind of tickets the restaurant use the user can see detailed reports including the collection according to those tickets.
- Resto provides a daily report on the number of sold products and their prices. The user can see the past reports and make comparison also. See Appendix C.5.
- Resto shows the condition of the stock in a report format.
- The user can see total sale, the way of collection, cancelled operations reports on the basis of branch, personnel and the cashbox.

Important System Modules:

- “Packet Service Management” module: The restaurant can take orders by telephone and by using this module telephone orders can be managed. The information about the telephone customers can be kept. This can be done by writing by hand the info on the touch panel monitor.
- “Caller ID” module: When a customer rings the phone all the information- name, address, past orders- about him appears on the monitor before answering the phone.

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- "SMS" module: The program sends the daily reports to the cellular phones.
- "On line Access" module: This module is for the companies with too many branches. It provides central management by accessing all the branches.

Comments on RESTO:

The main components of RESTO are like as a guide for us. Like the other restaurant automation programs the basic functions are not different and those options should be a must for our program also. But the "online reservation and ordering" part of our project is missing in this software. They provide telephone order solution but not Internet ordering and reservation. We could not make use of this site on that section. So the customer management part is not enough, if the customers could login the system via Internet and make some personal preferences about the meals, it would be more effective to make them pleased.

The stock management and reporting schemes seem a good starting point for our project, however we should think too much on the organization and decomposition of the reports. Since our project has online reservation and ordering part aour reporting will be more complex and detailed.

In the site of RESTO, we could not find enough information about the handheld computers, their design and their usage by the waiters. We should make use of another sites and programs to get information about the handheld computers and their specific features.

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Description of and comments on the system:

4th program

RESTOMATION

http://www.polar-ltd.com.tr/english/restomation/restomation.htm

Like most of the other restaurant automation software, ‘restomation’ has the functions such as ordering, handling inventory, informing about recipe and cost of meals, reporting and displaying profit and lost statements all of which is shown in the main page of the application.

Analyzing the program deeply, we observed not only some advantages but also the inadequate parts of the system which we will mention below.

1) The main advantage of the program is that it has very well designed user interfaces. On each button there are some figures that explain the function of the button. Also information display design is well. I want to illustrate these by analyzing two of the user interface one of which is the 'sipariş' gui and the other is 'grafik rapor' gui. For ‘sipariş’ please look at appendix D.1.

In this order user interface the user can see all of the orders with a lot of information related to that. This information consists of waiter, table number, order number, date, time and cost related info1. The details of the selected order can be seen by double clicking on it from the upper list on the screen. For ‘grafik rapor’ please look at appendix D.2.

This is an easily understandable graphic. In order to display this page the user first chooses the 'alış-satış' report from the report list. Then this graphic comes to the screen. As it can easily be seen, this graphic shows the amount of sale in every hour period.

2) By analyzing the profit & lost part of the program we gained some idea about the accounting system of the program and what information is kept related to this system.

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This program keeps the total sales, cost and profit in TL, $ and % for each group in the restaurant like drinks and desserts. Although we as the group members think that displaying the information from different perspectives is good for the user, we find this information inadequate for the user since there is not any time information related to this data. By simply looking at the data given on the screen, we cannot predict whether this data belongs to the last year, last month or last two weeks. So we can say that this gui is too general to get proper and deep information about the accounting system.

3) We think that maybe the most important function that we are planning our project to have and this one does not is that there is no specific account for the customers. For example the orders are taken according to the table and order numbers but not according to the customer names or any information related to them (see 'sipariş' gui displayed above). So this program cannot have any customer specific information and functionality. By customer specific functionality, we mean and in fact we are planning to construct in our project, that by keeping customer's data in the database online orders can be done and also the order given by the telephone can be taken easier. Moreover, customer's favorite meals and preferences can be kept and the customers having higher priority (this priority is determined by the restaurant according to sale amount) are given some special awards. So, we can say that the RestoMation Software is lacking of all these functions and we all come to the same result that this automation is made according to the basic requirements and it doesn't have most of the extra features.

The system requirements for RestoMation consist of RestoMation software, Celeron PC, Windows 98 OS, Ink Jet Printer and UPS. Restomation is only compatible with windows 95/98 but not windows NT/XP.

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Program examined for detailed information on "Stock Management"

ALIŞ SATIŞ STOK TAKİP PROGRAMI - TUTKU YAZILIM

http://www.tutku.gen.tr.tc/

We analyzed this software to have deeper information about how the things are going on in the stock and accounting systems. Since the program is not a restaurant automation program some main differences exist but we try to mention the features of the intersection of two programs. We can say that this software is a very detailed and well designed one especially compared to some conman features of restomation.

We will explain the related parts of this software below:

1) *Inventory related data:*

In this part, the basic actions performed are inventory definition, update, deletion and the display of the inventory flow. Let us mention them together with their user interfaces. . For 'inventory definition' please look at appendix D.3.

Any new inventory is introduced to the database from the above interface. After filling the blanks above the new inventory will be in the database. For 'inventory update and deletion' please look at appendix D.4.

In this user interface the user can see the list of all inventories and can make any necessary change on them by filling the blanks on the top related to the selected inventory. Just double clicking on the inventory from the list also works for selection process. After that, 'seçileni düzenle' and 'seçileni sil' buttons will be active and either update or the deletion process can be completed. For 'analyzing the inventories and their flows' please look at appendix D.5.

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As it can be seen from the figure above, by selecting the inventory from the list flow related to the selected item can be seen. We think that all the information related to each inventory is displayed in detail. In the flow list, we can see the cost in each time that this inventory was bought and the sale prices according to the time relation. If we compare this data with the previous one of restomation we can see that the difference is obvious. For each data reporting and obtaining printed hard copy is possible.

2) *Customer related information:*

We think that the most important point to mention is that keeping the customer information in a database. For 'the user interface' please look at appendix D.6.

This is a very detailed and proper interface to have the required information of the customer. Now let us see the resultant list after inserting certain amount of customer information into the database, appendix D.7.

From the interface above, you can see that remaining balances of the customers are kept in three different units as TL, $ and £.We think that the previous automation is an older one since the euro wasn't considered as a unit for accounting system. By clicking on the selected customer more processes about them can be performed such as displaying the performed processes with that user, payment information of the user like payment period and the amount of payment for each period.

3) *Firms inventories to be sold and related data:*

We will not give much detail about this part since it is very similar to customer related information. All processes are same. Similar lists are displayed for firms except that this time payments are not taken by the customers, on the contrary they are given to the firms.

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4) *Cashbox related process:*

Like all other parts of the software, this part is also very well designed and enough for the requirements of the user. In this part, possible processes to be performed are money entry, money exit and flow list. With money entry what they mean is the data of the money to be inserted to the cashbox. It can be either from the customer payment or other incomes. This can be expressed in the user interface and if it is a customer payment inserted money is reduced from the remaining balance of that customer. Contrast is valid for money exit. It can be either a payment to be given to a firm or just other outcomes. It is also expressed in a similar way. Lastly, flow list displays all inserted data as income or outcome according to their times.

5) *Other information:*

In this part we will mention some other functions of the project but we will not explain them in detail. This software can also perform processes of quasi money and bills. Any reporting and hard copy related to bills are possible. The software also displays the exchange rates.

In conclusion, every detail related to stock management and accounting system was considered and requirements have such good solutions in terms of usability and quality of user interfaces. For more detailed information and more gui's for these software you can visit the web sites of the software companies which are available through internet.

