# **EXAMPLE SET UP**

# **1. Introduction**

In the rapidly evolving pace of the food industry, the integration of technology has become imperative for restaurants to stay competitive and meet customer expectations. The Relaxing Koala, a medium-sized restaurant located in Hawthorn, has recently expanded its business by acquiring the adjacent property, thereby increasing its capacity from approximately 50 to 150 customers. However, the day-to-day operations of the Relaxing Koala have been predominantly low-tech and manual, particularly in areas such as order management, kitchen coordination, and accounting.

Recognizing the limitations of their current operational approach, the owners of the Relaxing Koala acknowledge the necessity of modernizing their processes to accommodate the increased demands of the expanded business. To address this need, they are considering the implementation of an information system to streamline their daily operations. After consulting with similar-sized restaurants, the owners have outlined specific requirements for the new system, including support for reservations, order management, kitchen communication, invoicing, payment processing, and basic statistical analysis of menu items.

Additionally, the owners aim to enhance customer engagement by making menus available online, enabling customers to view offerings, place take-away orders, and potentially arrange delivery services. While other restaurants may have incorporated additional features into their information systems, the owners of the Relaxing Koala have opted to focus on the essential functionalities for now, with the possibility of future expansion.

As part of the project initiation phase, the owners are tasked with articulating a detailed specification outlining the goals and requirements for the development of the restaurant information system. Swinsoft Consulting has been engaged to assist in this process and to develop a tailored Restaurant Information System (RIS) that meets the unique needs of the Relaxing Koala.

# **2. Project Overview**

The expansion of the Relaxing Koala restaurant necessitates the adoption of an advanced information system to replace existing manual processes. The RIS, developed by Swinsoft Consulting, will integrate several components to improve efficiency and customer engagement:

## 2.1 Domain Vocabulary:

* **RIS:** Restaurant Information System
* **Website:** promote the restaurants:

- Publishing news, online menu (including prices, ingredients and chef's recommendations),

- Share discount codes (optional),

- Obtain customers feedbacks (optional, for improvement).

* **Online POS System:** Handling customer services:

- Record, manage and monitor seat reservation, allow customers to make online reservations,

- Enable online ordering, obtain and categorising type of dining (dine in, pickup and delivery), and customer's notice (i.e., allergy), inform staffs at customers' dining selection,

- Handling online payment (validate, process and record transaction data for further usages).

* **Reservations:** Booking slots for customers to dine in at the Relaxing Koala.
* **Order management:** Handling and processing customer orders for food and beverages.
* **Kitchen communication:** System for transmitting orders from the front end to the kitchen staff.
* **Invoicing:** Generating bills for the orders placed by customers.
* **Payments:** Processing transactions for the orders and services rendered.
* **Menu items:** List of food and beverage options available at the restaurant.
* **Statistics:** Gathering data on customer orders and preferences for analysis.
* **Online menus:** Digitally accessible versions of the restaurant's menu.
* **Take-away orders:** Orders placed by customers for food to be taken off-site.
* **Delivery:** Service of transporting orders to customers' locations.

## 2.2 Goals:

* Streamline restaurant operations to improve efficiency.
* Enhance customer experience through smoother service.
* Lay the groundwork for future scalability of the business.
* Automate processes including reservations, order taking, kitchen communication, payment processing and food or drink preparation
* Provide insights through basic statistical analysis of menu items.

## 2.3 Assumptions:

* Staff Training: It is assumed that the staff members are familiar with basic computer usage and are trainable in using the new RIS. All staff member are reliable to take order, process payment and prepare food, drinks.
* Operational Expertise: The restaurant staff possess a fundamental understanding of restaurant operations, including order taking, kitchen coordination, and customer service. This expertise will facilitate the adoption of the new system and ensure efficient integration into existing workflows.
* Customer Familiarity: It is assumed that the restaurant's clientele are accustomed to modern technology usage in dining establishments. This includes the expectation of digital ordering systems, online menu browsing, and electronic payment options.
* Infrastructure Compatibility: The assumption is that the restaurant's physical infrastructure, such as network connectivity and hardware devices (i.e., POS terminals, tablets, online menu, food-stocks), is compatible with the requirements of the RIS. This ensures seamless integration and minimizes the need for extensive infrastructure upgrades or modifications.
* Data Security: It is assumed that the restaurant owners prioritize the security and privacy of customer data within the RIS. Measures such as data encryption, access controls, and regular backups are expected to be implemented to safeguard sensitive information and comply with relevant regulations.
* Scalability: The assumption is made that the RIS is designed to accommodate future growth and expansion of the restaurant business.

