Picnics Plus

Designed By:
Mark Jourdan
Katie Karp
William Masek

IS 315
March 17, 2003

Picnics Plus: System Design

June 23, 2004

Requirements & Flowcharts

System Requirements & Process Flowcharts

Context Diagram, Level 1 & 0

Analysis & Design

ER Diagram

CRUD

Data Dictionary

Input/Output

Architectural & Database Overview

Picnics Plus

System Requirements

1. Statement of the problem and project objectives

1.1 Description of current state–

Picnics Plus is having trouble during busy periods getting back to its customers with price quotes and they get frustrated and go else where losing customers. They are looking to expand into popular attractions and summertime events. Their staff is fine at most times however they depend on college students being there. The company has only one computer that Ms. Hennessey uses. Everything else is done by paperwork and by hand with a lot of copies made. The company also only orders one parties worth of food at a time and doesn't order multiple parties worth at once.

Corporate demand is increasing rapidly and the current system needs adjustments if the company wants to expand. Currently, when ever a customer calls in an order the person who receives that order writes all the information on a party sheet. From there a quote is produced and sent back to the customer. If the customer accepts the quote it goes on to the ordering stage where it is passed onto the three people in charge of the kitchen. These three complete the order after the secretary confirms the quote. The kitchen staff carries on the order and runs the picnic. After the picnic the Accounting Manager sends off the bill and receives payment.

1.2 Description of problem–

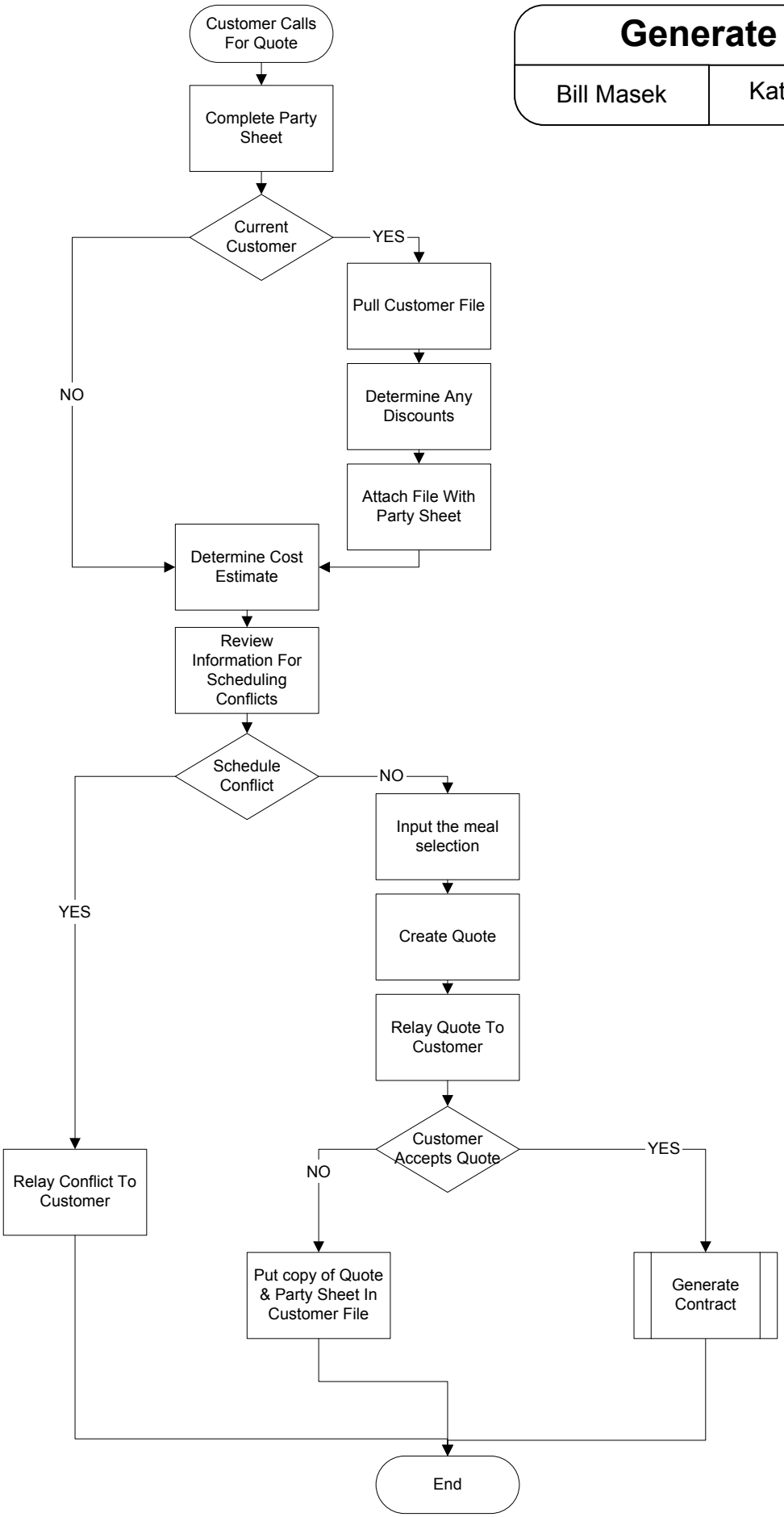
The current problems that Picnics Plus faces are: Their quote response time is not quick enough and the billing process is slow, causing some customers to go elsewhere. Ms. Hennessy works directly with the clients leaving her no time to supervise the company. Ms. Hennessey employs too many managers, and to many of them report to her. The company is under staffed for a large portion of the year and depends too heavily on summer college students. The company confirms orders to close to event and does not leave enough time for changes. There is not enough computer equipment and no tracking of inventory. The inventory is ordered event by event raising prices and reducing corporate profits.

1.3 Objectives–

1.3.1. Reply with event quote within 24 hours of initial customer contact.
1.3.2. Adjust Final Event Headcount Date to avoid last minute changes.
1.3.3. Create a better organizational reporting structure at Picnics Plus.
1.3.5. Combine Picnic Plus's orders so they may be ordered in mass, creating savings.
1.3.6. Create Interactive Website.
1.3.7. Enter all data into the computer system