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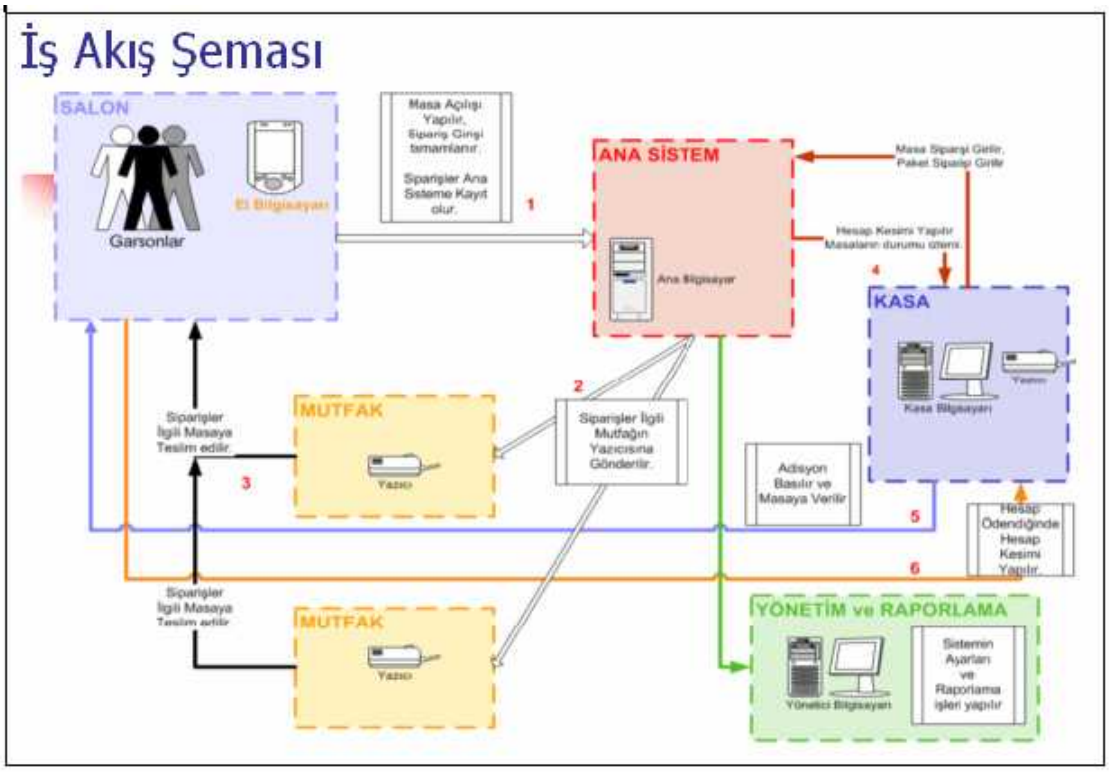
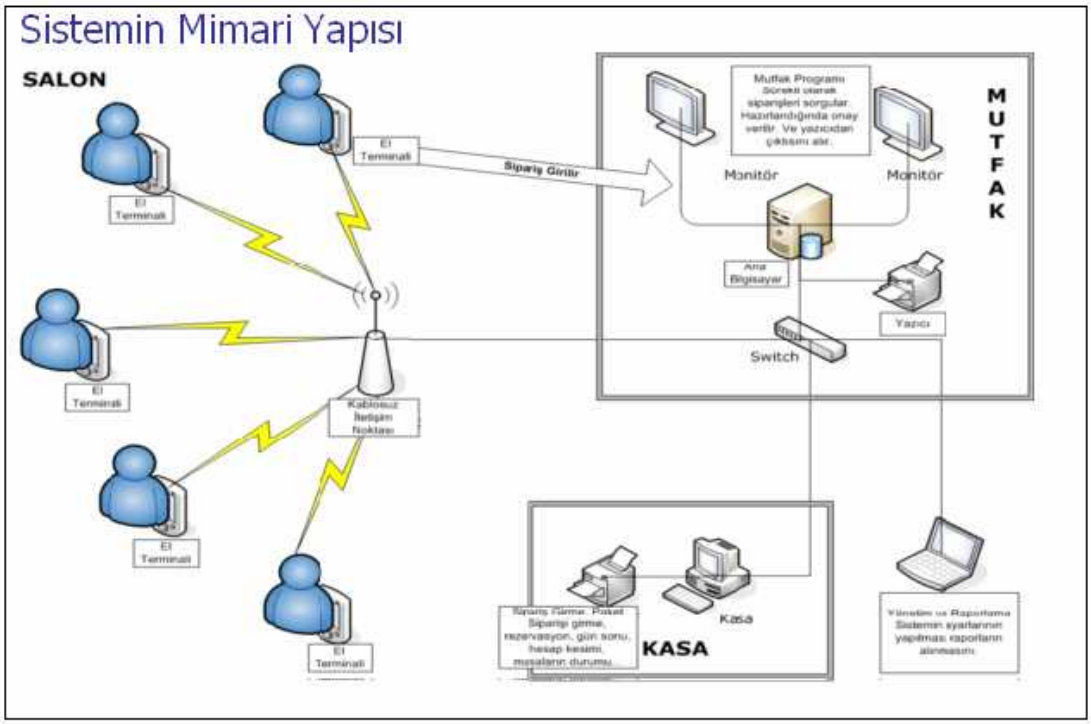
APPENDIX

A.1



A.2



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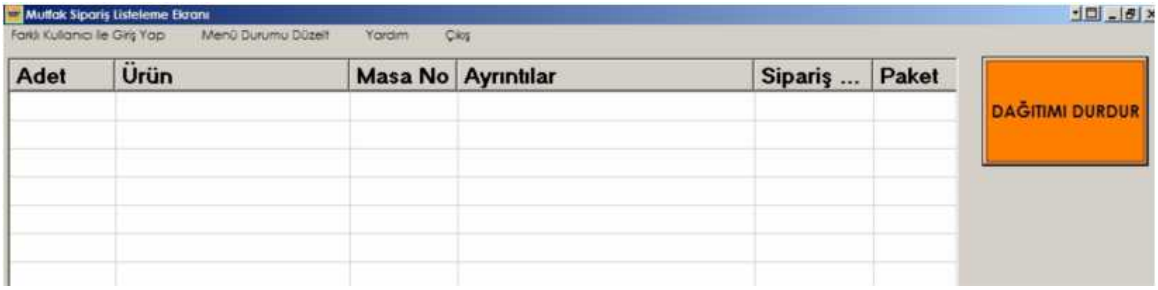
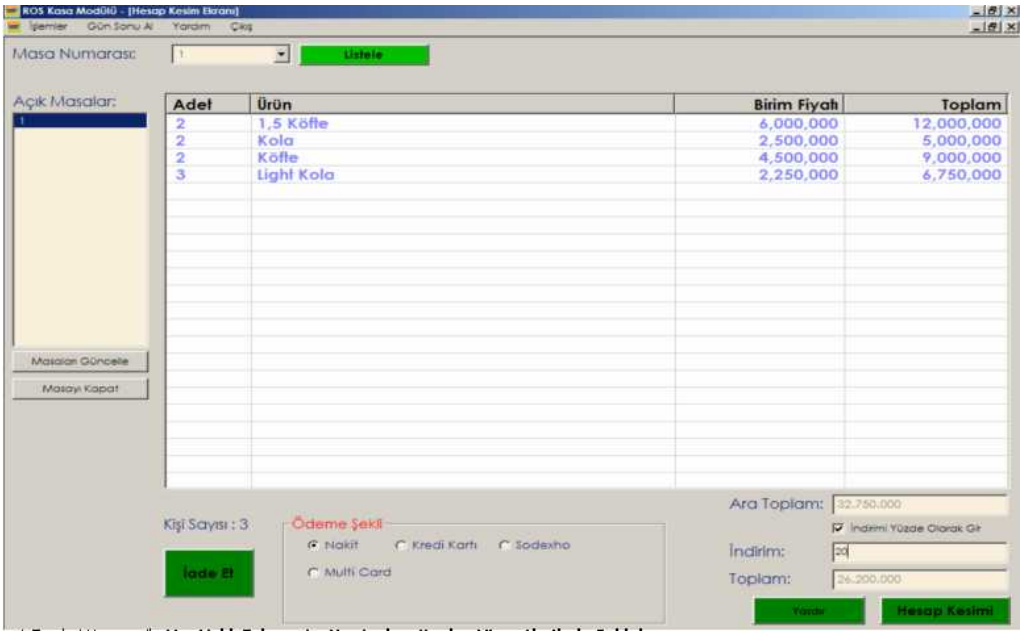
A.3

