**The 9bis Order Assistant**

1. **Introduction**
   1. The 9bis Order Assistant (from now on will be called "the system") is a software application to assist managing the reservations and the orders of the restaurant 9bis.
   2. After a sit-down with 9bis manager we have concluded that the users of the system would like a system that helps them satisfy the following objectives:
      1. Reduce effort, frustration and time wasted in getting food orders by telephone.
      2. Reduce the waste of money on buying groceries and preparing food in larger amounts than needed. Such savings will assist both 9bis restaurant and the tech companies whose employees visit the restaurant.
      3. Allow HR employees of tech companies to fill in information and receive reports effortlessly.
      4. Produce daily and monthly reports regarding the restaurant customers with ease.
      5. Increase effectiveness of the work day for employees of the restaurants and the tech companies.
2. **Overall Description**
   1. The system shall provide a graphical user interface (GUI) as a part of the user's working desktop/ smartphone, which will be used for sending orders/ seat reservations and receiving them.
   2. Changes in the users that can order food using the system are made by administrators or HR employees of tech companies. Changes in the tech companies that can order using the system is made by administrators only.
   3. The HR employees are also responsible for inserting and removing VIP users and regular users to and from the system.
   4. Information about reservations and food orders is accessible via the system.
3. **Functional Requirements**
   1. Making a food order or a reservation
      1. A person making an order or a reservation (henceforth the Initiator) will enter information into the system about the desired order or reservation such as but not limited to his personal information, whether it is a food order or a reservation request, the date or dates the reservation or order refers to, payment method (credit, cash or payment via a tech company) and the address in case of an order.
         1. The system shall provide defaults for missing elements.
      2. When the Initiator instructs the system to order food or save a seat, the system shall check whether it has an available seat for the Initiator (in case of a reservation) or can it supply the ordered food.
         1. In case of a reservation- if there are no seats available at the time requested, the system shall suggest:
4. To reserve the closest time with an available seat.
5. To abandon the seat reservation.
   * + 1. In case of a food order- if the requested dish is not available the system will notify the Initiator and suggest:
6. To order a different dish from the available ones.
7. To abandon the food order.
   * 1. If the user's request can be satisfied, the system shall attempt to authorize the payment.
        1. In case the payment was made by a credit card – the system will wait for authorization from the credit card company.
           1. In case such an authorization cannot be reached – a message will be provided.
        2. In case the payment was made via a tech company – the system will confirm that the Initiator is indeed a tech company employee.
           1. In case such a confirmation cannot be reached – an appropriate message will be displayed.
     2. If the user payment method was confirmed the system shall display an appropriate message to the Initiator, the restaurant and the tech company (in case this is the selected payment method).
        1. The wording of the message shall depend on the recipient is:
8. The Initiator (which will receive a confirmation message).
9. The tech company (which will receive a bill for the employee's order or reservation).
10. The restaurant (which will be informed about the order or reservation).
    * 1. In addition to supplying a message to the parties mentioned before, the system shall update the restaurant's orders and reservations database as well as the tech company's database (if the payment is done via tech company).
    1. Canceling a Reservation or a Food Order
       1. Only the Initiator can cancel an existing order or reservation.
       2. When an Initiator instructs the system to cancel an order that is yet to be sent to the restaurant, the system shall abort the ordering or reservation process.
       3. If the order or reservation was already sent to the restaurant the system shall behave as in 3.2.2. and in addition will do the following:
          1. Display notification message to the restaurant, the tech company (if relevant) and to the Initiator informing of the cancelation.
          2. Update the databases mentioned in 3.1.5.
    2. Modifying a Reservation or a Food Order
       1. Only the Initiator can modify an existing order or reservation.
       2. When an Initiator instructs the system to modify an order or a reservation that is yet to be sent to the restaurant, the system shall abort the ordering or reservation process and create a new reservation or order process as explained in 3.1.1.
       3. If the order or reservation was already sent to the restaurant the system shall behave as in 3.2.2. (cancel the current process) and return to 3.1.
    3. Making a food order or a reservation of a VIP customer
       1. A person making a VIP order or a VIP reservation (henceforth the VIP customer) will enter information into the system about the desired VIP order or reservation such as but not limited to his personal information, number of guests, whether it is a food order or a reservation request, the date or dates the reservation or order refers to, payment method (credit, cash or payment via a tech company) and the address in case of an order.