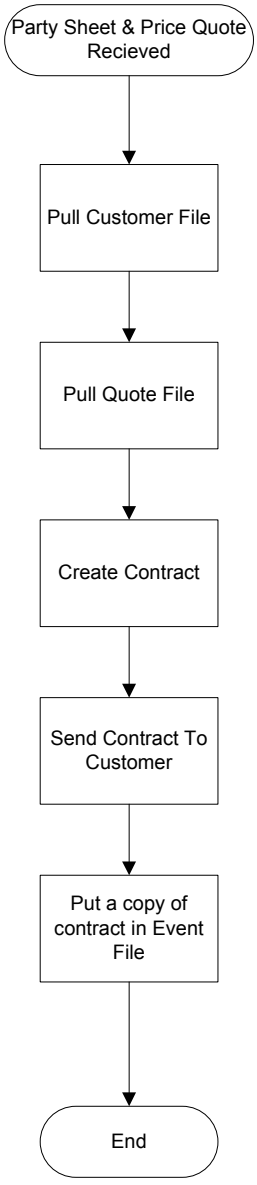
Generate Price Quote

Bill Masek	Katie Karp	Mark Jourdan



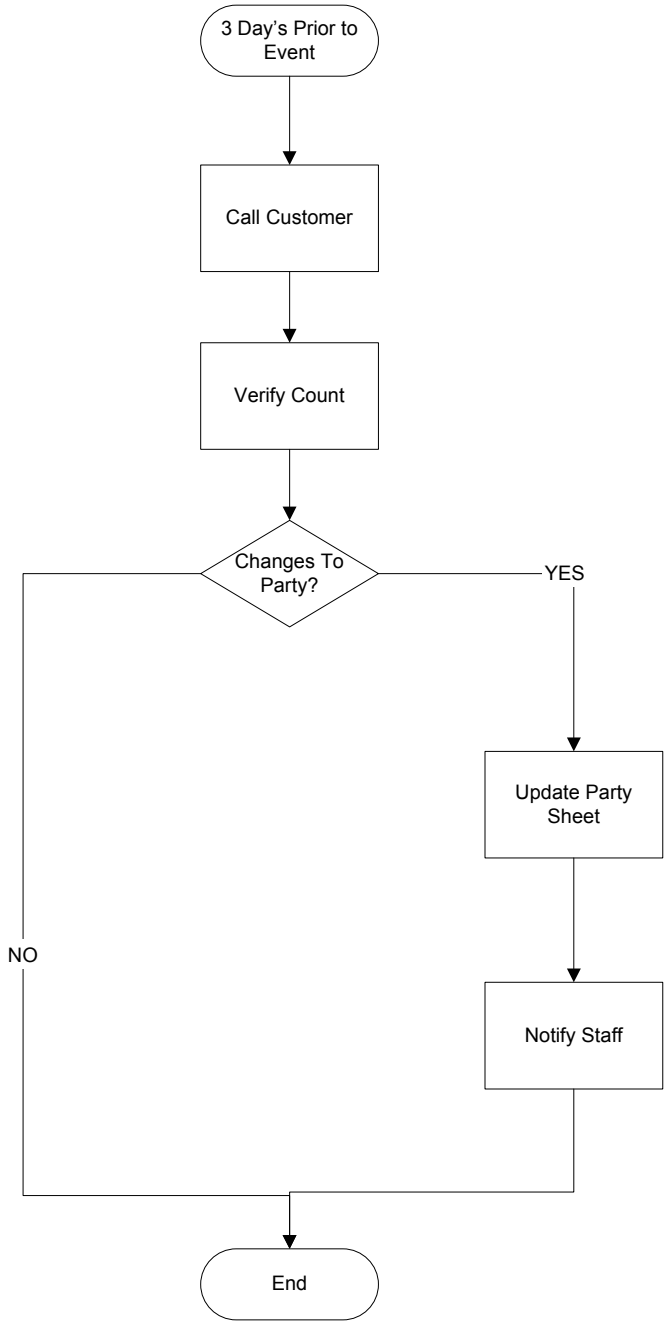
Generate Contract

Bill Masek	Katie Karp	Mark Jourdan

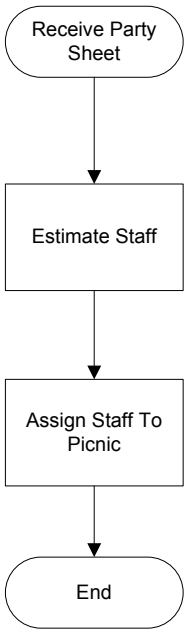


Update Event

Bill Masek	Katie Karp	Mark Jourdan

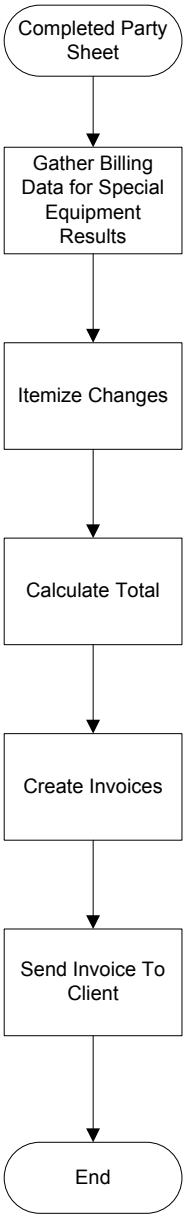


Schedule Staff		
Bill Masek	Katie Karp	Mark Jourdan



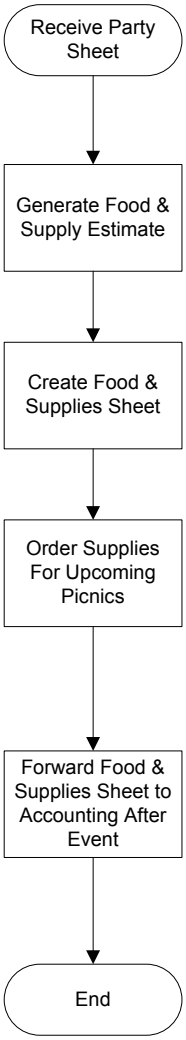
Prepare Invoice

Bill Masek	Katie Karp	Mark Jourdan



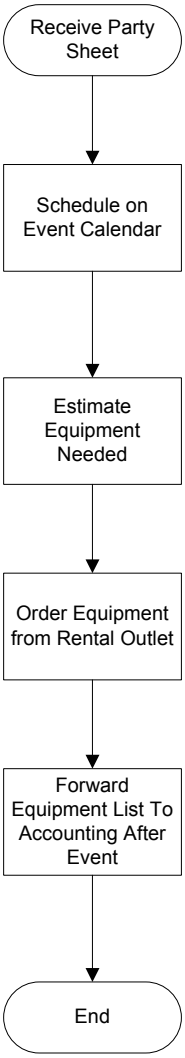
Order Food & Supplies

Bill Masek	Katie Karp	Mark Jourdan



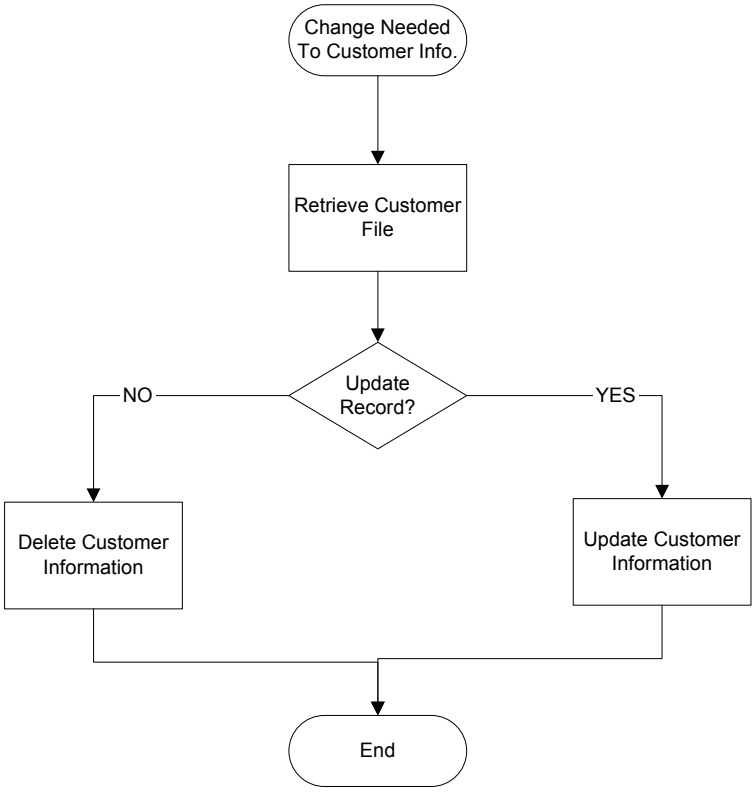
Order Equipment

Bill Masek	Katie Karp	Mark Jourdan



Update Customer Information

Bill Masek	Katie Karp	Mark Jourdan



Update Staff Information

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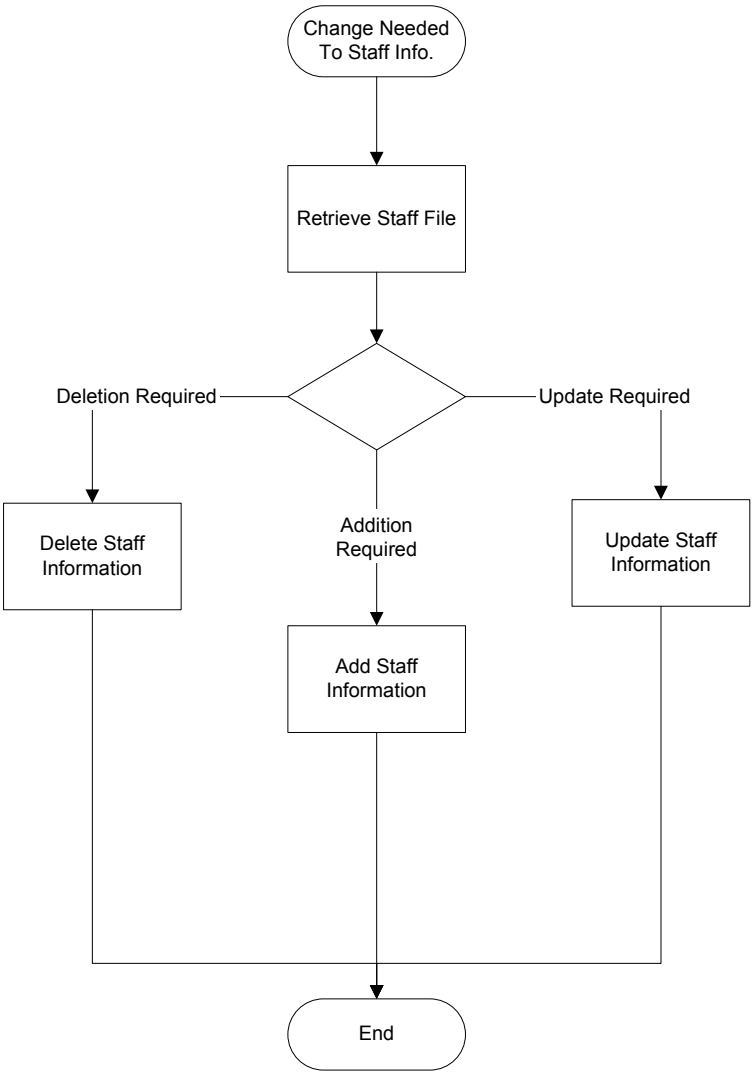
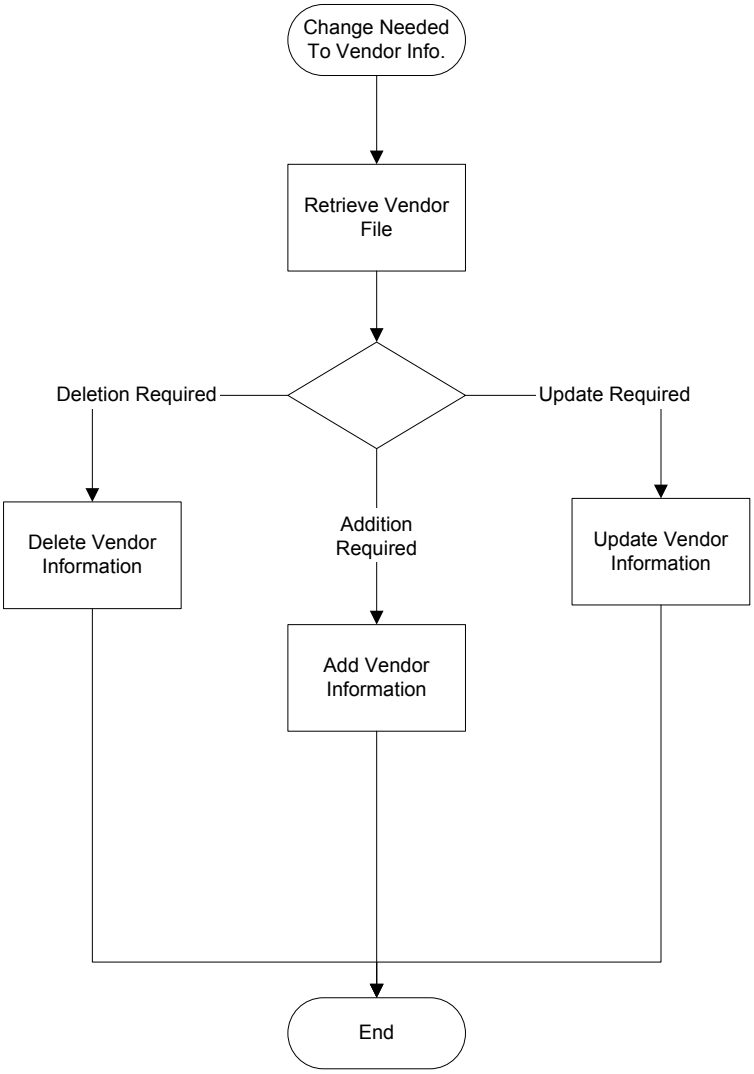


