

# **Requirements Document**

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## **1 What is The Restaurant Automation System?**

The Restaurant Automation System is a comprehensive software solution designed to streamline restaurant operations, with a focus on order management and inventory tracking. Tailored for small to medium-sized establishments, this system helps restaurant managers and owners efficiently handle customer orders, monitor stock levels, and optimize daily workflows. By automating routine tasks, it reduces administrative burden and enhances overall service quality.

## **2 Major Features**

Major features of The Restaurant Automation System include:

- Menu item creation and display
- Ingredients and stock tracking
- Order creation and display
- Automatic stock deduction on order
- Ingredient shortage notifications
- Daily and weekly report generation
- Item category and subcategory support

### **3 How does it work?**

The Restaurant Automation System works by allowing users to create and manage menu items, each associated with a list of ingredients. Every time an order is placed, the system automatically updates the ingredient stock.

The process starts with adding items to the menu, assigning them to categories (e.g., Starter, Main, Dessert), and specifying the required ingredients and quantities.

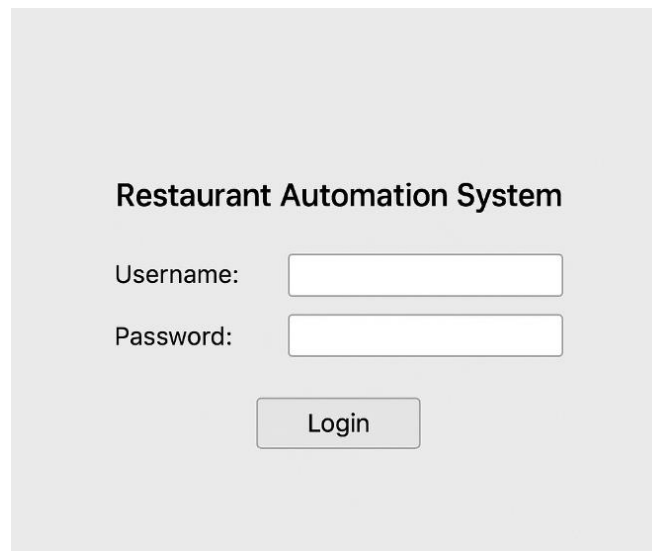
Ingredient management allows managers to track current stock levels, refill when necessary, and receive notifications for low inventory.

When customers place an order, the system checks ingredient availability, confirms the order, and deducts the required ingredients. Managers can view all orders placed on a particular date and generate reports accordingly.

## 4 Using The Restaurant Automation System

### 4.1 Getting Started

The Restaurant Automation System starts. It requires the user to enter a security username and password.



The image shows a login dialog box for the 'Restaurant Automation System'. It has a light gray background. At the top, the title 'Restaurant Automation System' is centered. Below the title, there are two labels: 'Username:' and 'Password:'. Each label is followed by a white rectangular input field. Below these fields is a button labeled 'Login'.

**Figure 1 - Login Dialog**

Once the user has successfully logged in, the main menu will be displayed. The user has four choices:

1. Create new order
2. Display menu
3. Manage Inventory
4. Generate Reports

**4.2 A help menu is available for users on the main menu that will help them decide which selection is best their needs.**

