**Discovery**

# WEB APPLICATIONS

Gonzalez Hernández Cruz Omar.
Cruz arredondo Jose David.
Pulido Larios Cristopher
Salas Figueroa Jesús Nahataen.

Universidad Tecnológica de Tijuana.
TSU. Tecnologías de la información.
Entornos virtuales y negocios digitales.
Teacher:DR. Parra Galviz Ray Burnet.

## I.  INTRODUCTION

**E**N The following works will showcase the project's progress and how each diagram performed.

## II.  FUNCTIONAL REQUIREMENTS:

### II-A.  PRODUCT MANAGEMENT:

Catalog: Display products with images, descriptions, and prices. Categorization: Organize products into categories and subcategories to facilitate search. Inventory: Manage inventory, display real-time availability. Related Products: Show related products to increase cross-selling.

### II-B.  USER EXPERIENCE:

Intuitive Navigation: User-friendly interface and intuitive navigation for users. Advanced Search: Advanced search function by name, category, price, etc. Search Filters: Allow users to filter products by different attributes. Shopping Cart: Functionality to add, remove, and modify products in the cart. Checkout Process: Integration with secure payment gateways for safe transactions. Purchase History: Allows users to view their purchase history and previous order details. Order Tracking: Function to track the order status in real-time.

### II-C.  SECURITY AND PRIVACY:

SSL and Data Security: SSL certificate for secure connections and user data protection. Privacy Policy: Clearly display the privacy and data protection policy. Payment Security: Ensure the security of transactions and financial information.

### II-D.  ADAPTABILITY AND PERFORMANCE:

Responsive Design: Ensure the site is accessible and functional on mobile devices and tablets. Speed Optimization: Ensure fast loading times to enhance the user experience. Scalability: The site should be capable of handling increased traffic and product quantity seamlessly.

## III.  NON-FUNCTIONAL REQUIREMENTS:

### III-A.  LOADING TIME:

The page must load quickly to retain visitors.

### III-B.  SCALABILITY:

It must be able to handle a large number of visitors and concurrent transactions without performance degradation.

## III-C. RESOURCE USAGE EFFICIENCY:

Efficient utilization of server resources to maintain low operational costs.

## III-D. BROWSER COMPATIBILITY:

It should work smoothly on popular web browsers.

## III-E. MOBILE OPTIMIZATION:

Optimized user experience for mobile devices and tablets.

## III-F. UPTIME:

The store must be available 24/7, with minimal downtime for scheduled maintenance.

## III-G. CONSTANT BACKUP AND RECOVERY:

Regular backup system and effective data recovery procedures in case of failures.

# IV. USE CASE DIAGRAM

This diagram is used to identify and represent interactions between external actors and the system, helping to understand how users interact with the software and what its main functionalities are.
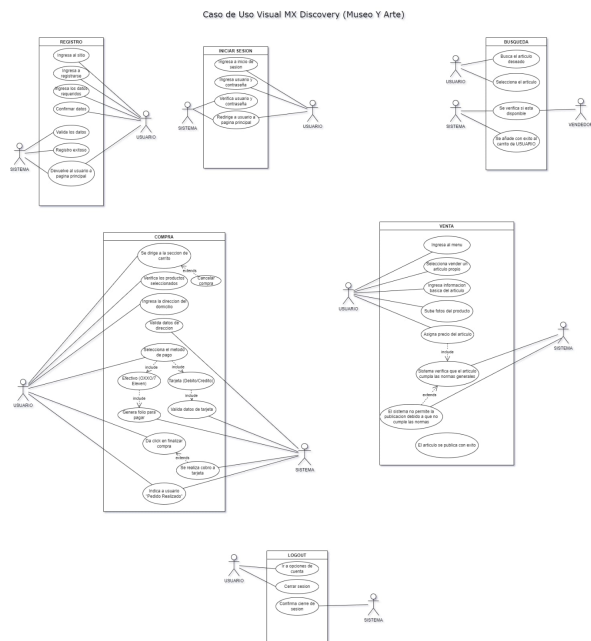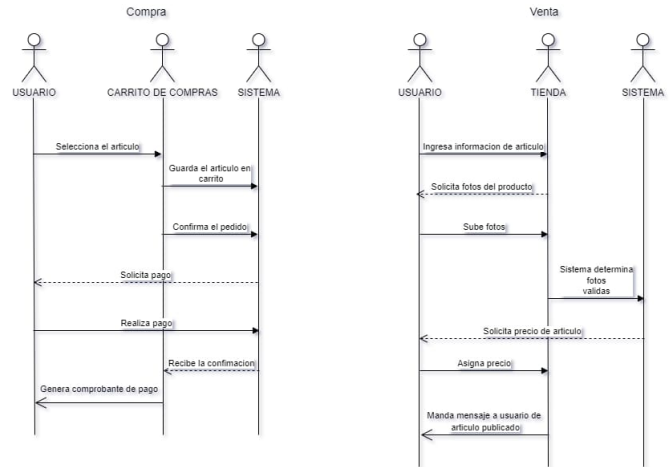