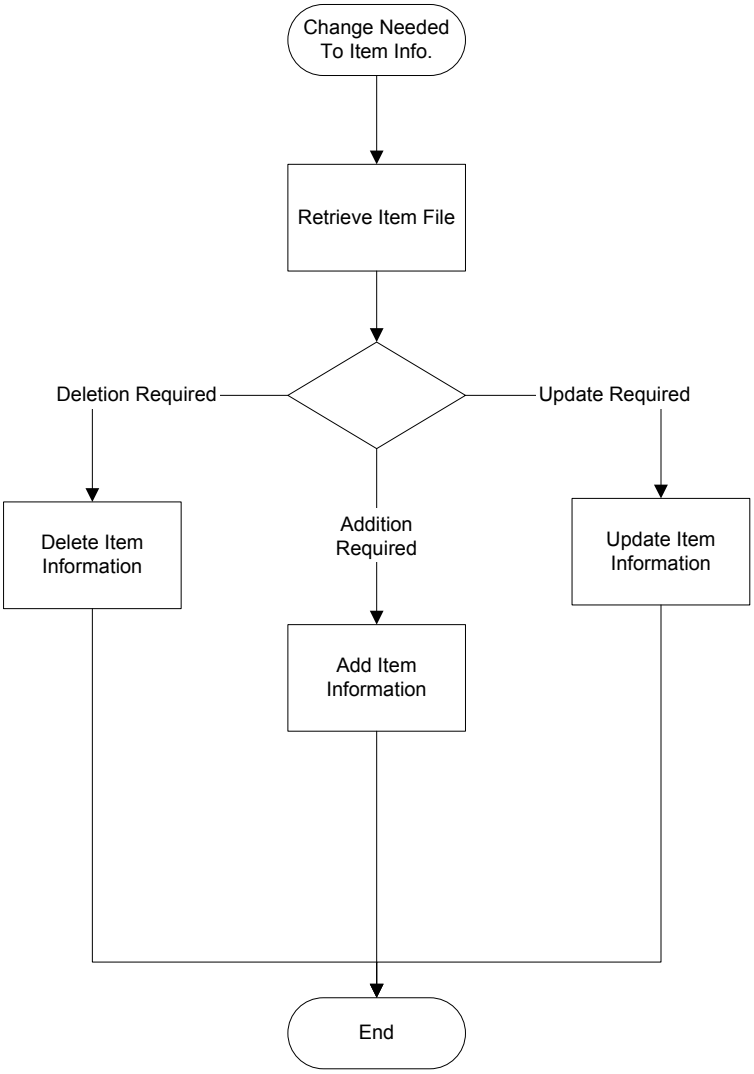
Update Vendor Information

Bill Masek	Katie Karp	Mark Jourdan



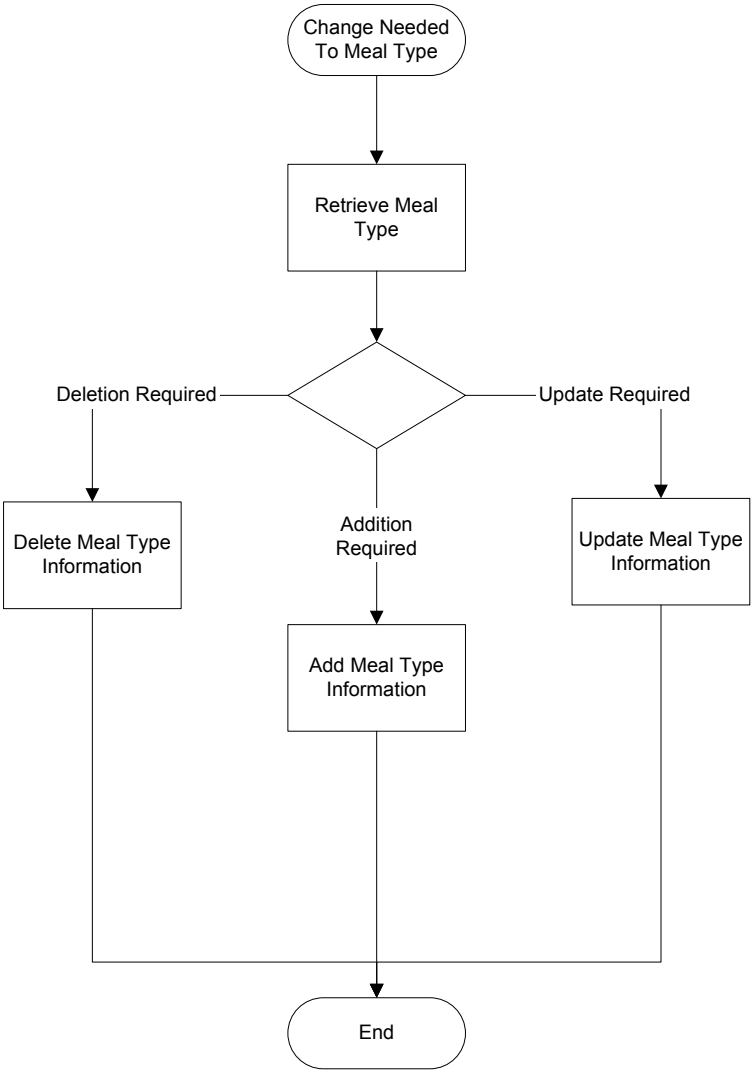
Update Items

Bill Masek	Katie Karp	Mark Jourdan



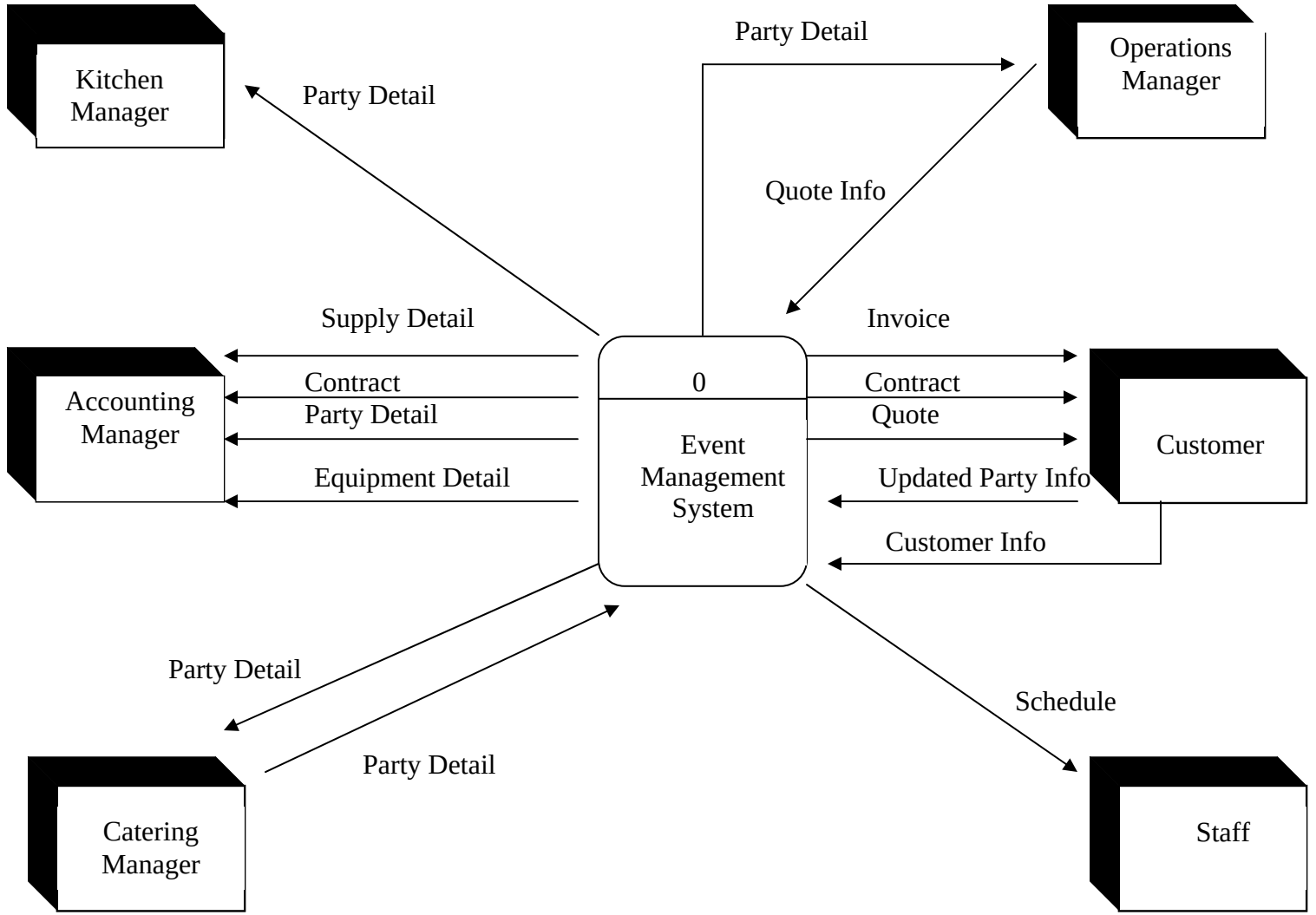
Update Meal Type

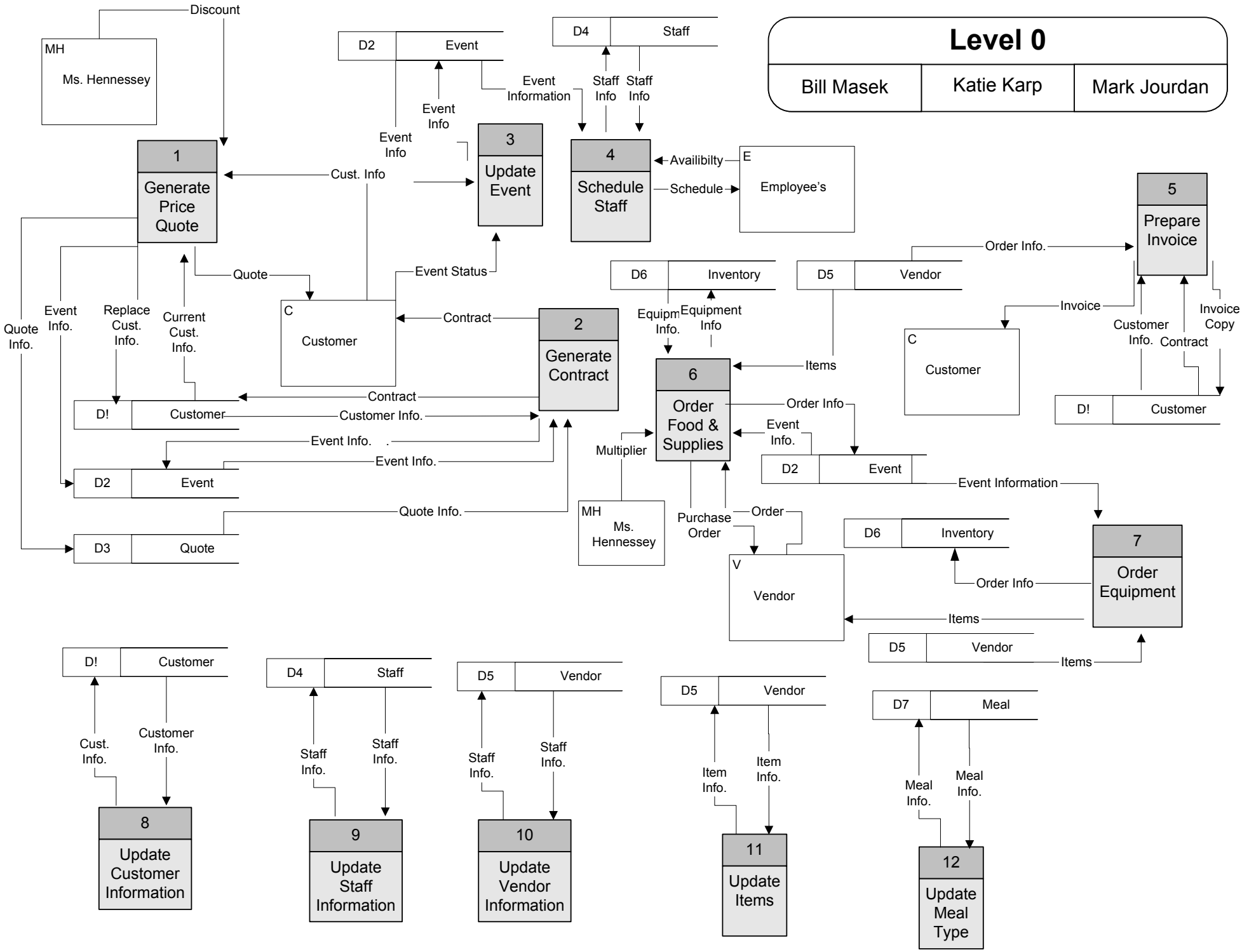
Bill Masek	Katie Karp	Mark Jourdan



Mark Jourdan, Katie Karp, Bill Masek

Picnics Plus
Context Diagram




Level 0
Bill Masek
Katie Karp
Mark Jourdan
MH
Ms. Hennessey
Discount
1
Generate Price Quote
2
Generate Contract
3
Update Event
4
Schedule Staff
5
Prepare Invoice
6
Order Food & Supplies
7
Order Equipment
8
Update Customer Information
9
Update Staff Information
10
Update Vendor Information
11
Update Items
12
Update Meal Type
C
Customer
E
Employee's
V
Vendor
D!
Customer
D2
Event
D3
Quote
D4
Staff
D5
Vendor
D6
Inventory
D7
Meal
Cust. Info.
Customer Info.
Event Info.
Event Information
Staff Info.
Availibilty
Schedule
Quote
Quote Info.
Replace Cust. Info.
Current Cust. Info.
Event Status
Contract
Equipm Info.
Equipment Info
Items
Order Info.
Invoice
Invoice Copy
Multiplier
Purchase Order
Order
Item Info.
Meal Info.

Generate Price Quote

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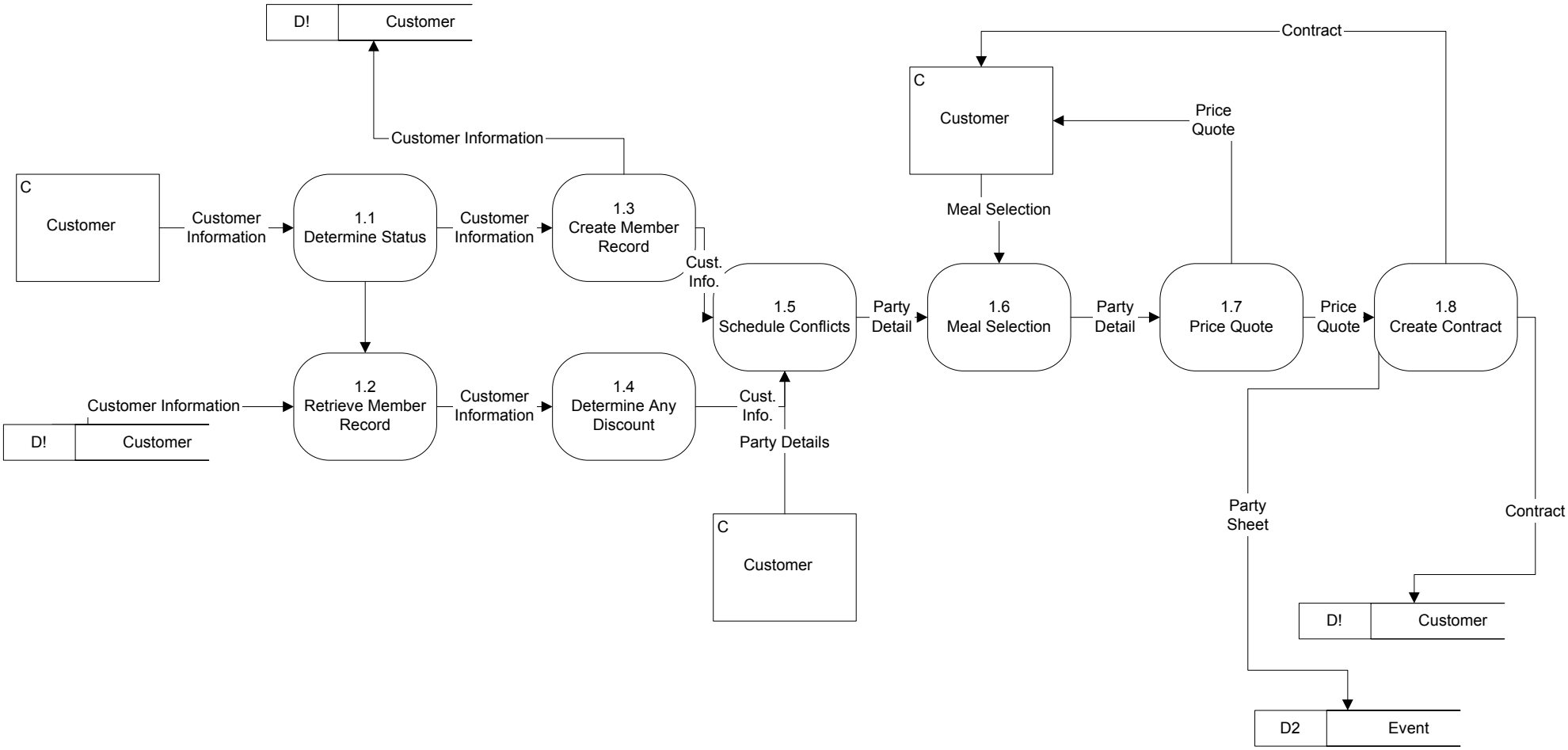
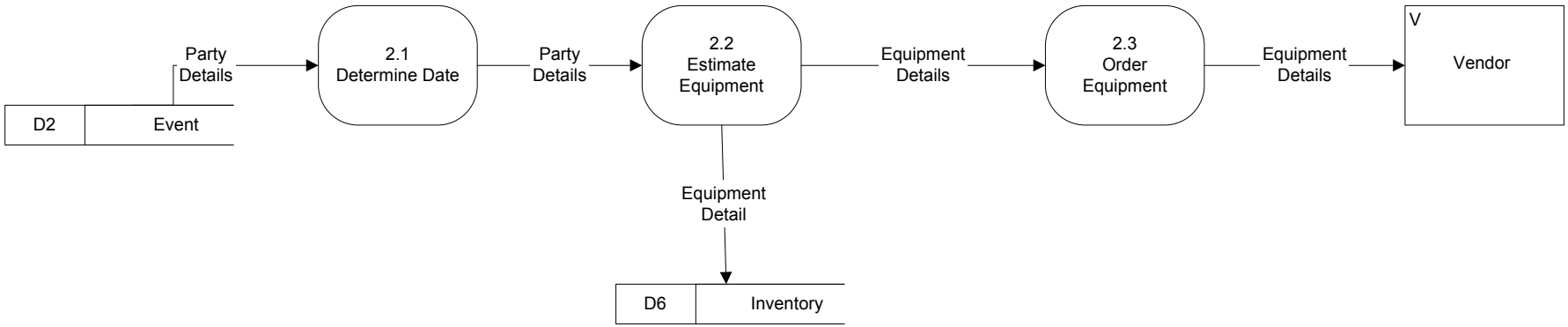