## 4.2 Main Menu



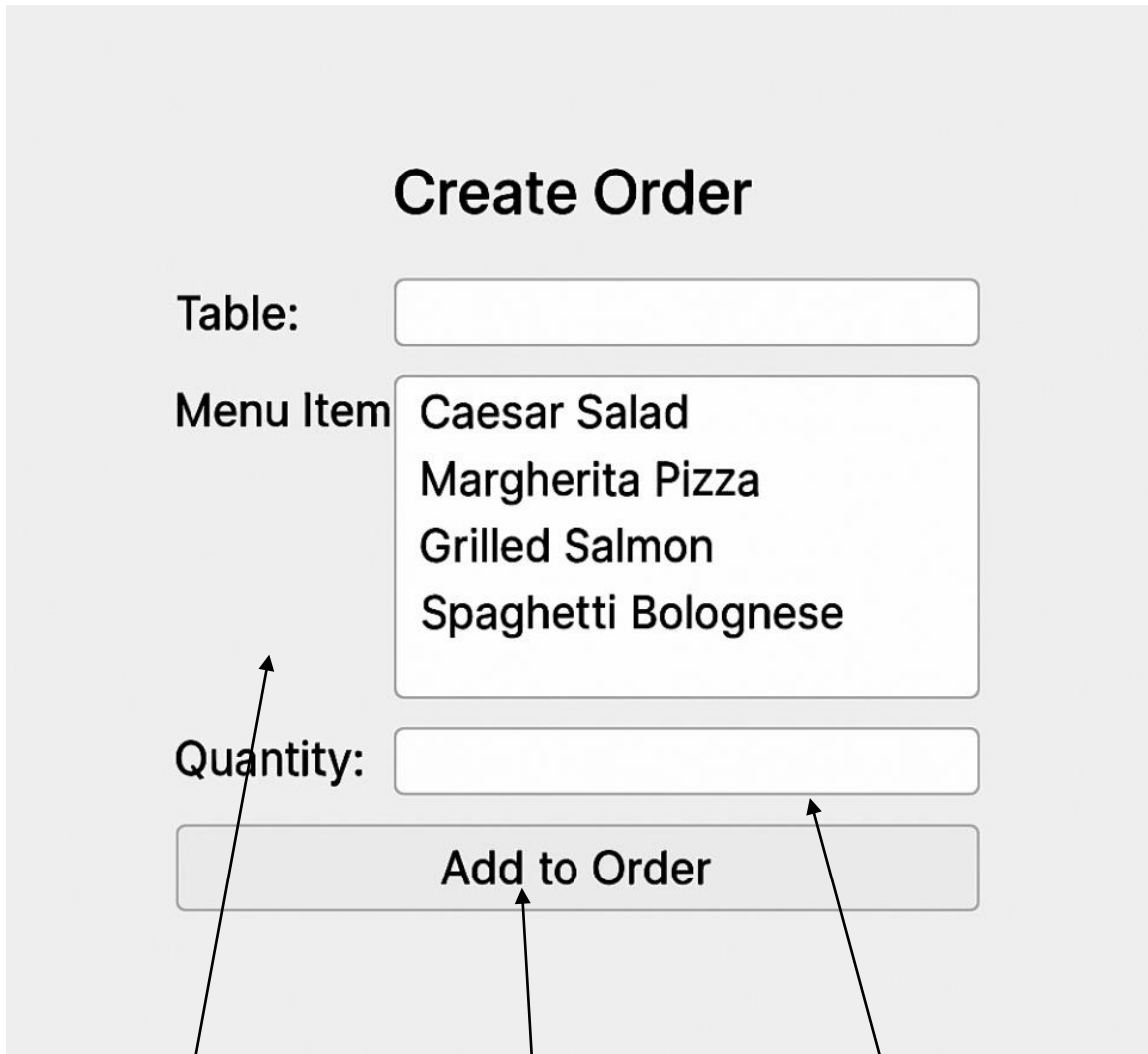
**Figure 2 – Main Menu**

Once the user chooses "Create Order" option, the following window will be displayed. This dialog allows the user to enter:

1. Table
2. Menu Item
3. Quantity



### 4.3 Create new order



The image shows a 'Create Order' form with several input fields and a button. Annotations with arrows point from text boxes below to specific parts of the form:

- An arrow points from 'Shows the table of the order' to the 'Table:' label.
- An arrow points from 'Shows the quantity of the added item' to the 'Quantity:' label.
- An arrow points from 'Shows the ordered items' to the 'Add to Order' button.

**Create Order**

Table:

Menu Item

Quantity:

Figure 3 - Create New Order

4.4

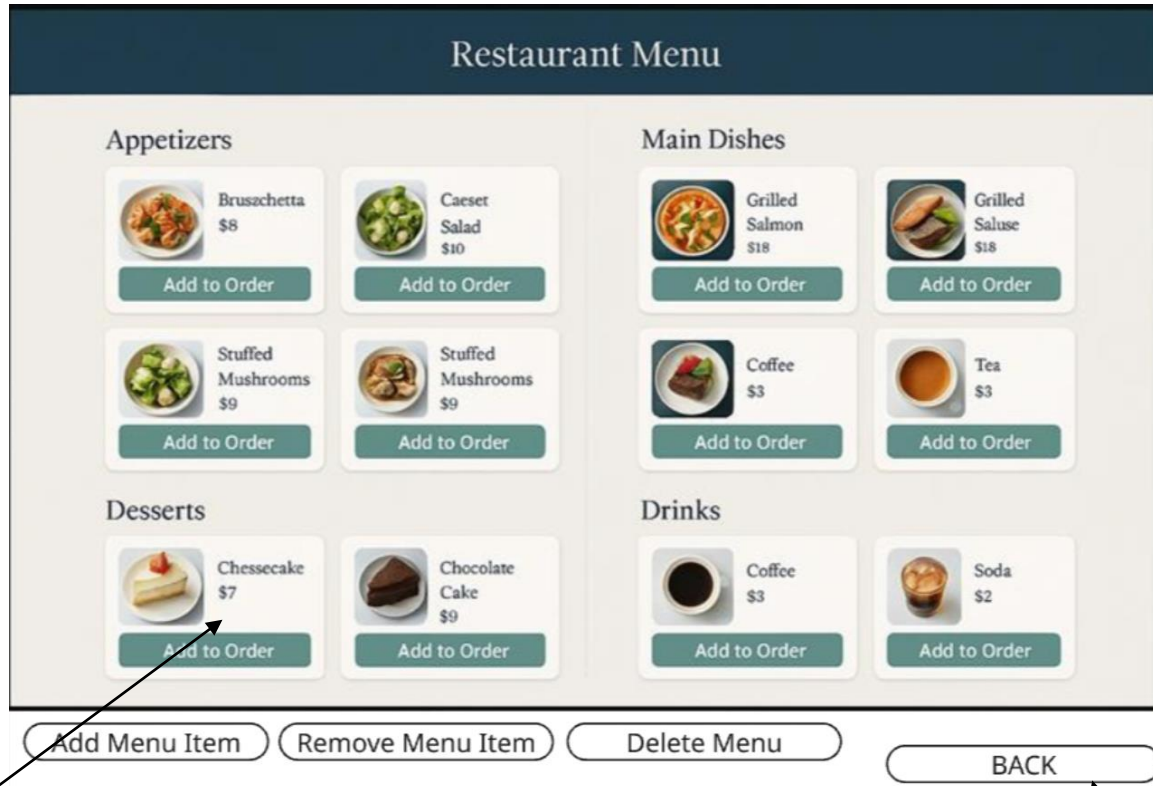
Shows the table of the order

Shows the ordered items

Shows the quantity of the  
added item

## 4.4 View Menu

The user clicks on “View Menu” button, and following window will be displayed.



Order item  
type

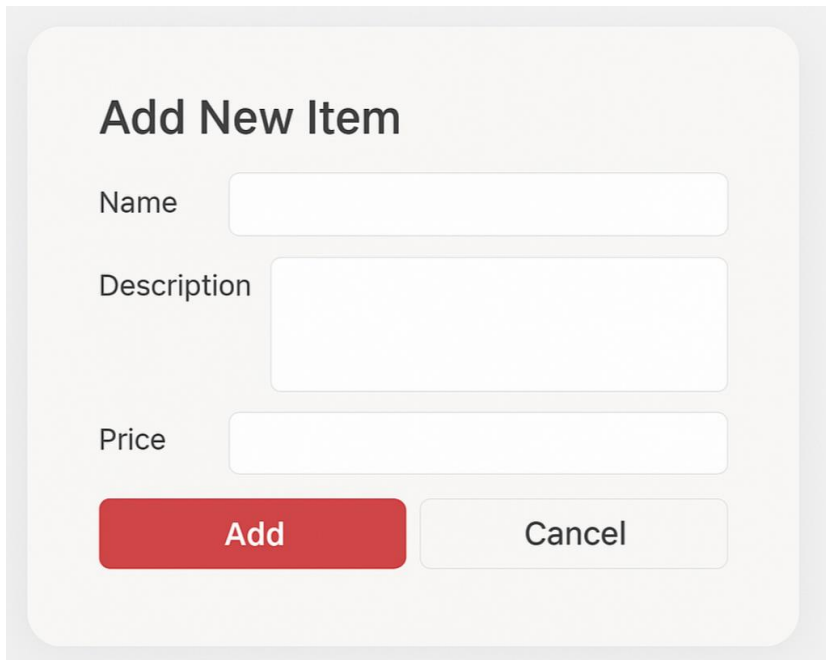
**Figure 4 → Menu Properties**

By clicking on add, delete or remove button, you can add employee type, or remove order type from the list, or delete the entire menu

Directs the  
user into the  
main menu

“Back” will bring the user back to previous window.

