Student Guide – APT Project Definition

# Topic: Managing Custom Menus and Tables in Restaurants

# PART I

## 1. PERSONAL BACKGROUND

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## 2. APT Project Description

## Project Name: Personalized Menu and Table Management System for Restaurants

## Area(s) of Work: Software development, technological process management, service innovation

## Competencies:

## - Design and development of IT solutions

## - Requirements analysis

## - Information systems implementation

## - Technology project management

## 3. APT Project Rationale

# Relevance of the APT Project: The project seeks to address the needs of restaurants in the Metropolitan Region of Chile... optimizing service and resources.

# APT Project Description: This consists of the development of a web application with menu, inventory, table, order, and administrative panel functionality.

# Relevance of the project to the graduate profile: It is linked to skills in programming, project management, and process analysis.

# Relevance to professional interests: It allows for practical experience in technological solutions applied to the service industry.

# Development Feasibility: Feasible in one semester with a functional prototype, using available web frameworks and tools.

# PART II

## 4. Objectives

## General Objective: Develop a software system for managing personalized menus and controlling table service in restaurants, with the goal of optimizing customer service and improving operational efficiency.

## Specific Objectives:

## 1. Design and implement a web interface.

## 2. Develop an inventory module.

## 3. Implement table service control.

## 4. Create an administration panel.

## 5. Validate the prototype with simulated users.

## 5. Methodology

## The project will be developed using the Agile methodology (Scrum), in stages: mockup design, development, testing, and final delivery.

## For our development and evidence tracking, we will use the Kanban method, which allows for a more flexible workflow, as well as a visual representation through dynamic boards. These boards will include different stages, processes, weekly planning, feedback, and progress tracking. As progress becomes evident, certain tasks will be divided in order to achieve a better retrospective of the development process.

## 6. Evidence

|  |  |  |  |
| --- | --- | --- | --- |
| Type | Name | Description | justification |
| advance | Functional mockup | System visual design | Allows validation before development |
| advance | partial report | Document with progress | Evidence of the process |
| Final | Functional prototype | Web application with key functionalities | Main evidence of the project |
| Final | Final report | Document with analysis and results | Consolidates learning |

## 7. Work Plan

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| competence | Activity | Description | Resources | Duration | Responsible | Remarks |
| Software development | Requirements gathering | Identify key functions | PC, internet | 1 week | student | Mock interviews |
| Interface design | Mockup | Screen design | Figma, PC | 2 week | student | User validation |
| Programming | Front-end | Web interface construction | PC, frameworks | 4 week | student | Use HTML/CSS/JS |
| Programming | Back-end | Logical implementation and database | PC, local server | 4 week | student | Use Node.js/PostgreSQL |
| Project management | Evidence | System validation | PC, prototipe | 2 week | student | Feedback iterations |
| Communication | Final report | formal document | PC, Word | 2 week | student | formal delivery |

**User Stories - Detailed**

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Description – User Story** | **Role/Tag** | **Acceptance criteria** |
| HU1 | As a customer, I want to view the menu online and customize my order with products to adjust it to my preferences. | Costumer | The menu must display name, price, and availability according to selected products and ingredients. |
| HU2 | As an administrator, I want to manage the menu and prices to keep it updated. | Admin | The administrator can create, edit, and delete dishes. |
| HU3 | As a customer, I want to see an interactive table map to identify availability. | Costumer | The map must be available at all times to see which tables are occupied or unoccupied. |
| HU4 | As a customer, I want to select a table from the map to reserve my place. | Costumer | - Tables must be marked as Available (Green), Occupied (Red), and Reserved (Yellow).  - Once selected, the reservation must be confirmed. |
| HU5 | As an administrator, I want to register and manage table information (number, capacity, and status) to organize reservations. | Admin | - Each table must have attributes: number, capacity, and status.  - Ingredients/products must be registered and available for consultation. |
| HU6 | As a waiter, I want to register, update, and close orders in the system to maintain clear control and avoid mistakes. | Waiter | The order must show its status: Open, In preparation, Delivered, Closed. |
| HU7 | As an employee with basic knowledge, I want a simple and intuitive interface so I can use the system without difficulty. | System | The interface must be simple and easy to use, showing only the essential information for an employee. |
| HU8 | As an administrator, I want the inventory to automatically update with each order to avoid selling dishes without available ingredients. | Admin | - Each order deducts the corresponding ingredients.  - The dish is blocked in case of no stock. |
| HU9 | As an administrator, I want the system to respond quickly and be available during peak hours. | System | The system response time for any critical operation (register order, check inventory, process reservation) must be ≤ 2 seconds. |
| HU10 | As a customer, I want to access the system from any device (PC, tablet, or mobile) with responsive design. | System | - The design must automatically adapt to the device.  - Functionalities must be the same on Web/Mobile. |
| HU11 | As a user, I want my personal information to be protected through security standards. | System | - Connections must use HTTPS/TLS.  - Restricted access for unauthorized staff.  - Passwords must be encrypted. |
| HU12 | As an administrator, I want to register and manage system reports and summaries to make better decisions. | Admin | Reports must be exportable in PDF and Excel. |
| HU13 | As an administrator, I want the system to be available at least 99.9% of the time to ensure continuity. | System / Admin | - Uptime ≥ 99.9%.  - Constant monitoring.  - Alerts in case of downtime. |

## 8. Interactive Visual Board – Kanban Model