Generate Contract		
Bill Masek	Katie Karp	Mark Jourdan

Order Equipment

Bill Masek	Katie Karp	Mark Jourdan



Update Event

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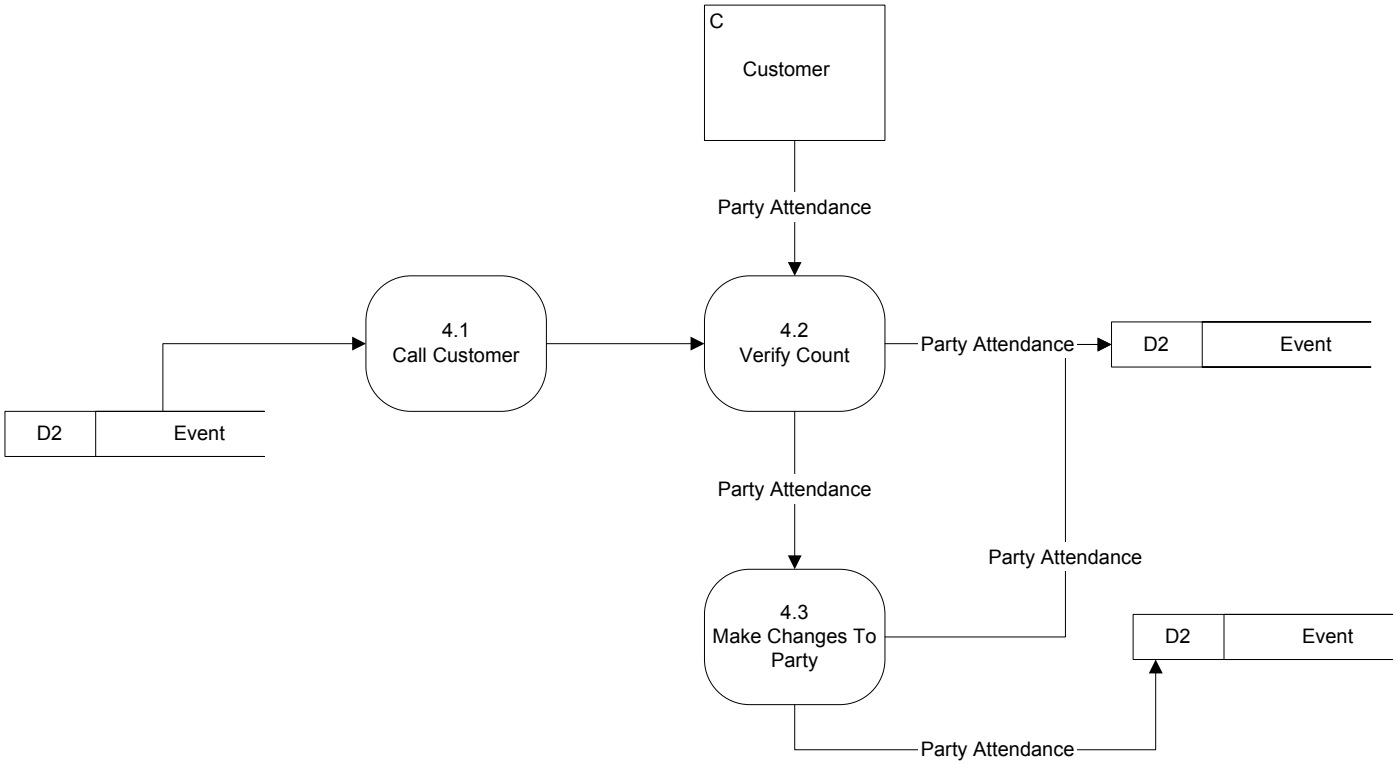

Prepare Invoice

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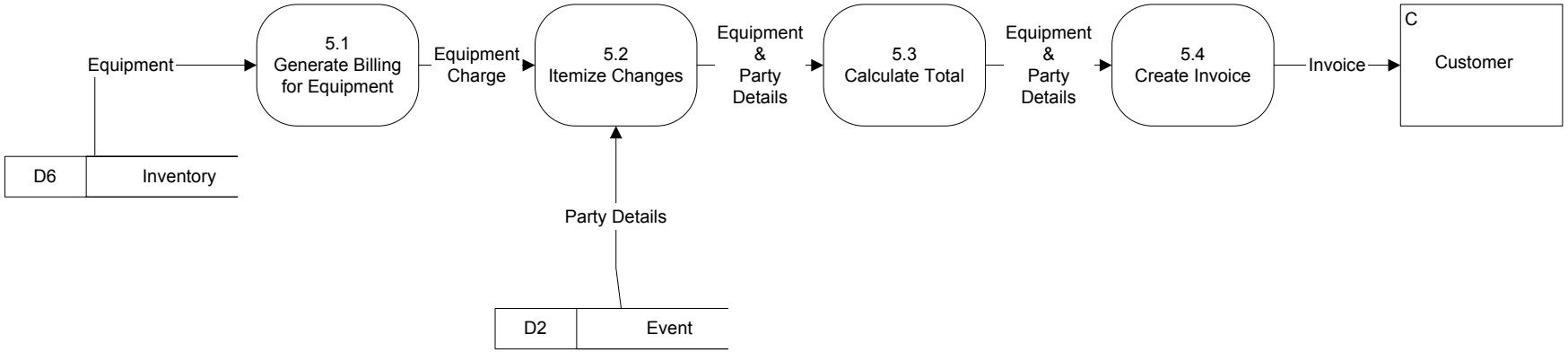

Schedule Staff

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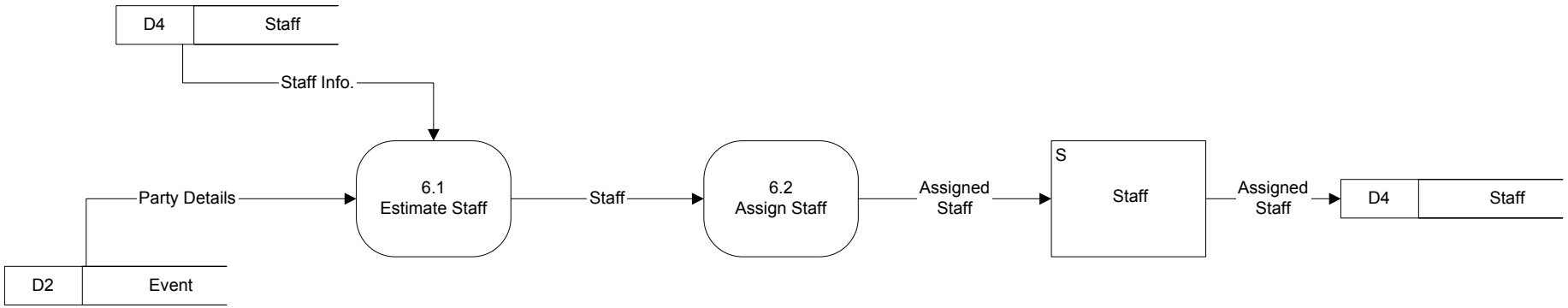

Order Food & Supplies

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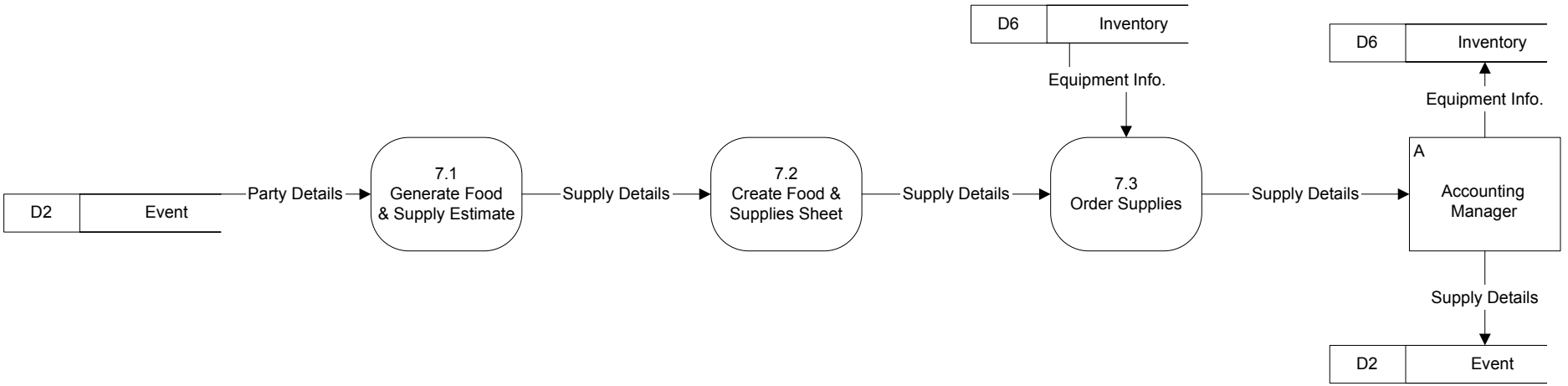

Update Customer Information

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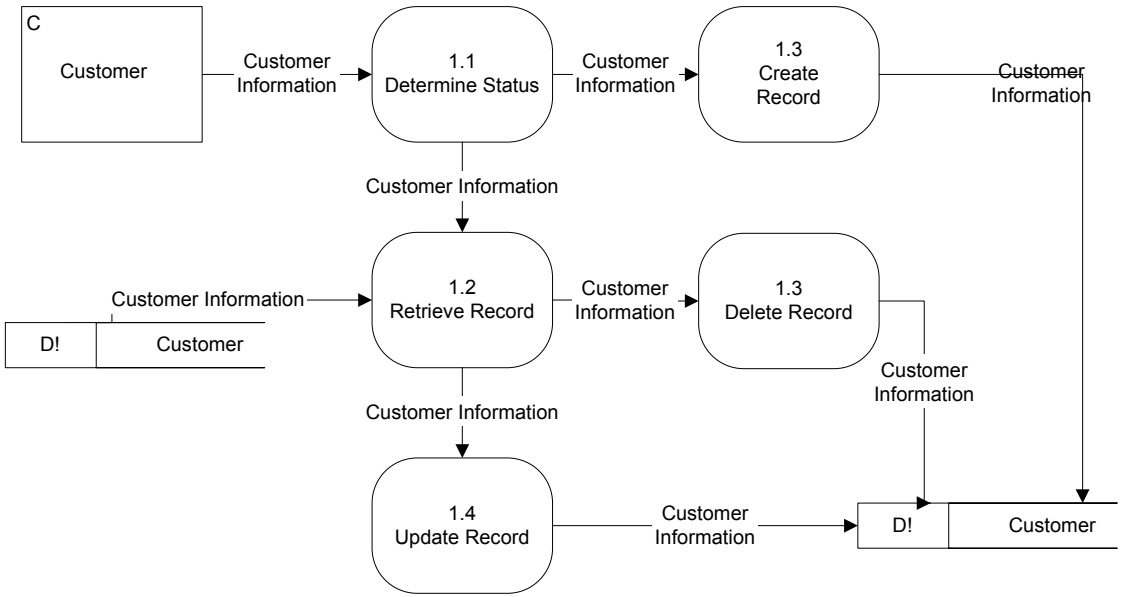

Update Staff Information

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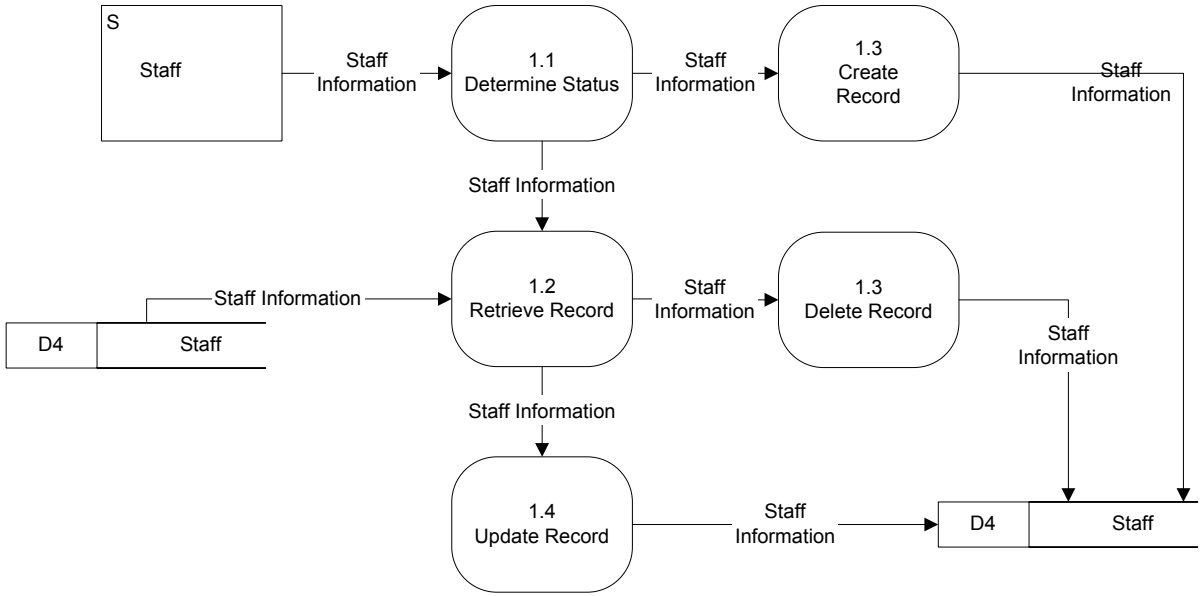