#### 4.4.1 Add New Menu Item



The 'Add New Item' form is a light gray rounded rectangle. It contains three input fields: 'Name', 'Description', and 'Price'. Below these fields are two buttons: a red 'Add' button and a white 'Cancel' button with a gray border.

**Add New Item**

Name

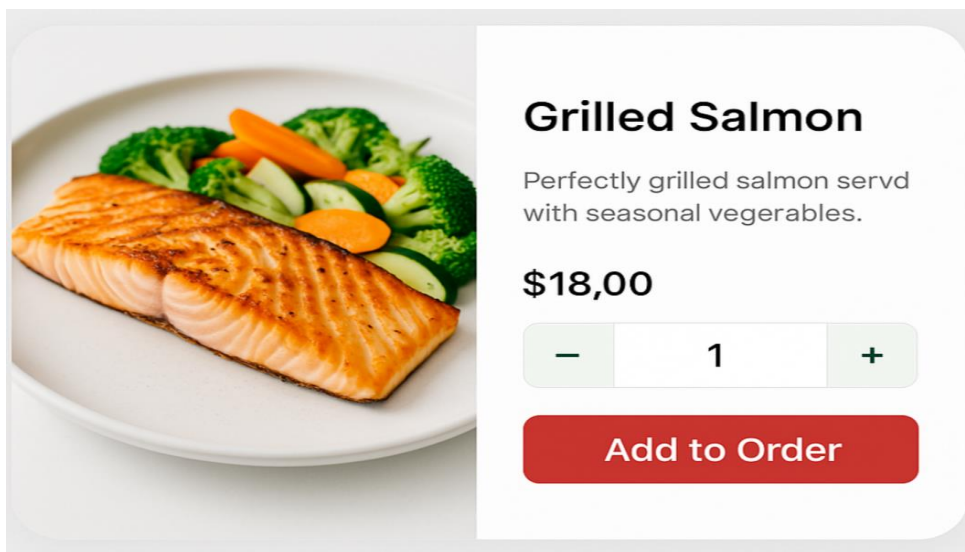
Description

Price

**Add** **Cancel**

**Figure 5 – Add new Item**

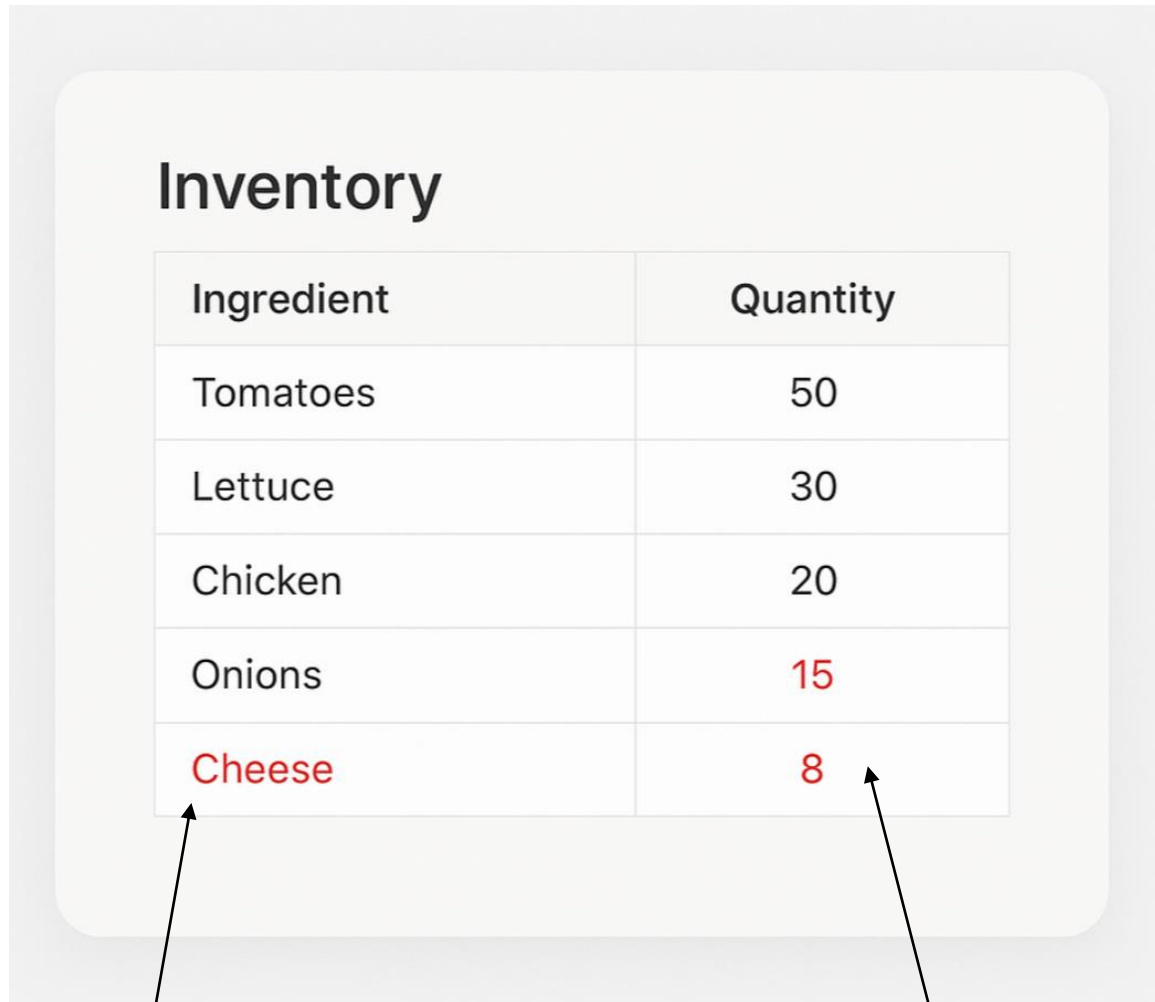
#### 4.4.2 Add To Order



**Figure 6 – Add to Order**

## 4.5 Manage Inventory

The user clicks on “Manage Inventory” button, and following window will be displayed.