*CLICK HERE TO VIEW EXTENDED IMAGE*

# V. SEQUENCE DIAGRAM

These diagrams describe the interaction between objects in a system over time, showing how messages are passed between them and allowing an understanding of the execution flow of a process
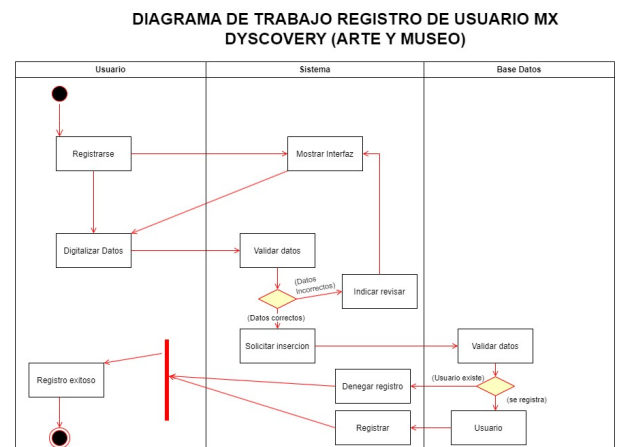


*CLICK HERE TO VIEW EXTENDED IMAGE*

# VI. WORK DIAGRAM (OR FLOW DIAGRAM):

"This graphical representation of the workflow in a specific process has allowed the team to accurately visualize tasks, decisions, and possible paths in the execution of a system or process."



*CLICK HERE TO VIEW EXTENDED IMAGE*

## VII. CLASS DIAGRAMS:

Here, we have drawn the fundamental pieces of our systems, as if we were assembling a puzzle, to understand how all the parts fit together.
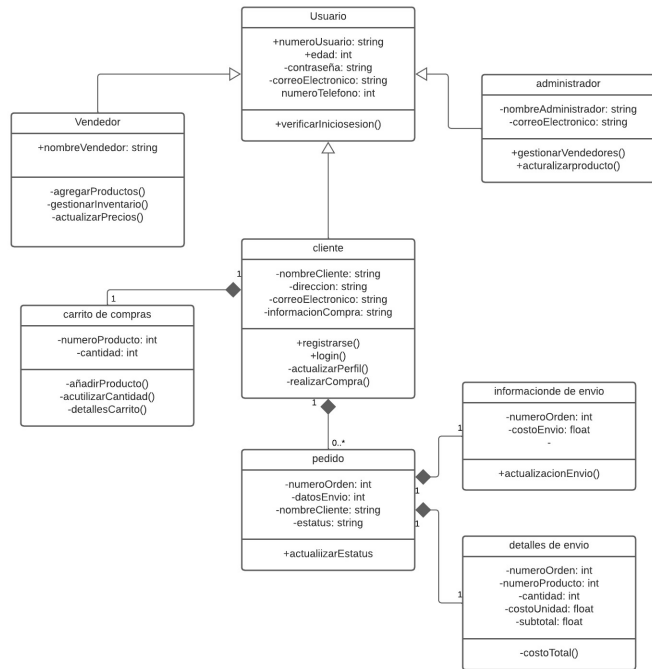


*CLICK HERE TO VIEW EXTENDED IMAGE*

## VIII. ENTITY-RELATIONSHIP DIAGRAM (ERD)

The ERD was developed with the purpose of organizing data and having a simpler framework when developing the website before moving directly to a database engine.
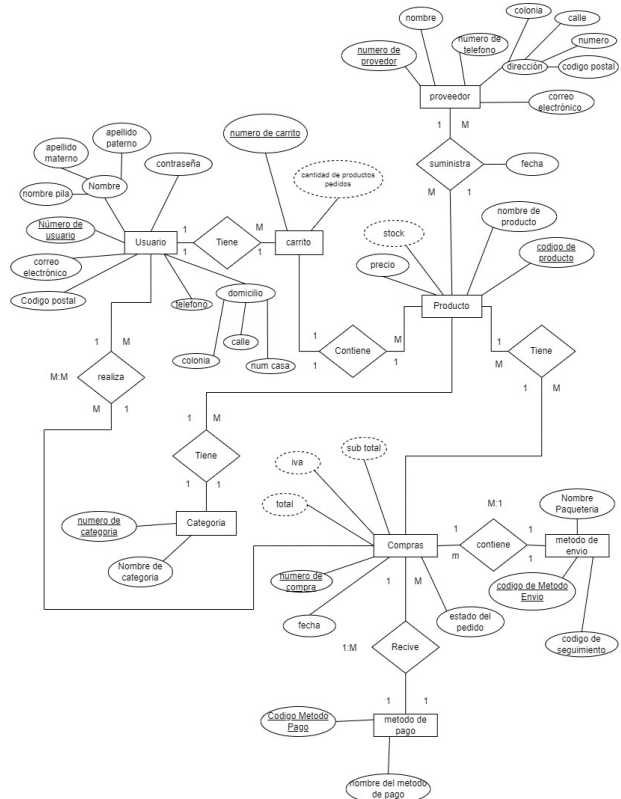