A.5

A.4



A.6



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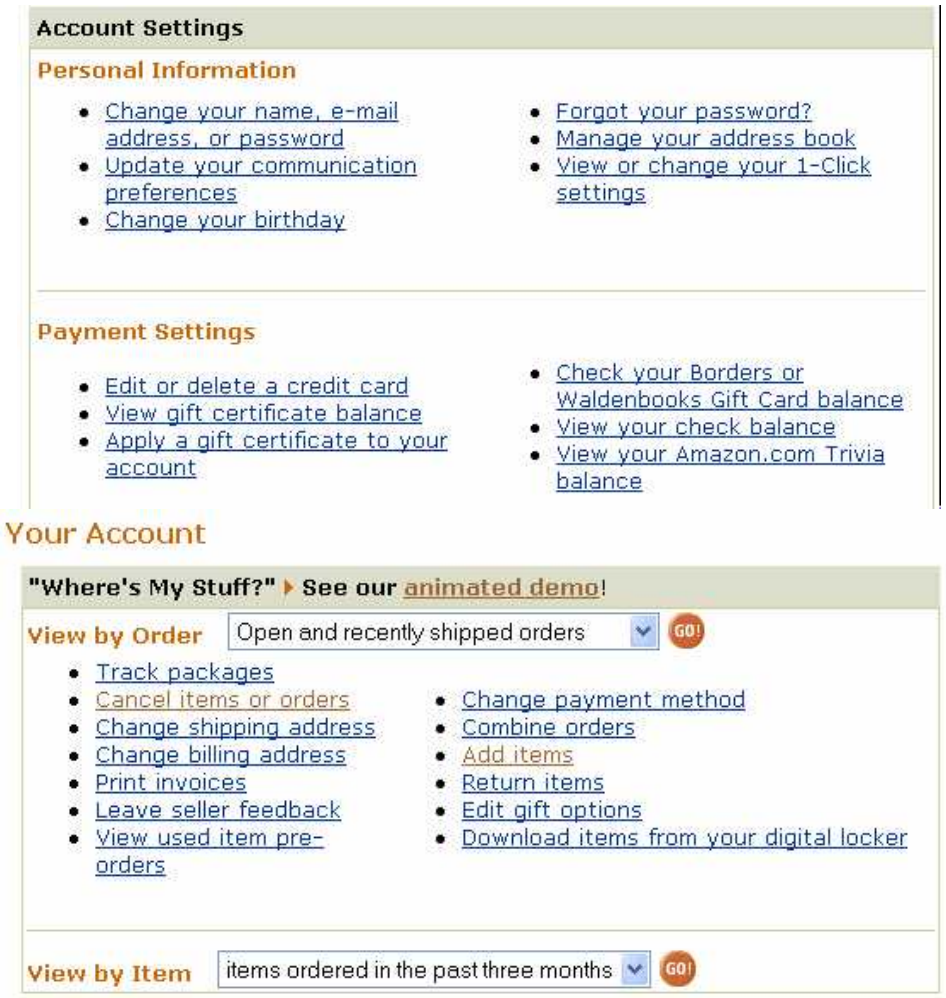
A.7



A.8

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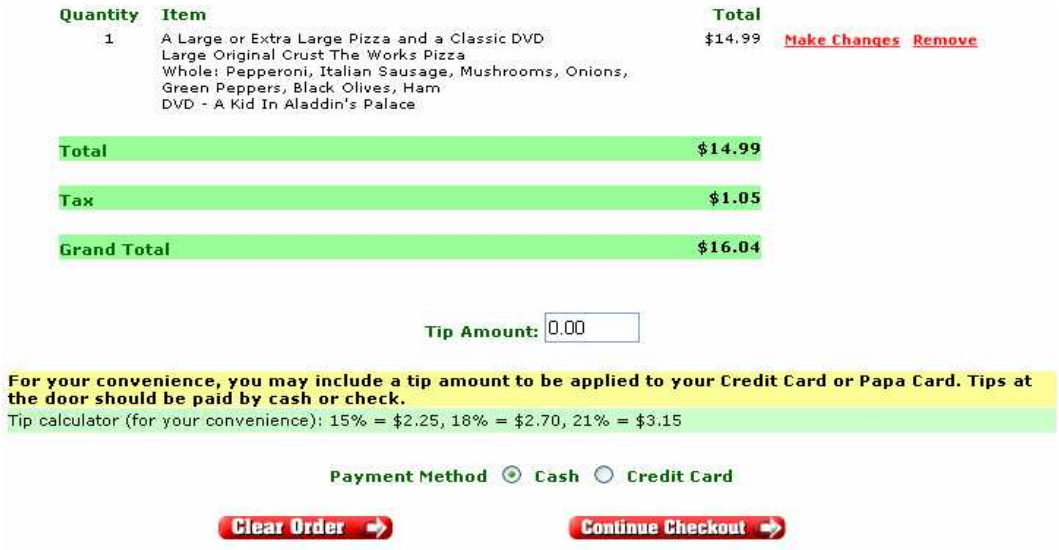
A.9

A.10

A.11



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A.12

Thank You

Your order, 16156557, is complete and has been submitted. An email containing your order total including sales tax and the estimated Delivery/Carryout Time will be sent to: gokcen_n@hotmail.com.

PAPA JOHN'S PIZZA
Better Ingredients. Better Pizza.

Customer:	Pickup From:	Hours
gokcen alay 4500 OHIO RIVER BLVD BELLEVUE, PA 15202-3418 532-776-9383	Papa John's #3020 4500 Ohio River Blvd. Bellevue, PA 15202	11:00 am - 09:30 pm CARRYOUT

10/19/2004 19:54

Quantity	Item	Total
1	A Large or Extra Large Pizza and a Classic DVD Large Original Crust The Works Pizza Whole: Pepperoni, Italian Sausage, Mushrooms, Onions, Green Peppers, Black Olives, Ham DVD - A Kid In Aladdin's Palace	$14.99

Total	$14.99
Tax	$1.05
Grand Total	$16.04
Amount to be paid by Cash	$16.04

If you need to cancel your order, please call the restaurant at (412) 434-7272. You are NOT able to make changes to your order.

A.13

Please bill the amount of $16.04 to the credit card indicated below.

Credit Card Details

Card Type* Select One

Card Number*

Expiration Date* (MMYY) Month Year

Name On Card*

Card Verification Number*

Click here to find the Card Verification Number.

Credit Card Billing Information

Is billing address same as delivery address? (•) Yes ( ) No

Name* gokcen alay

Address Line 1* 4500 OHIO RIVER BLVD

Address Line 2

City* BELLEVUE

State* PA

Zip/Postal Code* 15202

Phone* 532 - 776 - 9383

Continue Checkout

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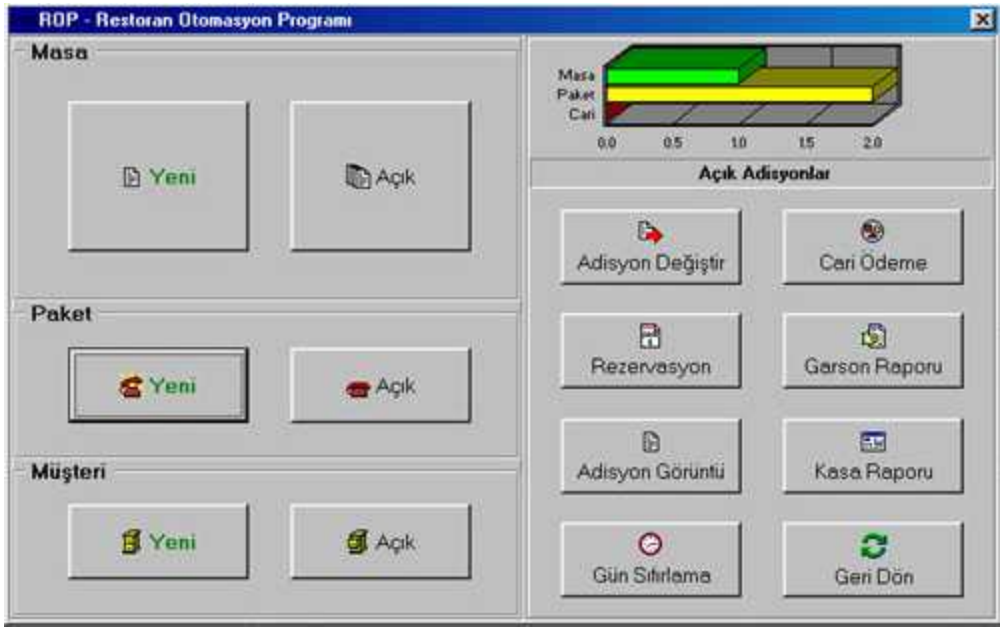
B.1 Main Menu

B.2 “Gunluk Islemler”



