

**Bakery Management System**

**Link:** [**https://github.com/mmn-siddiqui/Bakery-Management-System**](https://github.com/mmn-siddiqui/Bakery-Management-System)

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# **Introduction**

## **Project overview:**

## Our project is a “Bakery Management System”. This software provides a complete business solution to run a bakery. The project includes multiple features like add, update, and delete products, billing system, check on stock, and user feedback option.

## Our project comprises of user interface which will be used to manage products and a database. All the data will be stored in the database manually like item picture, its name, quantity, flavor, etc. There will be a login panel where the admin of the bakery can manage the bakery items and can see user's feedback. When the admin adds an item to the inventory the database is updated with products quantity and price so that it can be shown inside the system and when a purchase is made a general invoice with the item name and the quantity is created and the quantity of an item purchased will be subtracted from the database. And the system would be able to generate a report about the monthly sales.

## **Project deliverables:**

## The following are the deliverables for this project:

## Preliminary Project Plan ----------------------- Deliverable 1

## Requirements Elicitation ----------------------- Deliverable 2

## Requirements Analysis ----------------------- Deliverable 3

## Architectural Design ----------------------- Deliverable 4

## Object/Component Design ---------------------- Deliverable 5

## Coding ---------------------- Deliverable 6

## Testing ---------------------- Deliverable 7

1. **Preliminary Project Plan:** A text and a presentation describing the project's formal specifications, both functional and non-functional. This deliverable ensures that the group is developing a system that strongly matches the Client's requirements. Before allowing the community to continue with the design, this deliverable helps the Client to change and fix things that were miscommunicated or ignored.
2. **Requirements Engineering:** This is the Group's opportunity to explain to the Client how the idea will be executed. Based on the understanding of the criteria defined in the previous deliverable, this deliverable is completed by the Group's most technical and experienced member.
3. **Requirements Analysis:** This deliverable brings the project to a conclusion. The Group provides the final documentation based on the specifications defined.
4. **Architectural Design:** A database containing the necessary tables for the inventory system. On the bakery servers, a database with the tables required in the system to store inventory information must be set up.
5. **Object/Component Design:** An administrative interface for adding, updating, deleting, and searching inventory, allowing the system administrator to add information to the inventory system for any product that exists in the bakery and to maintain an electronic record of the bakery's resources.
6. **Coding:** The entire project will be implemented using all of the required features.
7. **Testing:** We test the program ourselves and conduct unit testing in this deliverable. We offer this program to the client for feedback after we have completed unit testing.

## **Evolution of this document:**

## This is a preliminary document with the scope of the project.

## **References:**

## **Definitions, Acronyms, and Abbreviations:**

## **ERP (Enterprise Resource Planning):** It's a business process management software that manages and integrates a company's all operations.

## **Invoice:** A list of goods sent, or services provided, with a statement of the sum due for these, a bill.

* **CRUD (Create, Retrieve, Update, Delete):** Add, update, view, delete product operations on software.
* **NFR(Non-Functional Requirement Framework):** A framework to analysis non-functional requirements.
* **KPI(key performance indicator):** Provides  quantifiable measure of performance over time for a specific objective.
* **Prototype:** Blueprint of the product to be made.
* **UI:** User Interface

# **Summary of Projects**

This software will provide a complete business solution to run a bakery. This system would address all the shop challenges in one integrated system, including inventory, processing, distribution, and accounting. It will be designed to store all information about bakery products, allow for quick product searches, direct reviews, and the creation and management of inventory.

## **Description of Domain:**

It will be a Desktop Application and can be used within the bakery.

## **Stakeholders:**

Ideal bakery, Dope Programmers (Our Team)

# **Project Requirements**

# **Functional Requirements:**

* The system shall provide a convenient interface for User Registration, Product Categories, Items Search, and Payment.

# A guest user can only view items. For any kind of shopping, he/she must have registered.

# The system should be able to show bakery products in their respective categories.

# The system shall be capable to generate invoice bills.

# The system shall provide a Password Recovery facility through the customer's email id.

# The system shall provide diﬀerent options for sales (10%, 15%, and 20%) on various bakery items.

# If an item is not available (out of stock), and a customer selects it, an alert should be shown to the customer that this item is out of stock. Managing your stock eﬃciently is required for this task.