*CLICK HERE TO VIEW EXTENDED IMAGE*

RELATIONAL MODEL (RM):

In the context of databases, work has been done on defining the relational model, which specifies the structure and relationships between database tables, contributing to efficient data management.
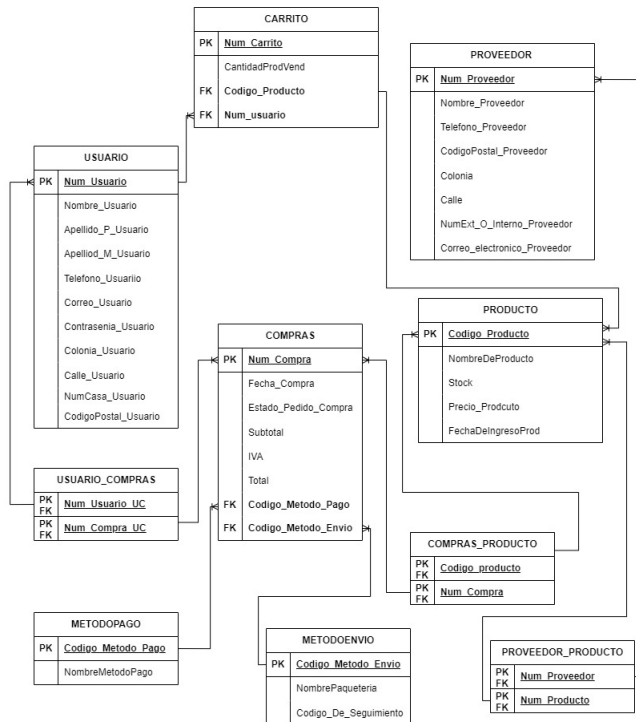


*CLICK HERE TO VIEW EXTENDED IMAGE*

REFERENCIAS

[1] D. Urrutia, "Qué es la arquitectura web | Definición y optimización," *Arimetrics*, 12 2022. [Online]. Available: https://www.arimetrics.com/glosario-digital/arquitectura-web

[2] J. G. Escobedo, "Modelos de arquitecturas Web - Sitio web de Javier García Escobedo (javiergarciaescobedo.es)," 9 2013. [Online]. Available: https://javiergarciaescobedo.es/despliegue-de-aplicaciones-web/76-arquitecturas-web/253-modelos-de-arquitecturas-web

[3] "Qué es MVC." [Online]. Available: https://desarrolloweb.com/articulos/que-es-mvc.html

[4] "¿Qué son los microservicios? | AWS." [Online]. Available: https://aws.amazon.com/es/microservices/#:~:text=Los%20microservicios%20son%20un%20

[5] "¿Qué es AOS? - Explicación sobre la arquitectura orientada a servicios - AWS." [Online]. Available: https://aws.amazon.com/es/what-is/service-oriented-architecture/

[6] Michaelstonis, "Modelo-Vista-Modelo de vista - .NET," 6 2023. [Online]. Available: https://learn.microsoft.com/es-es/dotnet/architecture/maui/mvvm

[7] "Arquitecturas sin servidor." [Online]. Available: https://aws.amazon.com/es/lambda/serverless-architectures-learn-more/

[8] Juanda, "Arquitectura de un SPA · Desarrollo de aplicaciones web." [Online]. Available: https://juanda.gitbooks.io/webapps/content/spa/arquitectura_de_un_spa.html

[9] V. T. L. P. P. D. M. L. Ariño, "Historia de la Web, 1.0, 2.0, 3.0 y 4.0 – Blog Marino Latorre," 3 2018. [Online]. Available: https://marinolatorre.umch.edu.pe/historia-de-la-web-1-0-2-0-3-0-y-4-0/

[10] "1.4 PLANIFICACIÓN DE APLICACIONES WEB." 3 2015. [Online]. Available: https://programacionweb1.wordpress.com/arquitectura/1-4-planificacion-de-aplicaciones-web/