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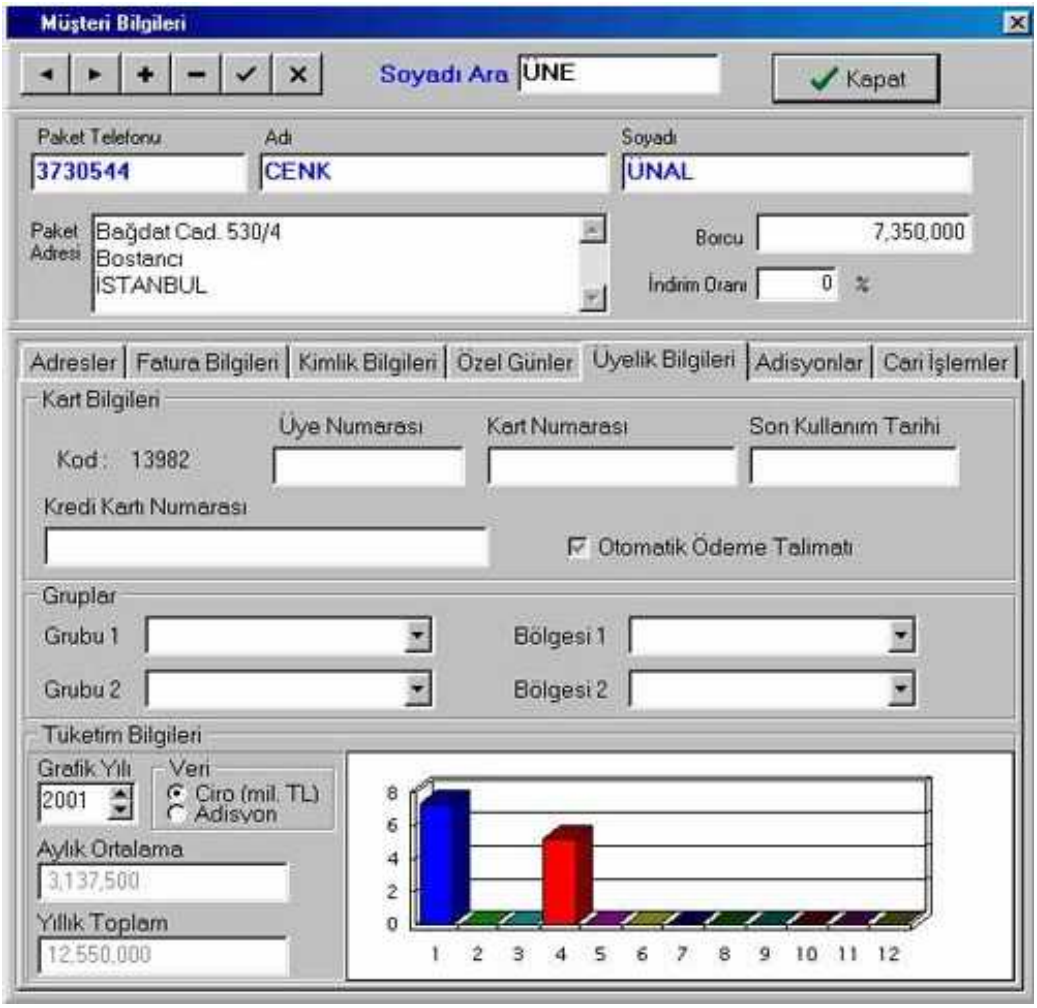
B.3 Customer Registration Form



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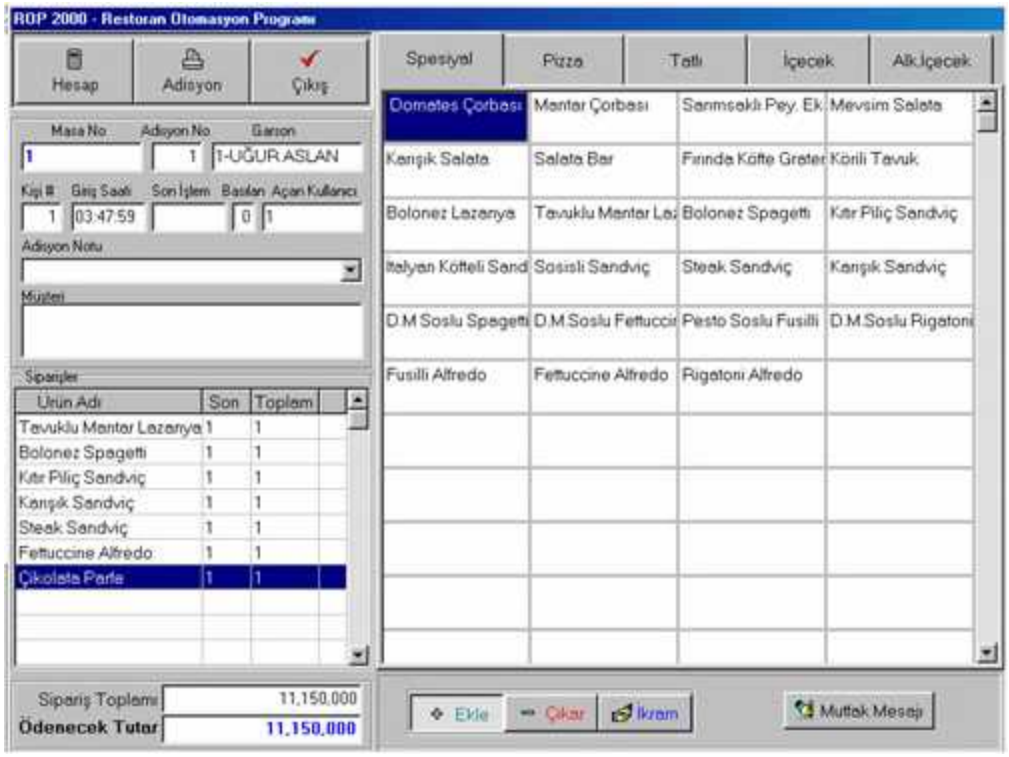
B.4 Order Form ("Siparis Giris Ekrani")



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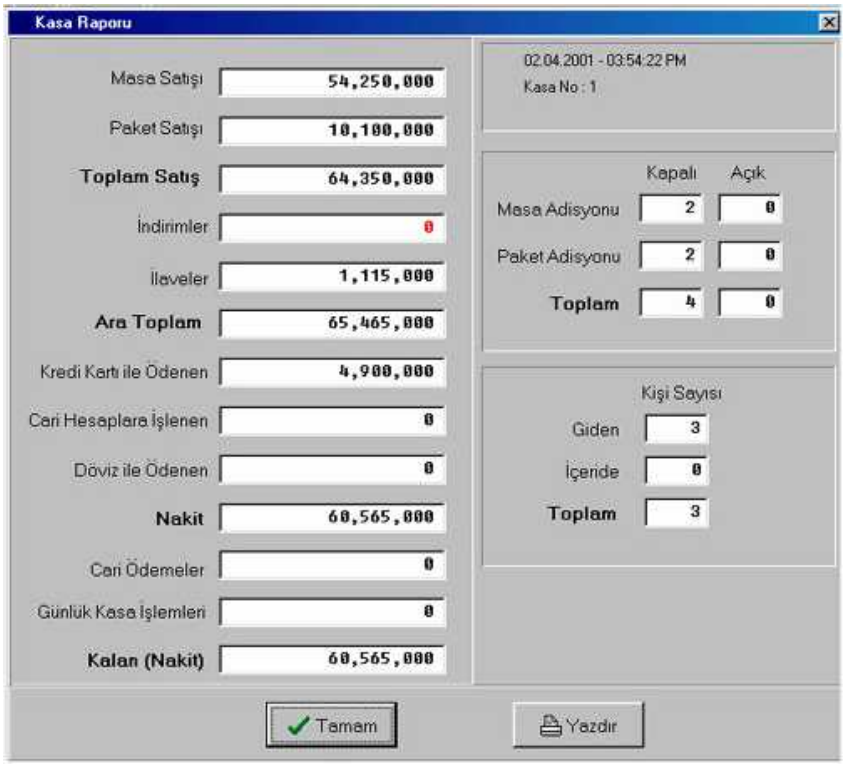
B.5 Account (“Hesap” from Order Form)

B.6 “Kasa Raporu”



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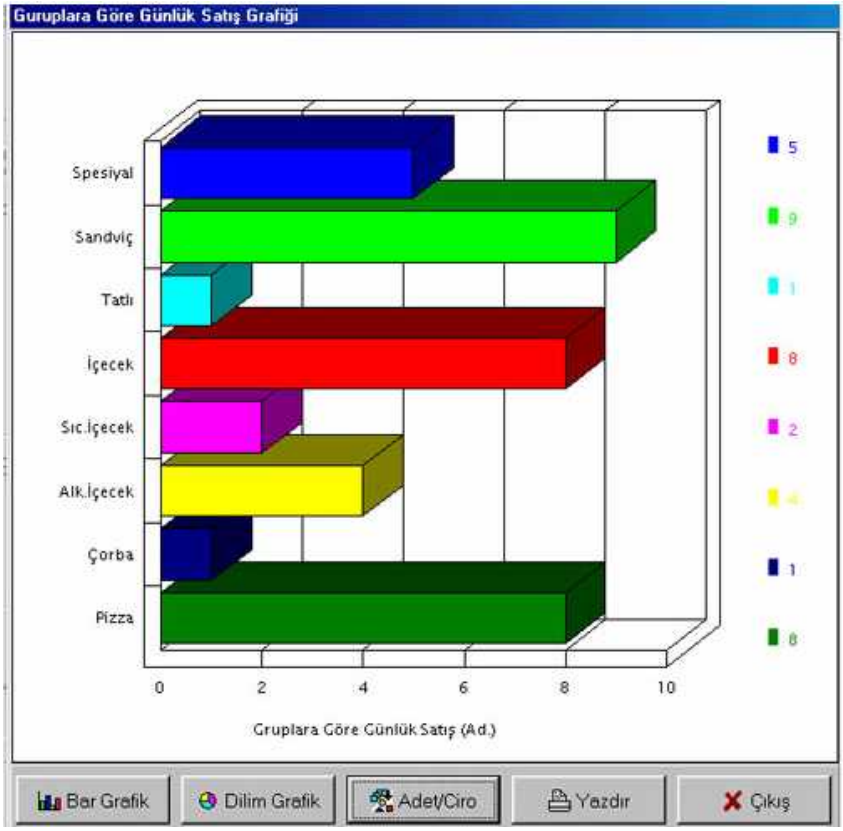
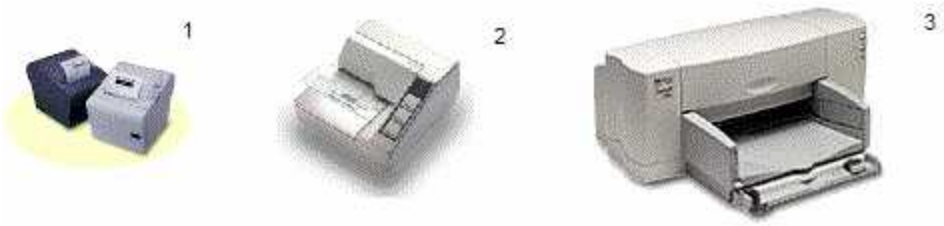
B.7 Graphics