# The search interface shall be convenient to search for any bakery item.

# Every order shall be allocated a unique identiﬁer (ORDER\_ID).

# The systems shall have both admin and user views. i.e. Administrator View and User View.

# **Non-Functional Requirements:**

# The system must calculate the price of the order of product.

# The system should process the order of the bakery in real-time.

# The system design should be responsive.

# The system must be friendly, and any person can understand the process of the system. Well form interfaces, help guides will be the advantage of usability.

# The products are stored in the database so that the user can easily see its product list.

# The admin will be able to see the sales report in the report section which includes daily, monthly & total reports.

# The user can also export these reports in excel format.

# **How To Approach:**

* Start with the old design.
* Establish thresholds based on your product KPIs.
* Run usability testing on competitor products.
* Instead of testing usability on a finalized product, we will use prototypes.
* Example of usability requirements:
* Make them measurable and testable.
* Instead of entire products set requirements for system components.
* Link NFR with business objectives.
* Consider third-party limitations.
* Consider architectural limitations.
* Look for existing standards and guides.

**Performance and Scalability:** It will perform operation in milli-seconds, and it will decrease lots of workloads.

**Portability and Compatibility:** Our Application will be working on Desktops with Windows OS.

**Reliability, Availability, Maintainability:** The chances of failure of applications are approximately zero because they are based on highly developed algorithms and technology. And users will take seconds to perform task as compared to manual work.

**Security:** System and Data are protected with algorithms we used to program our application.

**Localization:** The system will match all the local aspects.

**Usability:** It will be really easy to use this application as it’ll have very simple and clear UI.

# **Use Case Diagram**

Chart, diagram

Description automatically generated

Diagram

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# **UML Diagram**

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Diagram

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# **Sequence Diagram**

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# **ERD**

Diagram

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# **Project Prototype**

# **Graphical user interface, application, Teams Description automatically generated**

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# **Graphical user interface, application Description automatically generated**

# **Graphical user interface, application Description automatically generated**

# **Graphical user interface Description automatically generated**

# **Why Choose Our System?**

Our Product will be better than other available products because we follow some standard rules for making things unique for customer satisfaction which is as follows:

* **We keep room for customization:** As you can see many baker’s shops fixed their menu which will lose them out from their business as result. If we have to win the competition, we keep a tiny customized menu which will feel special for customers.
* **We have a good team for communication:** as you can see there are lots of bakers where staff and management are lack discipline with low knowledge where they are not able to communicate customer and make their mind to buy products easily. So, in that case, our staff will be well trained to convince the customer to buy at least one product. Which shows a good salesman to win the business.
* **The offer to the customer which they will not deny accepting:** As you know there are so many bakers which fixed their price and make them expensive to show that their product is high-quality products which make customer mind that if the product is expensive then the product is good some time customers are not able to buy that product. So, our team decided to make the product cost as a deserving cost which will make the business lose neither do un justifications with the customer so they can’t deny or refuse to buy our product. for which we can use social channels or window art to display our product with the unique offers which they are not able to refuse.
* **Top Customer Service:** This is the trickiest thing which can attract customer more than any other channels by providing high-quality service with the customer from the entrance to exit platform like with special greeting at the entrance, floor guider which will guide customer at every single step which product is best to buy, at the exit point for seeing off the customer with greetings. Or you can remind the birthday by greeting them on their birthday to approach them to come back for purchasing again.
* **Be unique to your product:** As you know other bakers’ menu are too congested and complex which become complicated to the customer for buying. So, we make tiny customization as well as with unique highlighted products which you can make specialty for your business or shop.

These things which discuss above belong to the customer satisfaction point which will obviously make us unique from others and prove us different and better from other competitors. The things which need to be highlighted is that any product which is the part of your business must be unique as well as made up of high-quality standard material or ingredients no matter how much cost it takes to build, we don’t need to compromise with our product quality because in bakery business quality is the most important part if the quality of your product is low your business will be in loss.

Most Highlighted point:

* Quality Products that meet high standard material’s/ingredients
* Cost to cost vary product with low margin of profit.
* High standard management with top quality service
* Unique showcase of product display with customized menu

These are the most essential parts which will help our business better than others. And the most justified explanation that why customers will choose our system.