## 2.4 Scope:

* Reservation handling: Implementing a system for booking and managing table reservations.
* Order processing: Facilitating the flow of orders from customers to the kitchen.
* Kitchen communication: Establishing a seamless method for transmitting orders to kitchen staff.
* Payment management: Handling transactions and generating invoices and receipts.
* Basic statistical analysis: Collecting data on menu item popularity and customer preferences.
* Online menu availability: Making menus accessible digitally for customer convenience.
* Potential future enhancements: Considering options for expanding services, such as delivery.

## 2.5 Constraints:

* Budgetary limitations: Financial constraints may influence the scope and features of the RIS.
* Time constraints: Project completion must adhere to a specified timeline.
* Compatibility requirements: The RIS must integrate seamlessly with existing hardware and software systems.

## 2.6 Stakeholders:

* Owners and management of the Relaxing Koala: Responsible for overall project direction and decision-making.
* Restaurant staff: End-users who will interact with the RIS on a daily basis.
* Customers: End-users who will benefit from the improved services facilitated by the RIS.
* Swinsoft Consulting: Development partner tasked with implementing the RIS according to requirements and specifications.Top of Form

Bottom of Form

# **3. Problem Domain**

## 3.1 - Pain Points

* Record keeping: Cumbersome manual processes and duplicated records.
* System access: Limitations in concurrent user access.
* Data analytics and tracking: Inadequate provisions for management to track data on customer preferences and sales trends.

## 3.2 - Domain Entities

* Customer
* Online systems
* Order
* Menu items
* Reservation
* Payment
* Staff member
* Food and drink materials

## 3.3 - Actors

* Website
* Online POS system
* Restaurant owner(s)
* Manager
* Barista (Front of House member)
* Chef and Cooks (Back of House member)
* Waiter (Front of House member)
* Cashier (Front of House member)
* Customer (Dine in, pickup or delivering client)
* Delivery

## 3.4 - Tasks

1. Order taking and processing
2. Reservation management
3. Kitchen coordination
4. Payment processing
5. Customer service
6. Menu management
7. Staff management
8. Reporting and analytics
9. Online presence management

Top of Form

Bottom of Form

**4. Functional Requirements and Task Descriptions**

1. \*\*Task 1: Presale Discussion\*\*: Engage with potential customers to understand their preferences and requirements, laying the groundwork for personalized service.

2. \*\*Task 2: Book a Test Drive\*\*: Facilitate the scheduling of test drives for interested customers, ensuring a seamless experience.

3. \*\*Task 3: Sell Vehicle\*\*: Guide customers through the vehicle selection process, manage pricing negotiations, and handle documentation for seamless transactions.

4. \*\*Task 4: Generate Sales Report\*\*: Compile comprehensive reports on sales performance, revenue, and commissions to inform strategic decision-making.

5. \*\*Task 5: Process Payment\*\*: Efficiently handle payment processing, ensuring security and compliance with industry standards.

6. \*\*Task 6: Stocktake\*\*: Conduct regular stocktakes to maintain inventory accuracy and optimize supply chain management.

7. \*\*Task 7: Updating a Customer's Information\*\*: Keep customer records up-to-date to personalize service delivery and maintain customer satisfaction.

8. \*\*Task 8: Book a Service\*\*: Schedule service appointments for vehicles, ensuring timely maintenance and customer satisfaction.

9. \*\*Task 9: Feedback\*\*: Collect and analyze customer feedback to continuously improve service quality and customer experience.

**5. Workflow**

The workflow outlines the sequence of tasks involved in restaurant operations, providing a visual representation of the interactions between actors and system components.

**6. Data Model**

**7. Quality Attributes of System**

**8. Other Requirements**

Product-level requirements dictate adherence to Swinsoft Consulting's user interface guidelines, while design-level requirements focus on correctness, completeness, and efficiency of the system architecture.

**9. Validation of Requirements**

**10. Possible Solutions**

Three possible solutions are proposed to address the requirements of the RIS: a staff-oriented application-based system, a customer-oriented self-service system, and a cloud-based web application. Each solution offers unique benefits and caters to different user preferences and operational needs within the restaurant environment.

In conclusion, the development of a Restaurant Information System for the Relaxing Koala presents an opportunity to revolutionize restaurant operations, enhance customer experience, and drive business growth. By leveraging technology to automate tasks, improve efficiency, and gain valuable insights, the Relaxing Koala can position itself for long-term success in the competitive food industry landscape.