B.8 Printers



1: for printing the additions (thin paper print-out)

2: for printing receipts

3: for printing reports (Color Printer)

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B.9 Handhelds

1: Orderman Don

2: Orderman Leo

3: Pocket PC

B.10 HANDHELD / PDA

We also did some search about handheld for restaurant automation program. To be more specific, by this research we aimed to answer mainly the followings:

- What is handheld, What is PDA
- Which operating systems can a PDA accommodate
- How the communication between desktop computer and handheld takes place

During our search on net, we came across with some terms that we inferred we must learn what they mean:

Handheld: Used in two ways:

1) Any computing device that is small enough to fit in the user's hand, including palm-sized PCs, PDAs, Smartphones, smart pagers, and larger mini-laptops,

2) It is used to refer to Handheld PCs specifically, which are larger than palm-sized PCs and use Windows® CE.

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PDA: Personal digital assistant. It refers to a wide variety of handheld and palm-size PCs, electronic organizers, Smartphones, and pagers.

Palm OS®: The operating system used on Palm™ handhelds and other third-party devices, including Sony, Handspring, Kyocera and more.

Palm, Inc.: Makes the Palm OS and the line of Palm handheld devices and accessories. Palm, Inc. split from its parent company, 3Com, early in 2000.

PalmPilot: Palm, Inc.'s palm-sized device that debuted in 1996. In 1998, Pilot was dropped from the name for legal reasons.

PalmSource: A spinoff of Palm, Inc., PalmSource is the company that develops and licenses the Palm OS.

Platform: Refers to the group of hardware, software, and accessories that revolve around a particular operating system. See operating system.

Pocket PC: Mobile operating system developed by Microsoft®, which runs on third party devices.

Windows® CE: Microsoft's operating system for handheld and mobile devices and the precursor of the Pocket PC platform.

WAP: Wireless Application Protocol: A protocol for transmitting data between servers and clients (usually small wireless devices like mobile phones).

Bluetooth: Technology allowing short-range radio links between mobile devices. Unlike infrared, Bluetooth does not require a clear line of sight to operate properly. Many mobile phones are now Bluetooth-enabled.

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HotSync®: The process and software by which data is synchronized between a Palm OS device and another computer to send and retrieve information (i.e., Contact Information).

Infrared: A wavelength used to transmit data. Many mobile phones and computers have infrared ports, enabling data to be shared between two devices without wires.

There are many palm devices in the market, which are produced by various firms. Basically, we can count the outstanding three operating systems these devices accommodate: Microsoft® Windows CE mostly on Pocket PC devices, Palm OS mostly on Palm® devices and EPOC.

We also investigated the way how these machines - in the palm - communicate with the computer on the desktop of the cashier in the restaurant. Many of the devices perform data exchange through the infrared ports they have. Recently, bluetooh is being popular, which is mostly used in mobile phones as a way of wireless communication. To be more specific, we had to choose an operating system to give detailed information about communication. Hence, we picked Palm OS up:

To start with, it is efficient to give the topic as a whole picture, the big picture:

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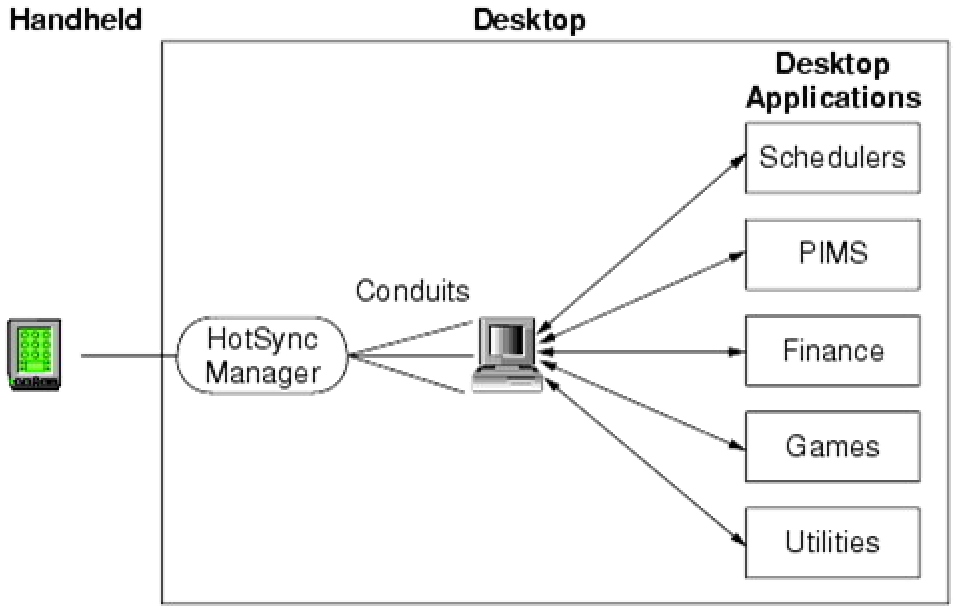

HotSync® Manager is a desktop application that manages communications with the handheld. HotSync Manager uses a communications API, called the Sync Manager API, to handle the actual sending and receiving of bytes to and from the handheld, which makes HotSync Manager and the Sync Manager API independent of the connection type. Typical communication connection types include:

1. direct serial cable connection
2. infrared connection
3. modem connection
4. network connection

Conduits are modules that plug into HotSync Manager, which calls each in turn to read and write data on both the handheld and desktop. You use the Conduit Development Kit to create conduits. Generally, when you develop a handheld application that shares data with a desktop application, you also develop a conduit to synchronize the data between the two.

After this mini orientation about the topic we examine, it is important to point at the usage of handhelds in restaurants.

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Quality of service in a restaurant depends mostly on the personal, specifically the waiters. They must be quick and correct. Correctness is something that gets harder to become when the time is under consideration. Handhelds provide fast communication between the waiter next to the customer and the cook in the kitchen while they provide the customer with accurate information about “What we have and we don`t”. In the point of time, we can stress that an order made from a table by a waiter`s handheld is immediately conveyed to the personal in the kitchen with correct accessories which are defined by the customer like “acılı, soslu, yağlı, az ekmekli”.

C.1

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C.2

C.3

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C.4

Tarih : 23.9.2004

Ürünler | Reçete | Reality

Ürün Adı	Miktar	M.T.	TUTAR	B.F.T.
DANA ETİ	5,468	Kilo	54.680,000	YTL
KUZU ETİ	10	Kilo	90.000,000	YTL
ÇİĞ PİLİÇ	7,758	Kilo	38.790,000	YTL
SU	9	Adet	4.500,000	YTL
COCA COLA	9	Adet	6.750,000	YTL
FANTA	9	Adet	6.750,000	YTL
COLA TURKA	9	Adet	6.750,000	YTL
B. AYRAN	9	Adet	9.000,000	YTL
K. AYRAN	9	Adet	4.500,000	YTL
GAZOZ	10	Adet	7.500,000	YTL
SODA	9	Adet	4.500,000	YTL
MEYVE SUYU	9	Adet	6.750,000	YTL
HALKA TATLI	10	Adet	3.000,000	YTL

243.470,000

C.5

Tarih : 23.9.2004

Ürünler | Reçete | Realty

Urun Adı	Adet	Tutar
Ayran (Büyük)	24	18.000,000
Ayran (Küçük)	33	16.500,000
Bazlama	2	1.500,000
Cola	13	13.000,000
Et Döner (100)	10	35.000,000
Et Döner (50)	11	19.250,000
Et Döner (70)	12	30.000,000
Fanta	11	11.000,000
Halka Tatlı	12	3.000,000
İnegöl Köfte (1,5)	1	3.000,000
İnegöl Köfte (Tam)	2	4.000,000
Kızarmış Pilic (1/2)	15	37.500,000
Kızarmış Pilic (Por)	2	6.000,000
Kızarmış Pilic (Tam)	1	5.000,000
Lavaş	22	4.400,000
Meyve Suyu	1	1.000,000
Pide	14	4.200,000
Soda	1	300,000
Su	32	12.800,000
Tavuk Döner (100)	11	22.000,000
Tavuk Döner (50)	13	13.000,000
Tavuk Döner (70)	14	21.000,000