Update Vendor Information

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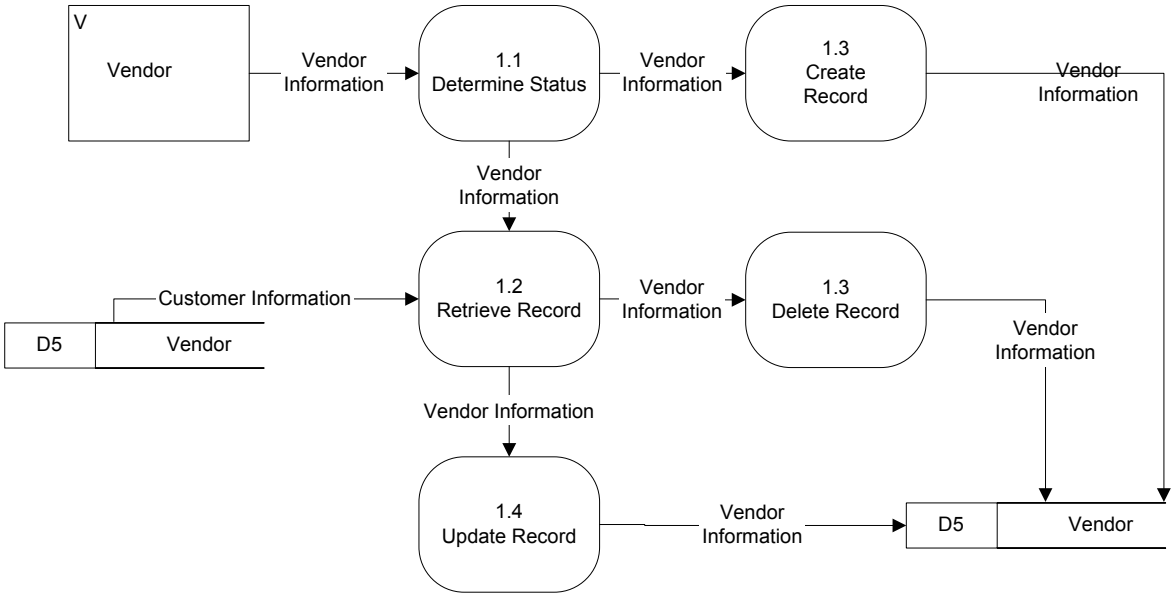
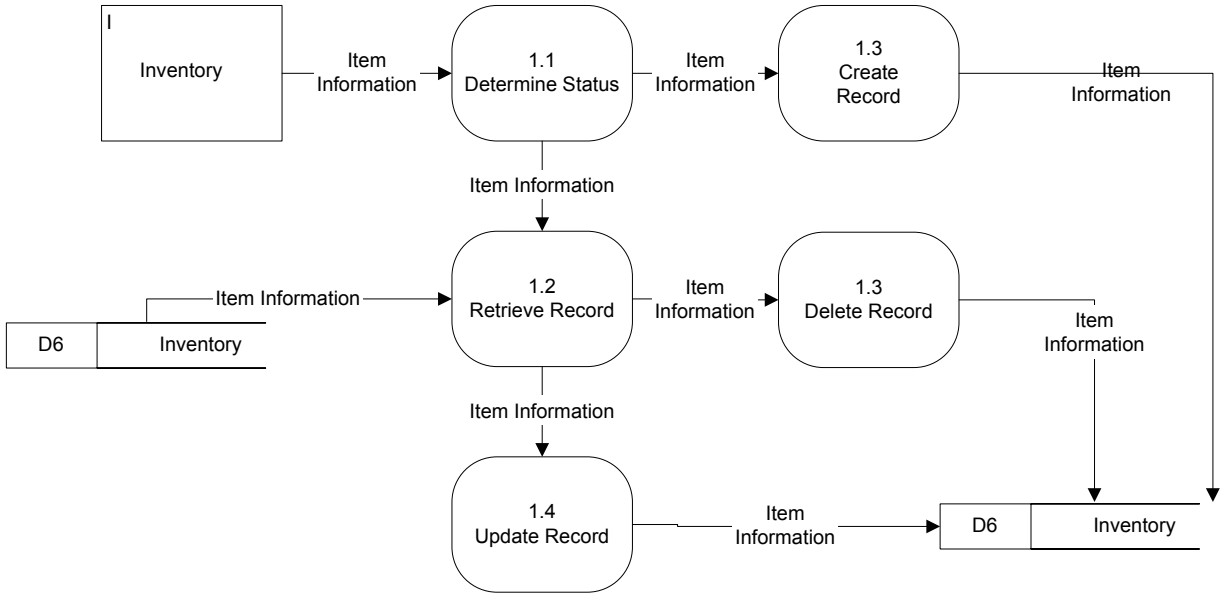


Update Items

Bill Masek	Katie Karp	Mark Jourdan



Update Meal Type

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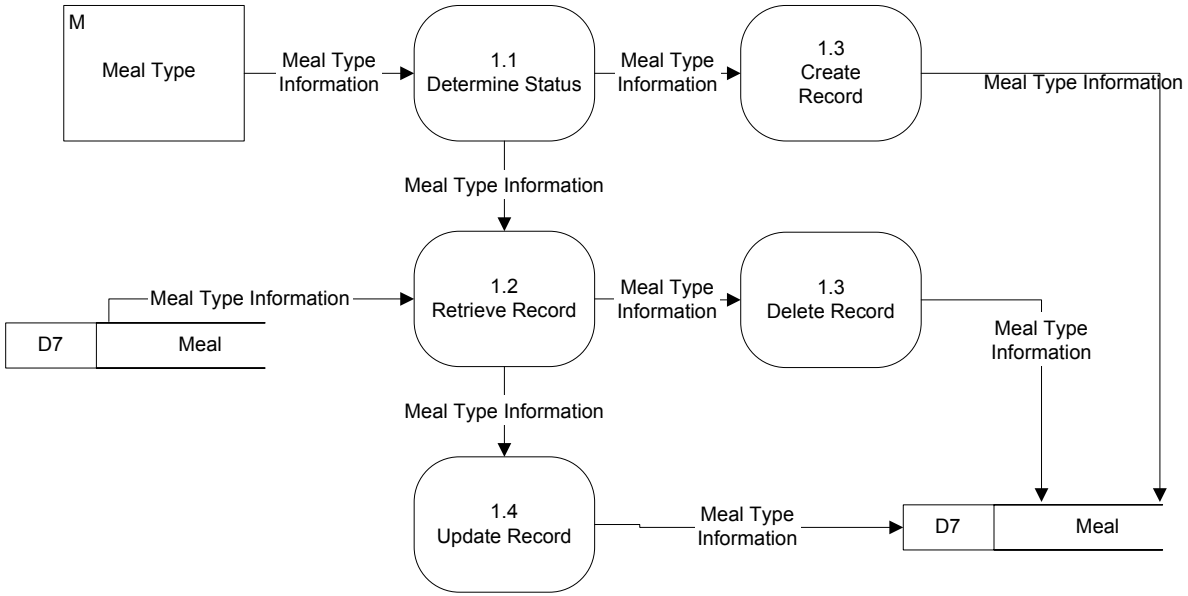


Picnics Plus

Analysis and Design

Picnics Plus is a small catering operation located in Chicago. The company is owned by Ms. Claudia Hennessy and managed by several managers including a Catering Manager, Operations Manager, Kitchen/Beverage/Pantry Managers, and an Accounting Manager. The staff also includes a Catering Secretary and party staff.

Picnics Plus currently has an IBM compatible computer with Windows and Office XP, DSL Internet Connection and a laser printer. Other supplies that Picnics Plus currently owns transportation vehicles on which the staff members load the party materials and transfer them to the party location. All other supplies are purchased or rented from outside vendors.

The BMJ Consulting Team suggests that Ms. Hennessy review her current organizational structure at Picnics Plus and improve her technological capabilities within the company to enhance productivity and service for customers, all of which will be discussed in further detail in the Consulting Team's Architectural Overview. However some components of the Consulting Team's report will be discussed in the Analysis and Design.

The Consulting Team recommends that Picnics Plus use a Local Area Network (LAN), which is "a network of personal computers in a small area (as an office) that are linked by cable, can communicate directly with other devices in the network, and can share resources." (Merrium-Webster Online Dictionary, 2003) A LAN line would allow Ms. Hennessy, as well as all other critical staff within her company to review the same data on separate computer terminals. The Consulting Team also recommends that Picnics Plus use their current Office XP operating system that is installed on Ms. Hennessy's current computer. The team also recommends that all newly ordered computers (amount and specifications will be listed in

greater detail in the architectural overview) also have Microsoft Office XP installed on them, so that the network of computers can run similar programs and access the data.

The Consulting Team recommends that Picnics Plus use a Microsoft Office program entitled Microsoft Access to store their customer, quote, event, inventory, vendor, order, staff information and an electronic calendar. Microsoft Access is a database, or "a usually large collection of data organized especially for rapid search and retrieval (as by a computer)." (Merrium-Webster Online Dictionary, 2003). Picnics Plus will also use this database to store a multiplier to determine the possible discount a returning customer might receive (depending on the amount of parties the customer has catered with Picnics Plus) and the amount of food for each event.

Picnics Plus will also use Microsoft Office XP's Microsoft Word. Microsoft Word is an application that allows you to save documents that you have created on the computer. It is a basic writing tool. Picnics Plus will use Microsoft Word to create a template for customer quotes, contracts, party sheets, food and supply orders and invoices.

Generate Quote

Current Process

In order to generate a quote, a customer places a call to picnics plus to inquire about their services and the cost of these services. With the help of Ms. Hennessy, the customer relays all the information necessary to complete the party sheet over the phone. Ms. Hennessy completes the party sheet according to the information given to her by the customer. Because Ms. Hennessy give discounts to repeated customers, Ms. Hennessy then determines if the customer is a new or current client. If the customer is a current client, Ms. Hennessy pulls the customer's file and determines the price of the event with the discount, if any, applied. If the customer is a new client, Ms. Hennessy determines the cost of the party. After determining the quote price of the party, despite whether the customer is new or current, Ms. Hennessy reviews the party information to determine if there are any scheduling conflicts with other parties currently catered by Picnics Plus. Ms. Hennessy then relays the quote information to the customer. The customer has the choice to accept or deny the quote provided by Ms. Hennessy. If the customer denies the quote, the process is complete. If the customer accepts the quote, Ms. Hennessy creates a contract using the information provided by the customer to complete the party sheet. Ms. Hennessy then sends the contract to the customer for their signature. The generate quote process is then complete.

Proposed Process

In order to avoid losing potential customers due to a delay in quote response time, it is important that Picnics Plus generate a customer quote and relay this information to the potential client within 24 hours of initial contact from the client.

It is proposed that Picnics Plus use a customer database, stored in Microsoft Access, in order to generate a quote within a reasonable amount of time. The company will also use a discount multiplier and contract template to complete this process within the time constraint of 24 hours. Within this process, the customer would contact Picnics Plus to inquire about their services and the cost of these catering services. With the help of the catering secretary, the customer relays all the information necessary to complete the customer party sheet over the phone. The catering secretary then completes the electronic party sheet by entering the customer information into the system. The secretary would then determine if the customer is a new or current client by searching the customer database for the customer's name and their previous orders. If the customer is a current client, a set electronic multiplier would determine the customer's discount based on the number of parties the customer has booked with Picnics Plus when the customer's name is found in the customer database. If the customer is a new client and is not found in the database, the customer would not receive a discount and the set cost of the Classic or Classic Plus packages would be applied. After determining the quote price of the party, the secretary reviews the party information to determine if there are any scheduling conflicts with other parties currently catered by Picnics Plus by reviewing the system's electronic calendar. This process could be completed while the customer is on the line, if the catering secretary is a backed up, he/she would return the customer's call within 24 hours, but should never exceed this time limit. The catering secretary then relays the quote information to the customer over the phone. The customer has the choice to accept or deny the quote provided. If the customer denies the quote, the process is complete. If the customer accepts the quote, the secretary continues to the next process of generating a contract.