       2. When the VIP customer instructs the system to create a VIP order or reservation, the system shall first check whether the customer is in the VIP customers list.
          1. In case the customer attempting to create a VIP order or reservation is not in the VIP list, an appropriate message will be sent to the customer and to the tech company.
       3. If the customer is indeed a VIP customer, the system will behave as in 3.1.1. with a respective number of orders (all listed to the VIP customer).
    4. Modifying/Canceling a food order or a reservation of a VIP customer
       1. Only a VIP customer can modify an existing VIP order or reservation. In case of a VIP order or reservation cancellation the system shall behave as in 3.2. for each of the reservation and orders listed for the VIP customer. In case of a modification to a VIP customer order or reservation, the system shall behave as in 3.3. for each of the reservation and orders listed for the VIP customer.
    5. Displaying a Host Waiter Report and Allowing Host Waiter Seat Allocations
       1. If the system identifies a user that is the host waiter of the restaurant it displays an updated daily report of the expected reservations of the day.
       2. A host waiter can add walk ins manually. The host waiter enters the information about the non-registered guests into the system, including but not limited to number of guests and the rest of the information mentioned in 3.1.1.
          1. If there is not enough room in the restaurant or there are not enough groceries to supply food for the non-registered customers, the system notifies the host waiter and does not register the orders.
          2. If the non-registered customers' orders can be supplied, the system registers the orders (behaves as in 3.1.3.).
    6. Sending Monthly Reports Automatically
       1. On the first day of each month the system will generate a report specifying data about the customers that attended the restaurants or ordered food from the restaurant in the last month. The data will be constructed from the saved information in the databases and will be sent to the HR representatives and the system administrators.
    7. Generating Reports On Demand
       1. A system administrator that wants to generate a report (henceforth the generator) will enter information into the system about the desired report, such as but not limited to the type of report, the period which the report refers to.
          1. The system displays the desired report constructed from the databases.
    8. Adding/Removing users to/ from the System
       1. Only an HR representative can add or remove regular and VIP users to/from the system.
       2. When the HR representative instructs the system to add or remove a user the system shall verify that this action can be completed.
          1. If the action cannot be completed (for example – trying to add a user that already exists or trying to delete a user that doesn't exist in the system), the system will notify the HR representative
          2. If the action can be completed, the system will update the databases, notify the HR representative and notify the system administrators.
    9. Performing Changes to the System Features
       1. Only an administrator can change the system features, such as but not limited to changing the time when an order or a reservation can be made.
       2. When an administrator changes one of the possible system features, the system will change this feature starting from the next day. All users will be informed of the change via a notification of the system.
    10. Adding and Removing HR Representatives
        1. Only a system administrator can add or remove a HR representative.
        2. When an administrator adds or removes a HR representative, the change takes effect immediately. In addition, the databases are changed accordingly and a notification is sent to the respective HR representative.
11. **Non-Functional Requirements** 
    1. Performance
       1. If it is possible to deliver an order or allocating seats for a reservation, the system shall confirm the reservation or order in a fixed time that will not be dependent on the number of users or orders in the system.
       2. The system shall load as quickly as comparable reservation tools on whatever environment it is running in.
    2. Portability
       1. The system will be implemented on a platform that allows easy re-hosting on different hardware and operating systems. The system is expected to run properly both on desktop computers and smartphones.
    3. Parallelism
       1. The system's databases should allow multiple users to access and modify them at the same time, to achieve high performance.
    4. Security
       1. As a system that stores personal information about users, users' data should be kept encrypted.
       2. All communication with credit card companies should be done in a secured fashion according to industry's standards.
12. **Future Requirements**
    1. Unavailable dishes will be displayed in the system as greyed out to begin with, unlike the current situation where a user only knows a dish is not available after selecting it.
    2. The system will support multiple user orders, that way a user can order food for another user (given prior authorization to do it).
    3. The system will support specific seat selection – that way a person can select his favorite table of the restaurant to seat next to.
    4. The system will always indicate how many people can the host waiter seat, unlike the current state where it can only indicate there are not enough groceries to supply a walk-in order.
    5. The system will support payment with cryptocurrency (Bitcoin, Ethereum etc.)