281.450,000

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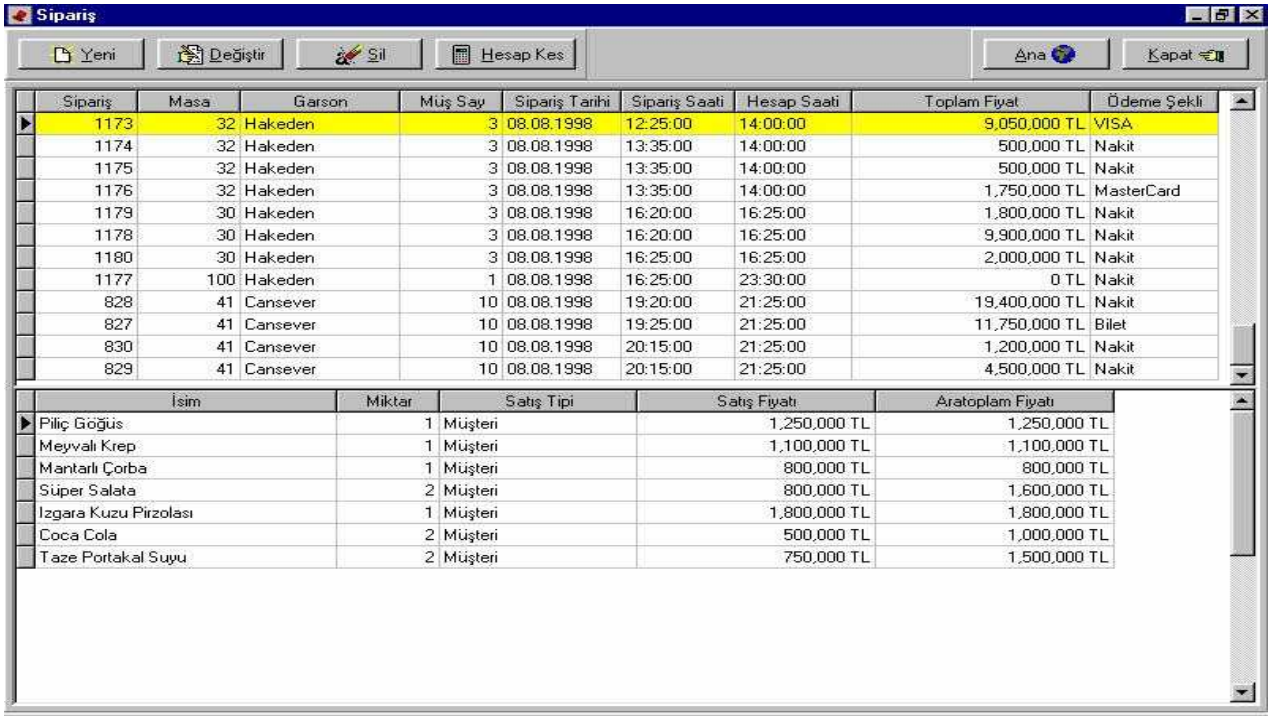
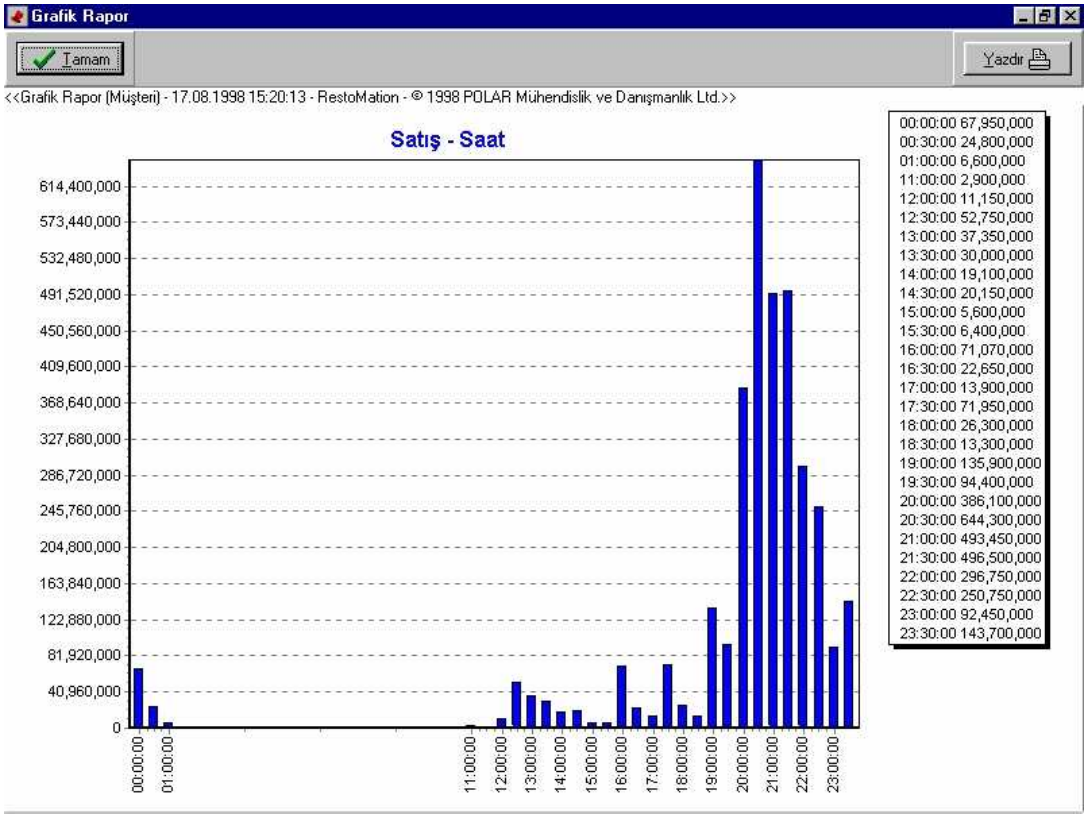
D.1



Sipariş	Masa	Garson	Müş Say	Sipariş Tarihi	Sipariş Saati	Hesap Saati	Toplam Fiyat	Ödeme Şekli
1173	32	Hakeden	3	08.08.1998	12:25:00	14:00:00	9,050,000 TL	VISA
1174	32	Hakeden	3	08.08.1998	13:35:00	14:00:00	500,000 TL	Nakit
1175	32	Hakeden	3	08.08.1998	13:35:00	14:00:00	500,000 TL	Nakit
1176	32	Hakeden	3	08.08.1998	13:35:00	14:00:00	1,750,000 TL	MasterCard
1179	30	Hakeden	3	08.08.1998	16:20:00	16:25:00	1,800,000 TL	Nakit
1178	30	Hakeden	3	08.08.1998	16:20:00	16:25:00	9,900,000 TL	Nakit
1180	30	Hakeden	3	08.08.1998	16:25:00	16:25:00	2,000,000 TL	Nakit
1177	100	Hakeden	1	08.08.1998	16:25:00	23:30:00	0 TL	Nakit
828	41	Cansever	10	08.08.1998	19:20:00	21:25:00	19,400,000 TL	Nakit
827	41	Cansever	10	08.08.1998	19:25:00	21:25:00	11,750,000 TL	Bilet
830	41	Cansever	10	08.08.1998	20:15:00	21:25:00	1,200,000 TL	Nakit
829	41	Cansever	10	08.08.1998	20:15:00	21:25:00	4,500,000 TL	Nakit

İsim	Miktar	Satış Tipi	Satış Fiyatı	Aratoplam Fiyatı
Piliç Göğüs	1	Müşteri	1,250,000 TL	1,250,000 TL
Meyvalı Krep	1	Müşteri	1,100,000 TL	1,100,000 TL
Mantarlı Çorba	1	Müşteri	800,000 TL	800,000 TL
Süper Salata	2	Müşteri	800,000 TL	1,600,000 TL
Izgara Kuzu Pirzolası	1	Müşteri	1,800,000 TL	1,800,000 TL
Coca Cola	2	Müşteri	500,000 TL	1,000,000 TL
Taze Portakal Suyu	2	Müşteri	750,000 TL	1,500,000 TL