Generate Contract

Current Process

Once a price quote is complete, the staff member who gave the price quote to the customer, creates a contract from the party sheet that has been previously approved by Picnics Plus for catering. The staff member mails the completed contract to the customer for signature. When the signed contract is returned to Picnics Plus, copies of the contract and party sheet are placed in the customer's file.

Proposed Process

It is proposed that after the customer approves the quote, the Catering Secretary begin creating the contract. The Catering Secretary would use the saved template in the Microsoft Word application. The Catering Secretary would enter the customer information in the template and print two copies. The Catering Secretary would send both copies to the customer for signature. The customer would keep one copy for their own records and would return the other copy to Picnics Plus. Once the signed copy is received by the Catering Secretary, he/she would file the contract within Picnics Plus' files of contracts.

Schedule Staff

Current Process

When the Operations Manager receives the party sheet from the Catering Secretary, the Operations Manager estimates the staff need for the particular event based on the number of people attending the picnic. The Operations Manager then schedules staff for the event.

Proposed Process

It is proposed that two weeks prior to the event, the Operations Manager look up staff availability on the Microsoft Access database. Based on the information from the event party sheet, the Operations Manager could estimate the amount of staff needed. This would allow the staff to request time off two weeks prior to their vacations or time needed off and would avoid scheduling conflicts. The Operations Manager would then list the staff working the event in the event database in Microsoft Access.

Order Food and Supplies

Current Process

Currently, when the catering manager receives the event party sheet from the Catering Secretary, he/she generates a food and supply estimate using the multiplier given by Ms. Hennessy. The Manager then creates a food and supply order sheet and orders these items from various vendors associated with Picnics Plus. After an event has taken place, the Manager sends the order sheet to the Accounting Manager for billing purposes.

Proposed Process

It is proposed that on Thursday of every week the Catering Manager check the inventory currently in stock using the inventory database in Microsoft Access and then order food and supplies needed for the upcoming week in gross amounts where applicable. This will save on the costs associated with purchasing supplies for individual events. The Catering Manager will look up the next week's food and supply needs by using the event information supplied by the Microsoft Access database. The Catering Manager would calculate exact amounts of food and supplies needed and fill out an order template using Microsoft Word. He/She would then fax the order sheet to the various vendors using the vendor information in the vendor database.

Order Equipment

Current Process

Currently, when the Operations Manager receives the event party sheet from the Catering Secretary, he/she generates an equipment list of items needed for a specific event. The Manager then orders these items from various vendors associated with Picnics Plus using the vendor information available in the vendor database. After an event has taken place, the Manager sends the order sheet to the Accounting Manager for billing purposes.

Proposed Process

It is proposed that on Thursday of every week the Operations Manager check the inventory currently in stock using the inventory database in Microsoft Access and then order equipment additional equipment needed for the upcoming week's evens in gross amounts. This will save on the costs associated with purchasing supplies for individual events. The Catering Manager will look up the next week's equipment needs by using the event information supplied by the Microsoft Access database. The Manager would calculate the amount of equipment needed for the week and fill out an order template using Microsoft Word. He/She would then fax the order sheet to the various vendors.

Update Event

Current Process

Three days prior to the event, the Catering Secretary contacts the customer to confirm the number of guests for the event. If there is a change in the number of guests, the Catering Secretary updates the party sheet and notify the other staff of the changes.

Proposed Process

It is proposed that three days prior to the event, the Catering Secretary contact the customer to confirm the number of guests. If there is a change in the number of guests, the Catering Secretary would update the event database in Microsoft Access. The other Managers would confirm their order supplies two days prior to the event. If the Managers need more supplies than they have ordered, they can use supplies intended for parties later in the week and order more supplies from the appropriate vendor by following the order process.

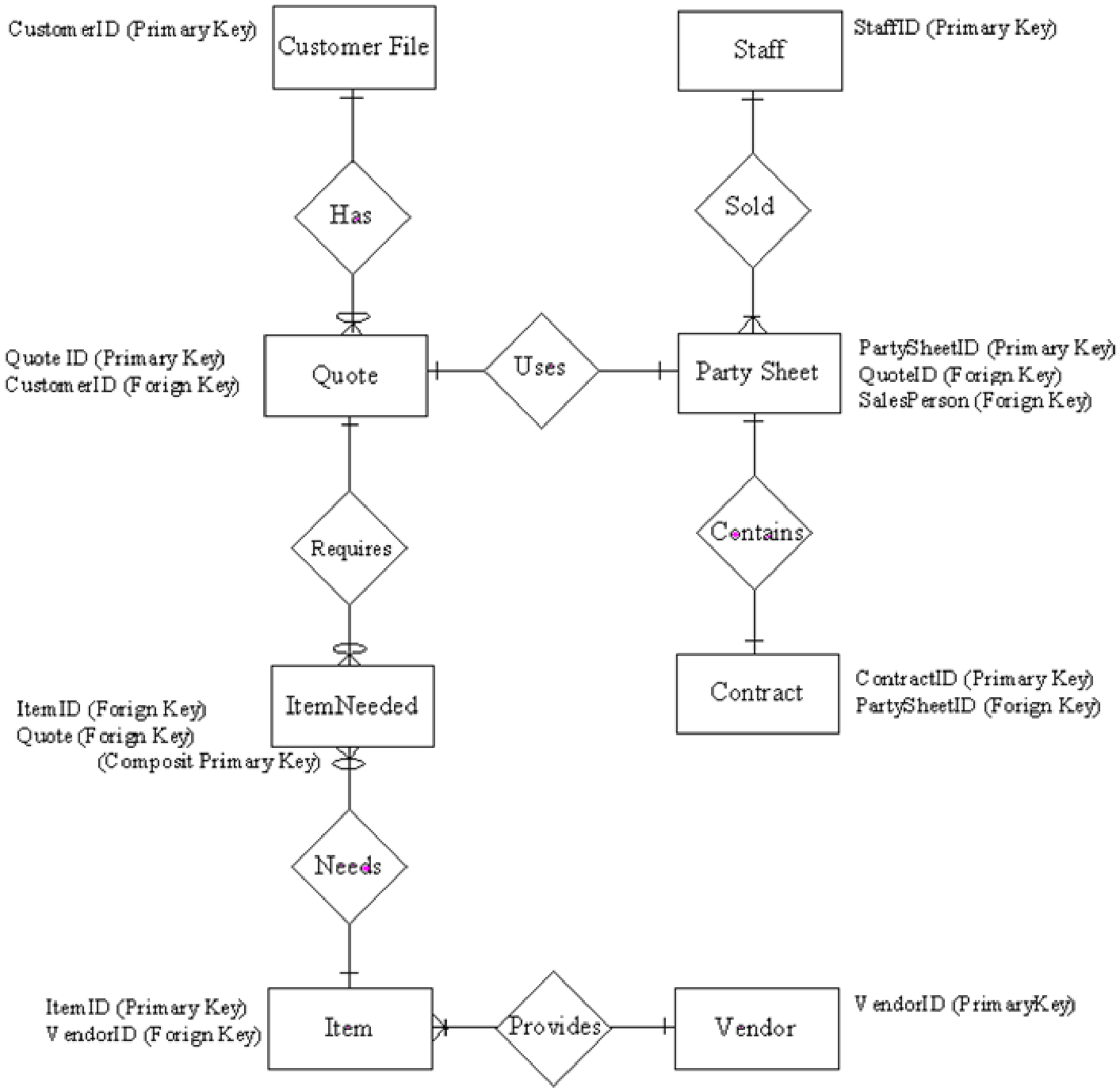
Prepare Invoice

Current Process

When the Accounting Manager receives the completed party sheets from all the Managers, the equipment lists, and a copy of the contract, he/she begins to create the invoice. The Accounting Manager gathers the data and billing for any special equipment requested and calculates the charges. The Manager itemizes the invoice and charges and sends the invoice to the client.

Proposed Process

It is proposed that the Accounting Manager process invoices daily for the previous day's events. The Accounting Manager would look up the event information from the event database, which includes the food, supply and equipment order information, and also the customer information from the customer database. The Manager would then calculate and itemize the charges using the invoice template in Microsoft Word. The Manager would then send a copy of the invoice to the customer for payment,


CustomerID (Primary Key)
Customer File
Staff
StaffID (Primary Key)
Has
Sold
Quote ID (Primary Key)
CustomerID (Foreign Key)
Quote
Uses
Party Sheet
PartySheetID (Primary Key)
QuoteID (Foreign Key)
SalesPerson (Foreign Key)
Requires
Contains
ItemID (Foreign Key)
Quote (Foreign Key)
(Composit Primary Key)
ItemNeeded
Contract
ContractID (Primary Key)
PartySheetID (Foreign Key)
Needs
ItemID (Primary Key)
VendorID (Foreign Key)
Item
Provides
Vendor
VendorID (PrimaryKey)

ER: Diagram Normalized

Customer File
{
	CustomerID (Primary Key)
	Client Name
	Address
	Phone
	Fax
	Contact
}

Contract
{
	ContractID (Primary Key)
	PartySheetID (Forign Key)
	ContractInfo
}

Party Sheet
{
	PartySheetID (Primary Key)
	QuoteID (Forign Key)
	SalesPerson (Forign Key)
	NumberOfGuests
	Events
	EventHours
	BeginFoodService
	Location
}

Quote
{
	Quote ID (Primary Key)
	CustomerID (Forign Key)
	Clasic
	ClasicPlus
	PriceTotal
}

Staff
{
	StaffID (Primary Key)
	Possition
	Wage
	Schedual
	StartDate

}

Vendor
{
	VendorID (PrimaryKey)
	VendorContact
	VendorAddress
	VendorNumber
}

ItemNeeded
{
	ItemID, Quote (Composit Primary Key, Forign Key, Forign Key)
	ItemQuantity
	OnHand
}

Item
{
	ItemID (Primary Key)
	VendorID (Forign Key)
	ItemType
	ItemDescription
	ItemPrice
	ExtraOnHand
}

Picnics Plus Data-to-Process-CRUD Matrix

Data Store.Attribute	Generate Price Quote	Gereate Contract	Update Event	Schedule Staff	Prepare Invoice	Order Food & Supplies	Order Equipment	Update Customer Information	Update Staff Information	Update Vendor Information	Update Items	Update Meal Type
Customer.CustomerID	CR	R	R		R			RUD				
Customer.ContractID (FK)	CRUD	R			R			RUD				
Customer.Client	CR	R	R		R			RUD				
Customer.ContactLastName	CR	R	R		R			RUD				
Customer.ContactFirstName	CR	R	R		R			RUD				
Customer.Address	CR	R			R			RUD				
Customer.City	CR	R			R			RUD				
Customer.State	CR	R			R			RUD				
Customer.Zip	CR	R			R			RUD				
Customer.Phone	CR	R	R		R			RUD				
Customer.Fax	CR	R			R			RUD				

Picnics Plus Data-to-Process-CRUD Matrix

Data Store.Attribute	Generate Price Quote	Gereate Contract	Update Event	Schedule Staff	Prepare Invoice	Order Food & Supplies	Order Equipment	Update Customer Information	Update Staff Information	Update Vendor Information	Update Items	Update Meal Type
Quote.QuoteID	CRUD	R			R							
Quote.CustomerID (FK)	R	R			R							
Quote.MealTypeID (FK)	CRUD	R			R							
Quote.SubTotalPrice	CRUD	R			R							
Quote.Discount	CRUD	R			R							
Quote.Tax	CRUD	R			R							
Quote.FinalPrice	CRUD	R			R							

Picnics Plus Data-to-Process-CRUD Matrix

Data Store.Attribute	Generate Price Quote	Gereate Contract	Update Event	Schedule Staff	Prepare Invoice	Order Food & Supplies	Order Equipment	Update Customer Information	Update Staff Information	Update Vendor Information	Update Items	Update Meal Type
Event.EventID	CRUD	R	RUD	R	R	R	R					
Event.MealType (FK)	CRUD	R	RUD		R	R						
Event.Hours	CRUD	R	RUD	R	R	R	R					
Event.BeginFoodService	CRUD	R	RUD	R	R	R	R					
Event.Location	CRUD	R	RUD	R	R		R					
Event.Salesperson	CRUD		RUD		R							
Event.NumberOfGuests	CRUD	R	RUD	R	R	R	R					
Event.Date	CRUD	R	RUD	R	R	R	R					
Event.Notes	CRUD		RUD		R							

Picnics Plus Data-to-Process-CRUD Matrix

Data Store.Attribute	Generate Price Quote	Gereate Contract	Update Event	Schedule Staff	Prepare Invoice	Order Food & Supplies	Order Equipment	Update Customer Information	Update Staff Information	Update Vendor Information	Update Items	Update Meal Type
Staff.EmployeeID				R					CRUD			
Staff.FirstName				R					CRUD			
Staff.LastName				R					CRUD			
Staff.Address				R					CRUD			
Staff.City				R					CRUD			
Staff.State				R					CRUD			
Staff.Zip				R					CRUD			
Staff.Phone				R					CRUD			
Staff.Fax				R					CRUD			
Staff.Cell				R					CRUD			
Staff.Pager				R					CRUD			
Staff.SSN				R					CRUD			
Staff.Sex				R					CRUD			
Staff.Salary				R					CRUD			
Staff.TaxExemption				R					CRUD			
Staff.Position				R					CRUD			
Staff.StartDate				R					CRUD			