**GENERATE INFO**

**7. Quality Attributes of System**

**7.1. Security**

Security given the nature of handling customer information and financial transactions, ensuring robust security measures is paramount for the Relaxing Koala's Restaurant Information System (RIS). The software must be designed to prevent unauthorized access and protect against fraudulent activity.

To meet this quality attribute, the system must satisfy the following criteria:

* **Stringent Access Control**: Implementing stringent access control mechanisms to restrict access to the Relaxing Koala's Restaurant Information System (RIS) ensures that only authorized users can access the system. This includes enforcing strong authentication methods and requiring unique user credentials for each staff member.
* **Data Encryption**: Utilize encryption protocols to secure sensitive data, such as customer payment information and personal details, during transmission and storage.
* **Role-Based Access Control (RBAC)**: Enforcing RBAC ensures that each user is granted access only to the functionalities relevant to their role within the restaurant. For example, waitstaff may only have access to order management features, while managers have access to more comprehensive reporting tools.
* **Compliance with Data Protection Laws**: Storing client information, invoices, and other sensitive data in compliance with Australian data protection laws is crucial for ensuring data confidentiality and integrity.

By adhering to these regulations, the system protects customer privacy and mitigates the risk of data breaches or unauthorized access.

**7.2. Usability**

The current manual processes at Relaxing Koala have highlighted usability challenges, leading to staff and customer dissatisfaction. A user-friendly system is essential for promoting positive user experiences and increasing system adoption across the restaurant.

To meet this quality attribute, the system must adhere to the Swinsoft UI/UX design guidelines document, satisfying the following criteria:

* **Intuitive Navigation and Interface Design**: Adhering to Swinsoft's UI/UX design guidelines ensures that the system features intuitive navigation and interface design, promoting ease of use for staff members. Clear menu structures and ordering processes minimize user confusion and enhance overall usability.
* **Accessibility Features**: Implementing accessibility features within the system accommodates users with diverse needs (e.g., disabilities) and preferences, ensuring that all staff members can effectively interact with the RIS. This includes features such as keyboard navigation options and alternative text for images, enhancing usability for users with disabilities.

**7.3. Reliability**

Reliability is crucial for ensuring uninterrupted restaurant operations and preventing disruptions that could impact customer satisfaction and revenue. The system must be dependable, available when needed, and consistently deliver accurate information.

To meet this quality requirement, the system must:

* **High Uptime**: Maintaining an uptime of 99% during business hours ensures that the RIS is consistently available for staff and customers, minimizing disruptions to restaurant operations. This reliability is essential for preventing downtime that could impact customer satisfaction and revenue.
* **Minimal Downtime**: Proactively minimizing downtime to no more than 10 minutes during business hours ensures that any unforeseen issues are quickly addressed, minimizing disruptions to service. By implementing proactive measures, such as regular maintenance and system monitoring, the RIS maintains reliability and availability.
* **Accuracy and Integrity**: Guaranteeing the accuracy and integrity of information retrieval processes ensures that customers receive correct orders and invoices 100% of the time.

This reliability measurements instil trust in the system and enhances overall customer satisfaction.

**7.4. Performance**

In a restaurant environment, responsiveness and efficiency are key factors in delivering satisfactory customer experiences. The system must be optimized to handle user requests quickly and efficiently, especially during peak hours.

To meet this quality requirement, the system must:

* **Responsiveness**: Ensuring that the system responds to user interactions within one second maintains responsiveness, even during peak hours. This quick response time enhances the overall user experience and prevents user frustration.
* **Efficient Data Queries**: Handling large data queries, such as fetching menu statistics or generating reports, within 20 seconds prevents delays and ensures that staff members can access necessary information in a timely manner.
* **Seamless Browsing Experience**: Rendering frontend screens to users within 200 milliseconds provides a seamless browsing experience, promoting efficiency and usability.

By optimizing performance, the RIS enhances customer satisfaction and staff productivity.

**7.5. Portability**

With the increasing prevalence of mobile devices and varying user preferences, ensuring portability across multiple platforms is essential for accommodating diverse user needs and enhancing accessibility.

To meet this quality requirement, the system must:

* **Compatibility with Multiple Platforms:** Supporting both mobile platforms (e.g., Android, iOS) and traditional desktop and laptop machines (e.g., Window, MacOS, Linux) ensures that users can access the system across a variety of devices. This compatibility enhances accessibility and accommodates diverse user preferences.
* **Responsive Design Principles:** Implementing responsive design principles ensures that the user experience remains consistent across different devices and screen sizes.

By adapting to various platforms, the RIS enhances usability and accessibility for all users.Top of FormBottom of Form