D.2



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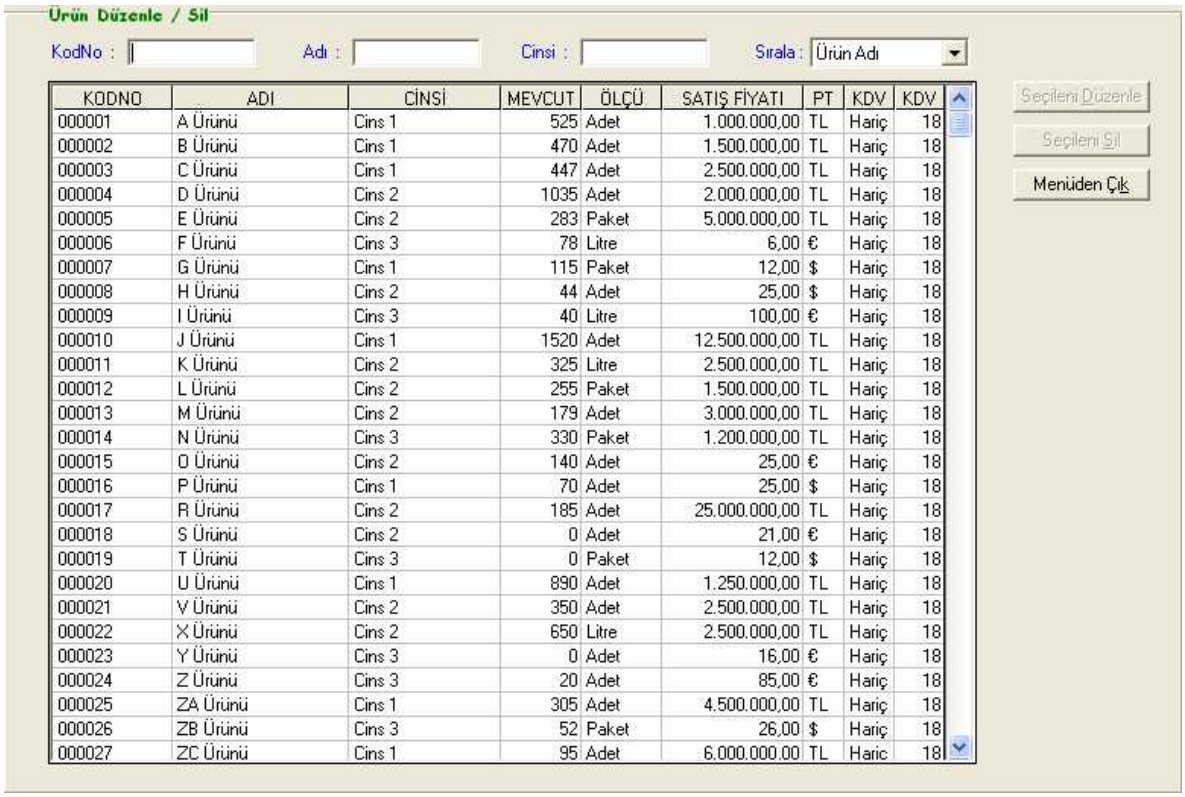
D.3

D.4



KODNO	ADI	CİNSİ	MEVCUT	ÖLÇÜ	SATIŞ FİYATI	PT	KDV	KDV
000001	A Ürünü	Cins 1	525	Adet	1.000.000,00	TL	Hariç	18
000002	B Ürünü	Cins 1	470	Adet	1.500.000,00	TL	Hariç	18
000003	C Ürünü	Cins 1	447	Adet	2.500.000,00	TL	Hariç	18
000004	D Ürünü	Cins 2	1035	Adet	2.000.000,00	TL	Hariç	18
000005	E Ürünü	Cins 2	283	Paket	5.000.000,00	TL	Hariç	18
000006	F Ürünü	Cins 3	78	Litre	6,00	€	Hariç	18
000007	G Ürünü	Cins 1	115	Paket	12,00	$	Hariç	18
000008	H Ürünü	Cins 2	44	Adet	25,00	$	Hariç	18
000009	I Ürünü	Cins 3	40	Litre	100,00	€	Hariç	18
000010	J Ürünü	Cins 1	1520	Adet	12.500.000,00	TL	Hariç	18
000011	K Ürünü	Cins 2	325	Litre	2.500.000,00	TL	Hariç	18
000012	L Ürünü	Cins 2	255	Paket	1.500.000,00	TL	Hariç	18
000013	M Ürünü	Cins 2	179	Adet	3.000.000,00	TL	Hariç	18
000014	N Ürünü	Cins 3	330	Paket	1.200.000,00	TL	Hariç	18
000015	O Ürünü	Cins 2	140	Adet	25,00	€	Hariç	18
000016	P Ürünü	Cins 1	70	Adet	25,00	$	Hariç	18
000017	R Ürünü	Cins 2	185	Adet	25.000.000,00	TL	Hariç	18
000018	S Ürünü	Cins 2	0	Adet	21,00	€	Hariç	18
000019	T Ürünü	Cins 3	0	Paket	12,00	$	Hariç	18
000020	U Ürünü	Cins 1	890	Adet	1.250.000,00	TL	Hariç	18
000021	V Ürünü	Cins 2	350	Adet	2.500.000,00	TL	Hariç	18
000022	X Ürünü	Cins 2	650	Litre	2.500.000,00	TL	Hariç	18
000023	Y Ürünü	Cins 3	0	Adet	16,00	€	Hariç	18
000024	Z Ürünü	Cins 3	20	Adet	85,00	€	Hariç	18
000025	ZA Ürünü	Cins 1	305	Adet	4.500.000,00	TL	Hariç	18
000026	ZB Ürünü	Cins 3	52	Paket	26,00	$	Hariç	18
000027	ZC Ürünü	Cins 1	95	Adet	6.000.000,00	TL	Hariç	18

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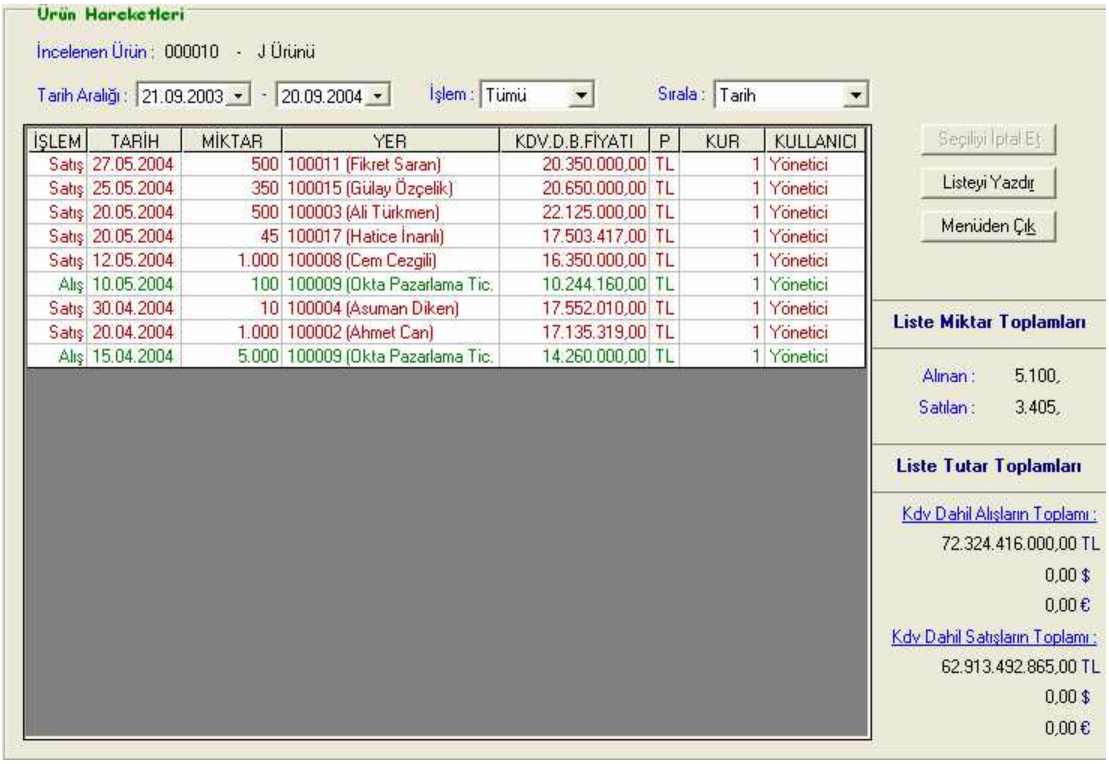
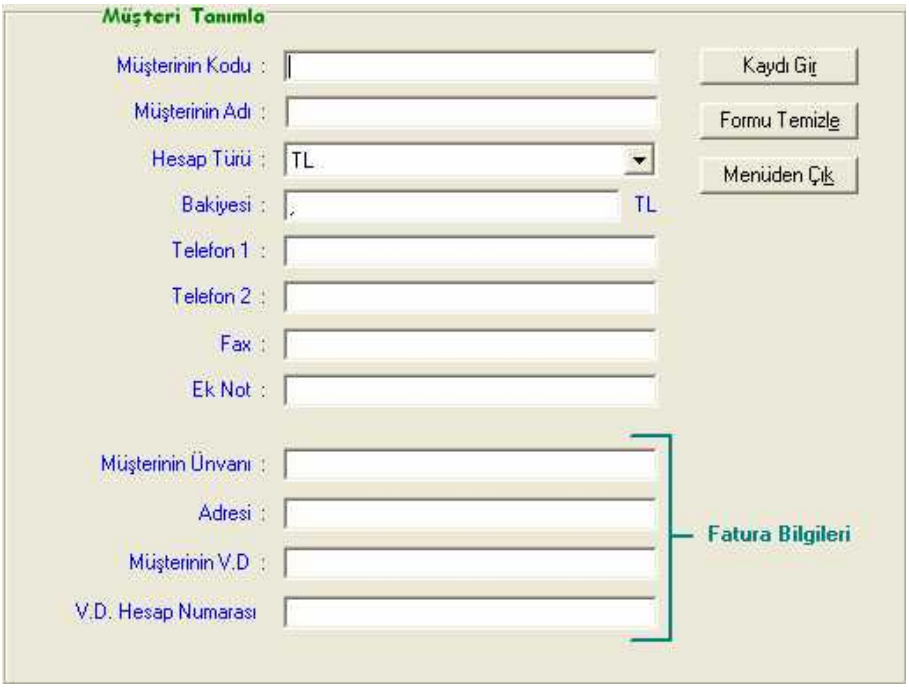
D.5