Picnics Plus Data-to-Process-CRUD Matrix

Data Store.Attribute	Generate Price Quote	Gereate Contract	Update Event	Schedule Staff	Prepare Invoice	Order Food & Supplies	Order Equipment	Update Customer Information	Update Staff Information	Update Vendor Information	Update Items	Update Meal Type
Vendor.VendorID						R	R			CRUD		
Vendor.Name						R	R			CRUD		
Vendor.ContactFirstName						R	R			CRUD		
Vendor.ContactLastName						R	R			CRUD		
Vendor.Address						R	R			CRUD		
Vendor.City						R	R			CRUD		
Vendor.State						R	R			CRUD		
Vendor.Zip						R	R			CRUD		
Vendor.Phone						R	R			CRUD		
Vendor.Fax						R	R			CRUD		
Vendor.WebPage						R	R			CRUD		

Picnics Plus Data-to-Process-CRUD Matrix

Data Store.Attribute	Generate Price Quote	Gereate Contract	Update Event	Schedule Staff	Prepare Invoice	Order Food & Supplies	Order Equipment	Update Customer Information	Update Staff Information	Update Vendor Information	Update Items	Update Meal Type
Order.OrderID			R			CRUD	CRUD					
Order.VendorID (FK)			R			CRUD	CRUD					
Order.EventID (FK)			R			CRUD	CRUD					
Order.InventoryID (FK)			R			CRUD	CRUD					
Order.OrderDescription			R			CRUD	CRUD					
Order.OrderNotes			R			CRUD	CRUD					

Picnics Plus Data-to-Process-CRUD Matrix

Data Store.Attribute	Generate Price Quote	Gereate Contract	Update Event	Schedule Staff	Prepare Invoice	Order Food & Supplies	Order Equipment	Update Customer Information	Update Staff Information	Update Vendor Information	Update Items	Update Meal Type
Inventory.InventoryID						R					CRUD	
Inventory.ItemID (FK)						R					CRUD	
Inventory.VendorID (FK)						R					CRUD	
Inventory.Quantity						R					CRUD	

Picnics Plus Data-to-Process-CRUD Matrix

Data Store.Attribute	Generate Price Quote	Gereate Contract	Update Event	Schedule Staff	Prepare Invoice	Order Food & Supplies	Order Equipment	Update Customer Information	Update Staff Information	Update Vendor Information	Update Items	Update Meal Type
MealType.MealTypeID	R	R	R		R	R						CRUD
MealType.Name	R	R	R		R	R						CRUD
MealType.Description	R	R	R		R	R						CRUD

Picnics Plus Data-to-Process-CRUD Matrix

Data Store.Attribute	Generate Price Quote	Gereate Contract	Update Event	Schedule Staff	Prepare Invoice	Order Food & Supplies	Order Equipment	Update Customer Information	Update Staff Information	Update Vendor Information	Update Items	Update Meal Type
Item.ItemID						R	R				CRUD	
Item.Description						R	R				CRUD	
Item.Type						R	R				CRUD	
Item.Price						R	R				CRUD	

Picnics Plus Data-to-Process-CRUD Matrix

Data Store.Attribute	Generate Price Quote	Gereate Contract	Update Event	Schedule Staff	Prepare Invoice	Order Food & Supplies	Order Equipment	Update Customer Information	Update Staff Information	Update Vendor Information	Update Items	Update Meal Type
Contract.ContractID	R	CRUD			R							
Contract.EventID (FK)	R	CRUD			R							
Contract.Information	R	CRUD			R							

Data Dictionary

External Entity

Identifier: C
Name: Customer
Description: The customer entity provides all the customer contact and billing information into the system and also receives output.
Input Data Flows: Customer Information, Event status
Output Data Flows: Quote, contract, Invoice

Identifier: MH
Name: Ms. Hennessy
Description: Ms. Hennessy is the owner of Picnics Plus and inputs quote and party information.
Input Data Flows: Discount, Multiplier
Output Data Flows: Event Information

Identifier: E
Name: Employees
Description: Employees are staff of the company and input their schedule and contact information.
Input Data Flows: Employee Information, Availability
Output Data Flows: Schedule

Identifier: V
Name: Vendor
Description: Vendors supply food, supplies and equipment for Picnics Plus events.
Input Data Flows: Invoice
Output Data Flows: Purchase Order

Processes

Identifier: 1
Name: Generate Price Quote
Description: The Generate Price Quote process creates a party sheet for the customer and generates a quote of cost of services for the customer.
Input Data Flows: Customer Information, Customer Profile
Output Data Flows: Quote Info, Party Details, Contract, Event Info

Identifier: 2
Name: Generate Contract
Description: This process creates a contract between Picnics Plus and the customer for the event.
Input Data Flows: Customer Info, Quote Info

Output Data Flows: Event Info, Contract Info

Identifier: 3
Name: Schedule Staff
Description: This process assigns staff to an event.
Input Data Flows: Availability, Employee Info, Event Info
Output Data Flows: Assigned Staff, Staff Info

Identifier: 4
Name: Order Food and Supplies
Description: This process creates a order for food and supplies needed for each event.
Input Data Flows: Event Info, Equipment Info, Items, Multiplier
Output Data Flows: Purchase Order, Order Info, Equipment Info

Identifier: 5
Name: Order Equipment
Description: The process creates an order for equipment needed for each event.
Input Data Flows: Event Info, Equipment Info, Vendor Info, Items
Output Data Flows: Purchase Order, Order Info

Identifier: 6
Name: Update Event
Description: This process updates the headcount on each event scheduled.
Input Data Flows: Event Info, Updated Info
Output Data Flows: Updated Info

Identifier: 7
Name: Prepare Invoice
Description: This process prepares an invoice for the customer after the event is complete.
Input Data Flows: Event Info, Customer Info
Output Data Flows: Invoice Info

Data Store

Identifier: D1
Name: Customer
Description: This entity stores customer contact and billing information
Input Data Flows: Updated Customer Info, Event Information, Contract, Invoice Info, Contract Info
Output Data Flows: Customer Info, Quote Info, Event Info, Contract

Data Element: Customer ID (PK)
Type: Alpha-Numeric
Length: 5
Edit Mask: #####
Default Value: N/A
Prompt: Customer ID

Data Element: Client Name
Type: Alpha
Length: 30
Edit Mask: ################ ################
Default Value: N/A
Prompt: Client Name

Data Element: Address
Type: Alpha-Numeric
Length: 15
Edit Mask: N/A
Default Value: N/A
Prompt: Enter Customer Address

Data Element: Phone
Type: Numeric
Length: 10
Edit Mask: ###-###-####
Default Value: N/A
Prompt: Phone

Data Element: Fax
Type: Numeric
Length: 7
Edit Mask: ###-###-####
Default Value: N/A
Prompt: Fax

Data Element: Billing Address
Type: Alpha-Numeric

Length: 30
Edit Mask: N/A
Default Value: N/A
Prompt: Enter Billing Address

Data Element: Credit Card Number
Type: Numeric
Length: 17
Edit Mask: #### #### #### ####
Default Value: N/A
Prompt: Enter Credit Card Number

Data Store

Identifier: D2
Name: Event
Description: This entity stores the event information for each customer
Input Data Flows: Event Info, Staff Info, Equipment Info, Food/Supply Info
Output Data Flows: Event Info, Staff Info, Equipment Info, Food/Supply Info

Data Element: Event ID (PK)
Type: Numeric
Length: 10
Edit Mask: ##########
Default Value: N/A
Prompt: Enter Event ID

Data Element: Customer ID (FK)
Type: Numeric
Length: 5
Edit Mask: #####
Default Value: N/A
Prompt: Enter Customer ID

Data Element: Event Date
Type: Numeric
Length: 8
Edit Mask: ##/##/####
Default Value: N/A
Prompt: Enter Event Date

Data Element: Event Location
Type: Alpha Numeric
Length: 20
Edit Mask: N/A
Default Value: N/A
Prompt: Enter Event Location

Data Element: Order
Type: Alpha Numeric
Length: N/A
Edit Mask: N/A
Default Value: N/A
Prompt: Enter Order

Data Element: Staff Assigned
Type: Alpha Numeric
Length: N/A

Edit Mask: N/A
Default Value: N/A
Prompt: Enter Staff Assigned

Data Element: Food/Supply Info
Type: Alpha Numeric
Length: N/A
Edit Mask: N/A
Default Value: N/A
Prompt: Enter Food/Supply Info

Data Element: Equipment Info
Type: Alpha Numeric
Length: N/A
Edit Mask: N/A
Default Value: N/A
Prompt: Enter Equipment Info

Data Store

Identifier: D3
Name: Quote
Description: This entity stores the customer Quote information
Input Data Flows: Customer Info, Quote Info
Output Data Flows: Quote Info

Data Element: Quote ID (PK)
Type: Numeric
Length: 5
Edit Mask: #####
Default Value: N/A
Prompt: Quote ID

Data Element: Customer ID (FK)
Type: Numeric
Length: 5
Edit Mask: #####
Default Value: N/A
Prompt: Enter Customer ID

Data Element: Price Total
Type: Numeric
Length: 6
Edit Mask: ###,###
Default Value: N/A
Prompt: Price Total

Data Element: Classic
Type: Numeric
Length: 6
Edit Mask: ###,###
Default Value: N/A
Prompt: Clasic

Data Element: Classic Plus
Type: Numeric
Length: 6
Edit Mask: ###,###
Default Value: N/A
Prompt: Classic Plus

Data Store

Identifier: D4
Name: Staff
Description: This entity stores the staff information and availability
Input Data Flows: Staff Info, Staff Availability, Staff Assigned
Output Data Flows: Staff Info, Staff Availability, Staff Assigned

Data Element: Staff ID (PK)
Type: Numeric
Length: 5
Edit Mask: #####
Default Value: N/A
*Prompt:*Staff ID

Data Element: Position
Type: Alpha Numeric
Length: 8
Edit Mask: ##/##/####
Default Value: N/A
Prompt: Position

Data Element: Wage
Type: Numeric
Length: 8
Edit Mask: ##/##/####
Default Value: N/A
Prompt: Wage

Data Element: Staff Availability
Type: Alpha Numeric
Length: 8
Edit Mask: ##/##/####
Default Value: N/A
Prompt: Enter Staff Availability

Data Element: Schedule
Type: Alpha Numeric
Length: 8
Edit Mask: ##/##/####
Default Value: N/A
Prompt: Schedule

Data Element: Start Date
Type: Alpha Numeric
Length: 8

Edit Mask: ##/##/####
Default Value: N/A
Prompt: Start Date

Data Element: Event ID (FK)
Type: Numeric
Length: 10
Edit Mask: ##########
Default Value: N/A
Prompt: Enter Event ID

Data Element: Event Date
Type: Numeric
Length: 8
Edit Mask: ##/##/####
Default Value: N/A
Prompt: Enter Event Date

Data Element: Event Location
Type: Alpha Numeric
Length: 20
Edit Mask: N/A
Default Value: N/A
Prompt: Enter Event Location

Data Store

Identifier: D5
Name: Order
Description: This entity holds all order information for the event
Input Data Flows: Order Id, Order Info, Equipment Info, Food/Supply Info
Output Data Flows: Order Info, Equipment Info, Food/Supply Info

Data Element: Item ID, Quote ID (Composite PK)
Type: Numeric
Length: 5
Edit Mask: #####
Default Value: N/A
Prompt: Item ID/ Quote ID

Data Element: Quantity
Type: Alpha Numeric
Length: N/A
Edit Mask: N/A
Default Value: N/A
Prompt: Quantity

Data Element: On Hand
Type: Alpha Numeric
Length: N/A
Edit Mask: N/A
Default Value: N/A
Prompt: On Hand

Data Element: Food/Supply Order
Type: Alpha Numeric
Length: N/A
Edit Mask: N/A
Default Value: N/A
Prompt: Enter Food/Supply Order

Data Element: Equipment Order
Type: Alpha Numeric
Length: N/A
Edit Mask: N/A
Default Value: N/A
Prompt: Enter Equipment Order

Data Store

Identifier: D6
Name: Vendor
Description: This entity holds all vendor information for Picnics Plus
Input Data Flows: Vendor ID ,address, phone, fax, Order
Output Data Flows: Vendor ID, address, phone, fax, Order

Vendor
{
VendorID (PrimaryKey)
VendorContact
VendorAddress
VendorNumber
}

Data Element: Vendor ID (PK)
Type: Numeric
Length: 5
Edit Mask: #####
Default Value: N/A
Prompt: Enter Vendor ID