Ingredient	Quantity
Tomatoes	50
Lettuce	30
Chicken	20
Onions	15
Cheese	8

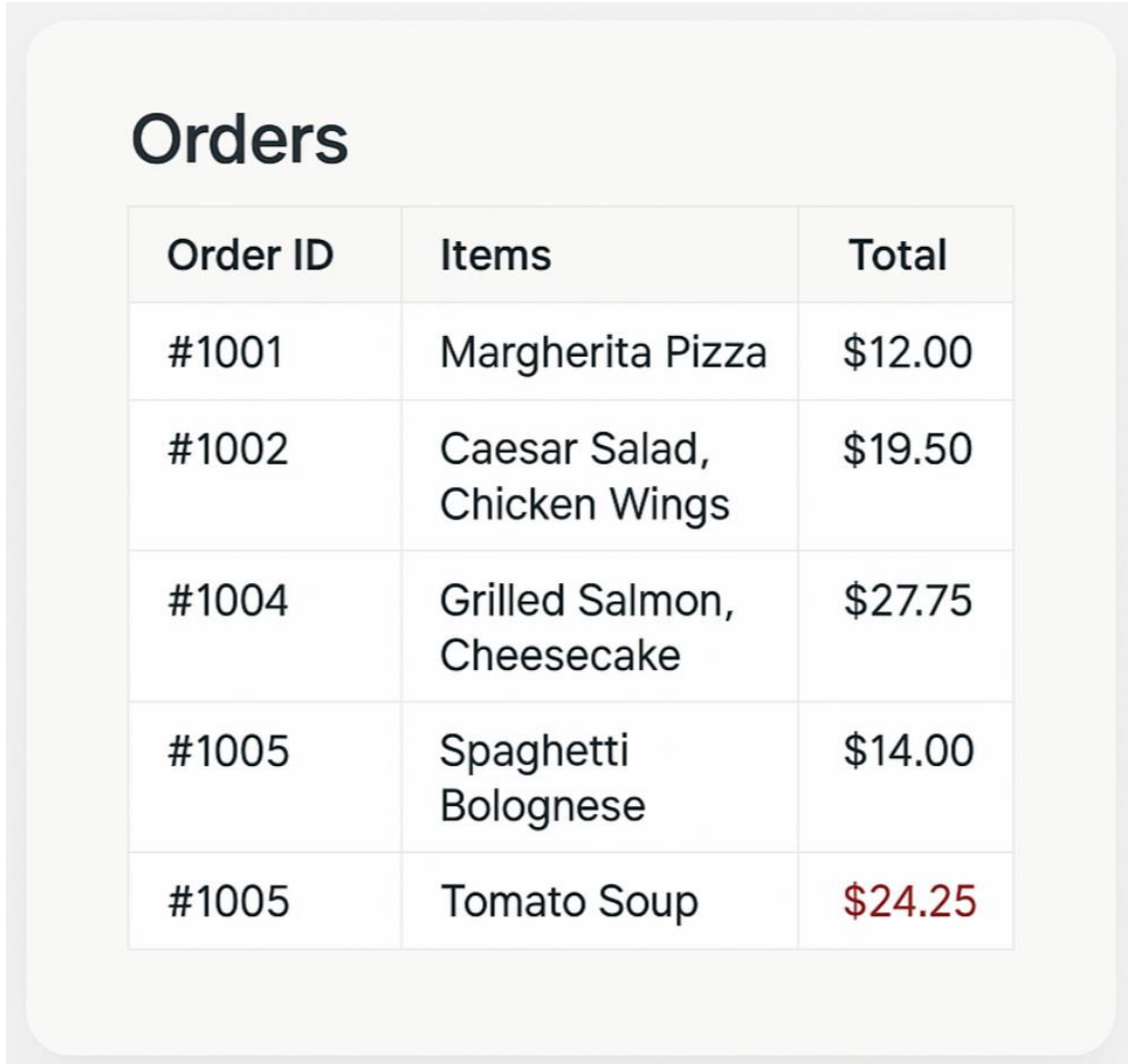
**Figure 7 - Manage Inventory**

Inventory item  
type

Inventory item  
count

## 4.6 Generate Reports

Shows the entire orders



Order ID	Items	Total
#1001	Margherita Pizza	\$12.00
#1002	Caesar Salad, Chicken Wings	\$19.50
#1004	Grilled Salmon, Cheesecake	\$27.75
#1005	Spaghetti Bolognese	\$14.00
#1005	Tomato Soup	\$24.25

**Figure 8 – Generate Reports**

# COCOMO Analysis

Function Point Calculator					Total	Factor	FP
The Madison Utilities, Department of Computer Science, James Madison University					101	0.83	84

Direct Measure	Count			Weighted Measure
	Simple	Average	Complex	
External Inputs (EIs)	2	2	1	20
External Outputs (EOs)	2	2	1	25
External Inquiries (EQs)	1	1	0	7
Internal Logical Files (ILFs)	2	2	1	49
External Interface Files (EIFs)	0	0	0	0

Clear

Value Adjustment Factor	0	1	2	3	4	5
The system requires reliable backup and recovery.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Specialized data communications are required.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are distributed processing functions.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Performance is critical.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The system runs in an existing, heavily utilized operational environment.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The system requires on-line data entry.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The on-line data entry requires transactions over multiple screens/operations.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ILFs are updated on-line.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The inputs, outputs, files or inquiries are complex.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The internal processing is complex.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The code is designed to be reusable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Conversions /installation are included in the design.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The system is designed for multiple installations in different organizations.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The system is designed to facilitate change and ease of use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

## Mike's Basic COCOMO Calculator!

Enter the number of estimated lines of code and the calculator will determine how much time and how many people will be needed!

4 Thousands of Lines of Estimated Code.

Perform Calculation

### Organic Values

Number of Months Needed: 6.0623608 Number of People Needed: 2

### SemiDetached Values

Number of Months Needed: 6.3232443 Number of People Needed: 2

### Embedded Values

Number of Months Needed: 6.4142789 Number of People Needed: 3