D.6



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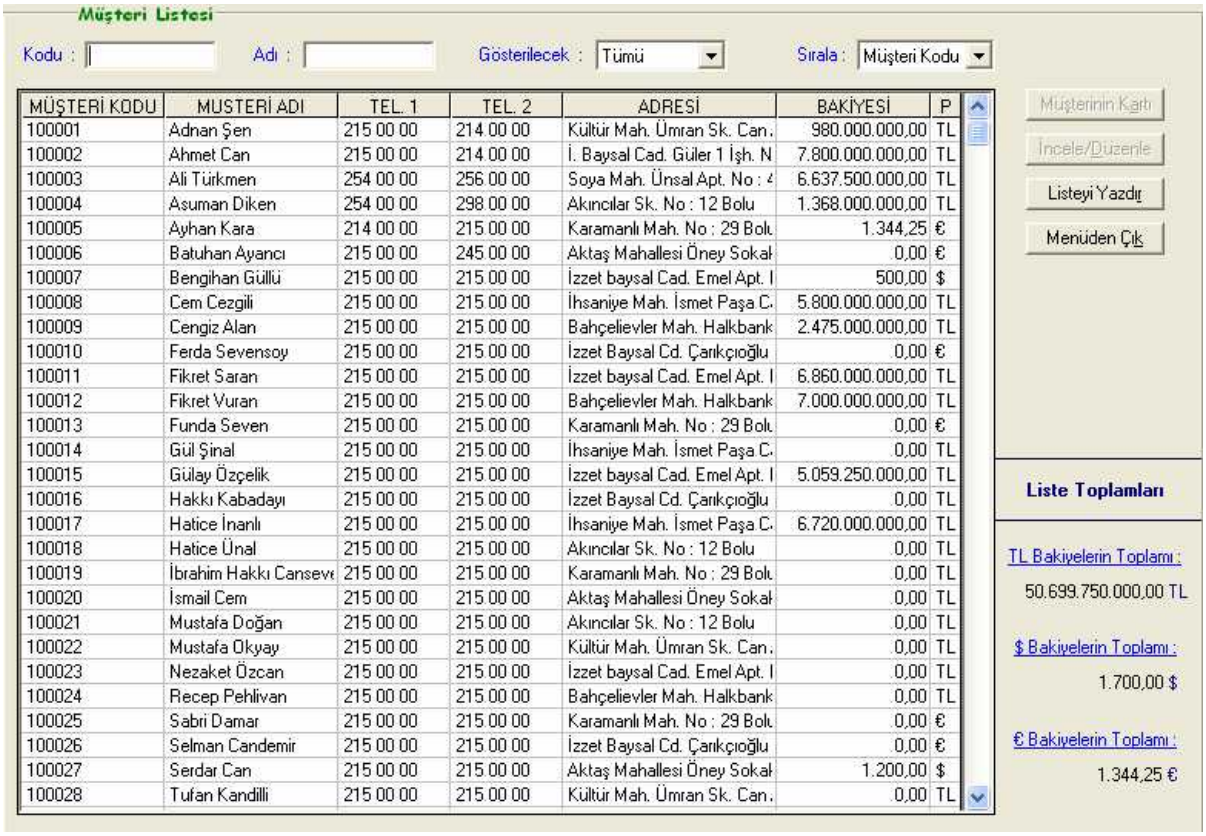
D.7



MÜŞTERİ KODU	MUSTERİ ADI	TEL. 1	TEL. 2	ADRESİ	BAKİYESİ	P
100001	Adnan Şen	215 00 00	214 00 00	Kültür Mah. Ümran Sk. Can.	980.000.000,00	TL
100002	Ahmet Can	215 00 00	214 00 00	İ. Baysal Cad. Güler 1 İşh. N	7.800.000.000,00	TL
100003	Ali Türkmen	254 00 00	256 00 00	Soya Mah. Ünsal Apt. No : 4	6.637.500.000,00	TL
100004	Asuman Diken	254 00 00	298 00 00	Akıncılar Sk. No : 12 Bolu	1.368.000.000,00	TL
100005	Ayhan Kara	214 00 00	215 00 00	Karamanlı Mah. No : 29 Bolu	1.344,25	€
100006	Batuhan Ayancı	215 00 00	245 00 00	Aktaş Mahallesi Öney Sokak	0,00	€
100007	Bengihan Güllü	215 00 00	215 00 00	İzzet baysal Cad. Emel Apt. I	500,00	$
100008	Cem Cezgili	215 00 00	215 00 00	İhsaniye Mah. İsmet Paşa C.	5.800.000.000,00	TL
100009	Cengiz Alan	215 00 00	215 00 00	Bahçelievler Mah. Halkbank	2.475.000.000,00	TL
100010	Ferda Sevensoy	215 00 00	215 00 00	İzzet Baysal Cd. Çarıkçıoğlu	0,00	€
100011	Fikret Saran	215 00 00	215 00 00	İzzet baysal Cad. Emel Apt. I	6.860.000.000,00	TL
100012	Fikret Vuran	215 00 00	215 00 00	Bahçelievler Mah. Halkbank	7.000.000.000,00	TL
100013	Funda Seven	215 00 00	215 00 00	Karamanlı Mah. No : 29 Bolu	0,00	€
100014	Gül Şinal	215 00 00	215 00 00	İhsaniye Mah. İsmet Paşa C.	0,00	TL
100015	Gülay Özçelik	215 00 00	215 00 00	İzzet baysal Cad. Emel Apt. I	5.059.250.000,00	TL
100016	Hakkı Kabadayı	215 00 00	215 00 00	İzzet Baysal Cd. Çarıkçıoğlu	0,00	TL
100017	Hatice İnanlı	215 00 00	215 00 00	İhsaniye Mah. İsmet Paşa C.	6.720.000.000,00	TL
100018	Hatice Ünal	215 00 00	215 00 00	Akıncılar Sk. No : 12 Bolu	0,00	TL
100019	İbrahim Hakkı Cansev	215 00 00	215 00 00	Karamanlı Mah. No : 29 Bolu	0,00	TL
100020	İsmail Cem	215 00 00	215 00 00	Aktaş Mahallesi Öney Sokak	0,00	TL
100021	Mustafa Doğan	215 00 00	215 00 00	Akıncılar Sk. No : 12 Bolu	0,00	TL
100022	Mustafa Okyay	215 00 00	215 00 00	Kültür Mah. Ümran Sk. Can.	0,00	TL
100023	Nezaket Özcan	215 00 00	215 00 00	İzzet baysal Cad. Emel Apt. I	0,00	TL
100024	Recep Pehlivan	215 00 00	215 00 00	Bahçelievler Mah. Halkbank	0,00	TL
100025	Sabri Damar	215 00 00	215 00 00	Karamanlı Mah. No : 29 Bolu	0,00	€
100026	Selman Candemir	215 00 00	215 00 00	İzzet Baysal Cd. Çarıkçıoğlu	0,00	€
100027	Serdar Can	215 00 00	215 00 00	Aktaş Mahallesi Öney Sokak	1.200,00	$
100028	Tufan Kandilli	215 00 00	215 00 00	Kültür Mah. Ümran Sk. Can.	0,00	TL