Data Element: Vendor Address
Type: Alpha-Numeric
Length: 15
Edit Mask: N/A
Default Value: N/A
Prompt: Vendor Address

Data Element: Vendor Number
Type: Numeric
Length: 10
Edit Mask: ###-###-####
Default Value: N/A
Prompt: Vendor Number

Data Element: Contact
Type: Alpha
Length: 20
Edit Mask: ########## ##########
Default Value: N/A
Prompt: Contact

Data Element: Fax
Type: Numeric
Length: 7
Edit Mask: ###-###-####

Default Value: N/A
Prompt: Enter Vendor Fax Number

Data Element: Order
Type: Alpha Numeric
Length: N/A
Edit Mask: N/A
Default Value: N/A
Prompt: Enter Order

Data Store

Identifier: D7
Name: Inventory
Description: This entity holds all inventory availability information for Picnics Plus
Input Data Flows: Inventory ID, Equipment Info
Output Data Flows: Inventory ID, Equipment Info
Item
{
ItemID (Primary Key)
VendorID (Forign Key)
ItemType
ItemDescription
ItemPrice
ExtraOnHand
}
Data Element: Item ID (PK)
Type: Numeric
Length: 5
Edit Mask: #####
Default Value: N/A
Prompt: Item ID

Data Element: Vendor ID (FK)
Type: Alpha Numeric
Length: N/A
Edit Mask: N/A
Default Value: N/A
Prompt: Vendor ID

Data Element: Item Type
Type: Alpha Numeric
Length: N/A
Edit Mask: N/A
Default Value: N/A
Prompt: Item Type

Data Element: Item Price
Type: Numeric
Length: N/A
Edit Mask: N/A
Default Value: N/A
Prompt: Item Price

Data Element: Item Description
Type: Alpha

Length: N/A
Edit Mask: N/A
Default Value: N/A
Prompt: Item Description

Data Element: Extra On Hand
Type: Alpha Numeric
Length: N/A
Edit Mask: N/A
Default Value: N/A
Prompt: Extra On Hand

Picnics Plus - Customer Information

Customer ID

Contact Name

Address

City

State AL - Alabama

Zip

Phone

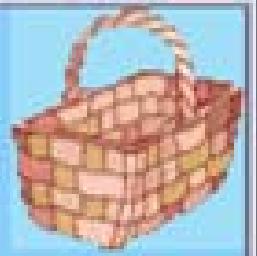
Fax

Picnics Plus

Clear Enter Delete

Picnics Plus - Event Information

Picnics Plus



Event ID

Quote ID

Salesperson

Number of Guests

Hours

Begining of Event

Location

Date

Meal Type: Classic

Clear | Enter | Delete

Picnics Plus Event Calander.cal

File Edit Personalize Help

January 2003 Plain (double)*

Picnics Plus Event Calander

January 2003

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		11:30am-4:30pm: City of Chicago 1:00pm-6:00pm: Top Hat Society 1	2	2:30pm-7:30pm: Rock And Roll Club 8:30am-1:30pm: Nationalist Socialist Party 3	4	5
6	2:30pm-7:30pm: Midevil Recreation Society 7	5:30am-10:30am: N.E.R.O. 8	9	10	11	12
13	1:00pm-6:00pm: Q101 9:00am-2:00pm: Jesus Loves Me Club 14	15	6:00pm-11:00pm: NAACP 16	3:00pm-8:00pm: DC Comics 17	1:00pm-6:00pm: Jackson Family 18	1:30pm-6:30pm: DePaul University 7:30am-12:30pm: City of Chicago 19
20	21	22	23	11:00am-4:00pm: Sun Systems 24	25	3:00am-8:00pm: Lake Forest High School 9:30am-2:30pm: NRA 26
27	28	29	1:30am-6:30pm: City of Chicago 30	31		

Picknics Plus

Quote

Client: City of Chicago
Address: Special Events Department
121 N. LaSalle Street
Chicago, IL 60602 Location: Grant Park
Phone: 312-555-1234
Fax: 312-555-2234
Contact: James Law
No. of Guests: 900 Classic: 400

Event Date: 9 April 02
Event Hours: 11 am - 4 pm
Begin Food Service: Noon

Sales Person: Joan Cusack
Classic Plus: 500

Cost Per Clasic: $4.50
Total Cost for Clasic: $1800
Customer Discount: $350

Cost Per Clasic Plus: $7.50
Total Cost for Clasic Plus: $3750
Additional Fees: $0

Total Cost of Picnic: $5200

Current System

Picnics Plus currently has an IBM compatible computer with Windows and Office XP, DSL Internet Connection and a laser printer.

Proposed Hardware

The BMK Consulting Team suggests that Ms. Hennessy improve her technological capabilities within the company to enhance productivity and service for customers. The consulting team proposes that Ms. Hennessy, the Operations Manager, Catering Secretary, Kitchen Manager and Accounting Manager all have their own computer because their job requires daily access to a computer. Picnics Plus will need six computers and workstations for their staff. The consulting team proposes that Picnics Plus purchase computers one computer generation behind the standard. Picnics Plus does not utilize any processes which require the power of the most modern computers, thus it is more cost efficient to use slightly older models. We recommend the Gateway E-400L desktop, which has an estimated cost of $699.00. The total estimated cost of computers for Picnics Plus would be $4,194.00.

The Consulting Team recommends that Picnics Plus use a Local Area Network (LAN), which is “a network of personal computers in a small area (as an office) that are linked by cable, can communicate directly with other devices in the network, and can share resources.” (Merrium-Webster Online Dictionary, 2003) A Local Area Network is connected to a server or "a computer in a network that is used to provide services (as access to files or shared peripherals or the routing of E-mail) to other computers in the network". (Merrium-Webster Online Dictionary, 2003) A LAN line would allow Ms.

Hennessy, as well as all other critical staff within her company to review the same data on separate computer terminals. A Gateway 400 Series Server can be purchased for an estimated cost of $599.00 and would be sufficient enough for the workload of Picnics Plus.

We recommend Picnics Plus create their LAN using CAT-5 cable connecting each workstation and the sever to one main switch. The switch will allow the workstations to communicate with each other and the server without the signal getting corrupted. We estimate the total cost of CAT-5 cable and switches to run around $79.95.

The Consulting Team recommends that Picnics Plus purchase a color laser printer for contracts and advertising. Ms. Hennsessy currently owns a black/white laser jet printer for daily printing. Both printers would be connected to the network. A Minolta Magicolor 2300DL Color Laser Printer can be purchased from Gateway at the estimated cost of $799.99. Both printers would be situated at a central location that would be accessible to all staff members.

We further recommended that Picnics Plus purchase a scanner, fax and copier with network capabilities (be connected to the network) for daily business functions. A scanner is a "device for sensing recorded data." (Merrium-Webster Online Dictionary, 2003) A scanner can be used to convert paper documents into text documents, and photos into digital images. A mid-grade Canon CanoScan LiDE 20 scanner can be purchased from Gateway at an estimated cost of $79.99. A fax machine "a device used to send or receive facsimile communications." (Merrium-Webster Online Dictionary, 2003) A fax mid level fax machine can be purchased from OfficeDepot at an estimated cost of $149.99. A copier is also needed for the daily functions at Picnics Plus. The work load

of the catering company requires a mid-level copier. A Canon imageCLASS D660 Digital Copier/Printer can be purchased from OfficeDepot at an estimated cost of $599.99.

Security

A firewall is "computer software that prevents unauthorized access to private data (as on a company's local area network or intranet) by outside computer users (as of the Internet)" (Merrium-Webster Online Dictionary, 2003). It is recommended that Picnics Plus purchase a firewall to protect their data from outside users and provide data security for the catering company. A firewall can be purchased from Gateway at an estimated cost of $464.95.

Picnics Plus will also be responsible for backing up their data should an incident occur in which their data is lost. It is recommended that all computers and network software be connected to a Belkin 1000VA/550Watt battery. In the case of a power outage, this battery will supply the system with enough power to save all relevant changes before crashing. Such a battery will cost around $100. It is also recommended that Picnics Plus back up their data on magnetic tape ever six months. The hardware for backing up the server will be rented from an external company.

Web Integration

It is recommended that Picnics Plus acquire DSL Internet access from a local area provider. This would allow Picnics Plus to access the Internet. Prices for this service vary upon the local area provider.

Picnics Plus will not only need Internet access but will also need to create a website for customer use. Picnics Plus will need to acquire a website from an external

company and host this site. The website should have order submission capabilities as well as contact information for Picnics Plus. Cost for initial web development range from $10-13,000.00 for development and server rental space.

Software

The Consulting Team also recommends that Picnics Plus use their current Office XP operating system that is installed on Ms. Hennessy's current computer. The team also recommends that all newly ordered computers also have Office XP installed on them, so that the network of computers can run similar programs and access the data.

The Consulting Team recommends that Picnics Plus use an Office program entitled Microsoft Access to store their customer, quote, event, inventory, vendor, order, staff information and an electronic calendar. Access is a database, or "a usually large collection of data organized especially for rapid search and retrieval (as by a computer)." (Merrium-Webster Online Dictionary, 2003). Picnics Plus will also use this database to store a multiplier to determine the possible discount a returning customer might receive (depending on the amount of parties the customer has catered with Picnics Plus) and the amount of food for each event.

Picnics Plus will also use Office XP's Microsoft Word. Word is an application that allows you to save documents that you have created on the computer. It is a basic writing tool. Picnics Plus will use Word to create a template for customer quotes, contracts, party sheets, food and supply orders and invoices.

Scalability

Scalability is "the measure of a system's ability to expand, change or downsize easily to meet the changing needs of the business enterprise." (Shelly, Cashman,

Rosenblatt, 2001) Because Picnics Plus would like to expand its business, it is important that the new system be scalable. The network and technology needs of Picnics Plus will allow them to expand over time.

As our proposed network stands, all we would need to do to expand it is purchase additional workstations, cable and possibly another switch. If a large scale upgrade were required, a new server would also be necessary. Thus, as the system stands, in the case of an upgrade, most of the current hardware would be re-useable, resulting in very little to no monetary loss.

Costs

Initial costs of the new Picnics Plus system, including hardware, software and web integration are estimated at $27,000.00. Ongoing costs such as web server fees, website fees, Internet fees, hardware maintenance and software licenses are estimated at $10,000.00 per year.

Mark Jourdan, Katie Karp, Bill Masek

Database Overview

Scalability

Scalability means that system can expand, be modified, or downsized easily to change the needs of Picnics Plus, would be something good for Picnics Plus's Database Management System (DBMS) since the company is looking to grow and expand in the future.

Better support for client/server systems

Yes better support for a client/server system would be beneficial for Picnics Plus since you will have a large number of queries needed to update, database changes, database back-up's, etc. With someone who is fully trained in the DBMS they would experience the most out of the client/server system.

Economy of scale

Economy of scale is not beneficial to Picnics Plus because they are a small company; the high cost of an expensive main-frame isn't that beneficial for such a small company. A few cheaper computers with one good server to host the database will be fine; an expensive mainframe is not needed.

If you had a mainframe and cheaper terminals, you would run into the trouble of running higher end programs such as photo, illustrator, financial, or publication software on the cheaper terminals. You would need a higher end computer to run them.

Sharing of data

Sharing of data is a necessity for Picnics Plus since a number of employees all need to access different data from the DBMS. Also the same data may need to be accessed by two managers at once, especially a kitchen manager and a beverage manager. Also all employees need to access up to date information and it can't just be a file that is sent nightly to everyone. That is why the DBMS must be accessible to all employees at the same time.

Balancing conflicting requirements

In this case, there currently are no conflicts of interest in the company and you do not need a Database Administrator due to such a small database. You probably would like to hire one employee that can take care of the database as well as all other technical aspects in the job, such as maintenance of the networks, web design, or computer maintenance. All employees also have one goal in mind set and there are no conflicting requirements of the system we have created from any manager's view.

Enforcement of standards

Yes, enforcement of standards is necessary so that the system does not loose its integrity. Everything should remain standard even when the system is upgraded, or tweaked. Without the integrity kept data can be lost, the system will fail, or also the company will go into ruins.

Controlled redundancy

Controlled redundancy needs to be taken care of so space is not wasted due to redundant records. The database should constantly remove duplicated records or control the database so duplicated records can not be created. Since the database will all be held on one computer controlled redundancy will not be hard to maintain.

Security

Security is highly necessary in the DBMS seeing that this database will be connected to the web server so that customers can enter there own customer information from the internet. Also not all managers need to be able to access all information from the

database. Especially budget information does not need to be accessed in the kitchen. Also seeing that this database will have extremely confidential information about customers you need to make sure that there is a high level of security maintained on the database.

Increased programmer productivity

Since Picnic's Plus's database is not very elaborate, you do not need to worry about the file saving and the database structure will be fine. This way the programmer can concentrate a greater amount of time on the structure and logical design rather than the file structure.

Data Independence

The database being kept for Picnics Plus should have data independence so that at anytime when the company grows or if they just plainly want to change the structure of things the data storage does not have to change because of the changes in the structure.