**Avance 2 – Grupo 17 – Proyecto ISW 711**

Rafael Eduardo Alvarado Zunniga
Universidad Tecnica Nacional
ISW-711: Programacion en Ambiente Web II
Prof. MIARFID Nathalie Paniagua Lopez
28 de mayo de 2024

# Tabla de Contenidos

# Justificacion

La fuente de referencia utilizada para poder realizar el diseño inicial de la base de datos fue ChatGPT, el motivo por el cual se utilizo esta es debido a que es la que mas he manipulado, por lo cual mi estructura de prompts se adapta mas a esta inteligencia artificial y la misma entrega resultamos mas cercanos a la necesidad.

En este caso el diseño fue realizado completamente por mi persona, y por ultima instancia se paso por ChatGPT un listado de los modulos necesarios y el archivo .sql que se utilizo, de esta manera ChatGPT verifica si los tamaños asignados para las columnas o si las referencias estan correctas, ya que el contenido de las tablas esta estipulado en el documento de enunciado.

# Prompt Inicial

*With the following list of requirements, can you check if the following databse complies with them, and if the data sizing is appopriate considering the data that will be stored?*

*- User administration: users can be either clients, managers or admins, there can only be 1 admin or super user. required data is name, phone, email, address, birthdate and password (will be stored encrypted)*

*- Branch administration: Said mechanic shop has multiple shops around the country, so it sould be possible to have multiple locations registered to schedule appointments. Basic information is name, description, phone, address and email. A branch should have managers assigned, and a manager can only have one branch assigned.*

*- Service administration: The services are stuff that are done to the vehicle. These should have registered name, description, price, estimated time, and 2 extra spaces.*

*- Product administration: This mechanic shop also sells some accesories, like wiper-blades, cleaning supplies. These should have name, description, category, price, and 2 extra spaces. The category should be on a separate table.*

*- Schedule administration: Each shop should have a schedule for each day of the week, that way users can make appointments inside of said schedules. There should also exist a table to set which days or hours appointments cannot be made, due to holidays or perhaps to external factors, and mark if all or some services cannot be scheduled.*

*- Make appointments: Show a way to make appointments, this should be attached to a client.*

*- Billing: Finally make bills to services or products that are bought.*

*USE master;*

*GO*

```
CREATE DATABASE MecaAgenda ON
(NAME = MecaAgenda_dat,
   FILENAME = 'C:\db\MecaAgenda\mecaagenda_data.mdf',
   SIZE = 10,
   MAXSIZE = 50,
   FILEGROWTH = 5)
LOG ON
(NAME = MecaAgenda_log,
   FILENAME = 'C:\db\MecaAgenda\mecaagenda_log.ldf',
   SIZE = 5 MB,
   MAXSIZE = 25 MB,
   FILEGROWTH = 5 MB);
GO

USE MecaAgenda;
GO

CREATE TABLE Branches (
   BranchID INT PRIMARY KEY IDENTITY(1,1),
   Name NVARCHAR(100),
   Description NVARCHAR(255),
   Phone NVARCHAR(20),
   Address NVARCHAR(200),
```

```
    Email NVARCHAR(100)
);

CREATE TABLE Users (
    UserID INT PRIMARY KEY IDENTITY(1,1),
    Name NVARCHAR(100),
    Phone NVARCHAR(20),
    Email NVARCHAR(100) UNIQUE,
    Address NVARCHAR(200),
    BirthDate DATE,
    Password NVARCHAR(256),
    Role NVARCHAR(20) CHECK (Role IN ('Client', 'Manager', 'Admin')),
    BranchID INT NULL,
    CONSTRAINT FK_Users_BranchID FOREIGN KEY (BranchID) REFERENCES
Branches(BranchID)
);

CREATE TABLE Services (
    ServiceID INT PRIMARY KEY IDENTITY(1,1),
    Name NVARCHAR(100),
    Description NVARCHAR(255),
    Price DECIMAL(10, 2),
    EstimatedTime INT, -- in minutes
    ToolsRequired NVARCHAR(255),
```

```
    MaterialsNeeded NVARCHAR(255)
);

CREATE TABLE Categories (
    CategoryID INT PRIMARY KEY IDENTITY(1,1),
    Name NVARCHAR(100)
);

CREATE TABLE Products (
    ProductID INT PRIMARY KEY IDENTITY(1,1),
    Name NVARCHAR(100),
    Description NVARCHAR(255),
    CategoryID INT,
    Price DECIMAL(10, 2),
    Brand NVARCHAR(100),
    StockQuantity INT,Estrategia Avance 2_Equipo #
    CONSTRAINT FK_Products_CategoryID FOREIGN KEY (CategoryID) REFERENCES
Categories(CategoryID)
);

CREATE TABLE BranchSchedules (
    ScheduleID INT PRIMARY KEY IDENTITY(1,1),
    BranchID INT,
    DayOfWeek TINYINT, -- 1 (Monday) to 7 (Sunday)
```

```
    OpenTime TIME,
    CloseTime TIME,
    CONSTRAINT FK_BranchSchedules_BranchID FOREIGN KEY (BranchID) REFERENCES Branches(BranchID)
);

CREATE TABLE ScheduleExceptions (
    ExceptionID INT PRIMARY KEY IDENTITY(1,1),
    BranchID INT,
    Date DATE,
    StartTime TIME,
    EndTime TIME,
    ServicesAffected NVARCHAR(255), -- List of service IDs affected
    CONSTRAINT FK_ScheduleExceptions_BranchID FOREIGN KEY (BranchID) REFERENCES Branches(BranchID)
);

CREATE TABLE Appointments (
    AppointmentID INT PRIMARY KEY IDENTITY(1,1),
    ClientID INT,
    BranchID INT,
    ServiceID INT,
    AppointmentStart DATETIME,
    AppointmentEnd DATETIME,
```

*Status NVARCHAR(50),*

*CONSTRAINT FK_Appointments_ClientID FOREIGN KEY (ClientID) REFERENCES Users(UserID),*

*CONSTRAINT FK_Appointments_BranchID FOREIGN KEY (BranchID) REFERENCES Branches(BranchID),*

*CONSTRAINT FK_Appointments_ServiceID FOREIGN KEY (ServiceID) REFERENCES Services(ServiceID)*

*);*

*CREATE TABLE Bills (*

*BillID INT PRIMARY KEY IDENTITY(1,1),*

*AppointmentID INT,*

*Date DATE,*

*TotalAmount DECIMAL(10, 2),*

*PaidAmount DECIMAL(10, 2),*

*PaymentMethod NVARCHAR(50),*

*CONSTRAINT FK_Bills_AppointmentID FOREIGN KEY (AppointmentID) REFERENCES Appointments(AppointmentID)*

*);*

*CREATE TABLE BillItems (*

*BillItemID INT PRIMARY KEY IDENTITY(1,1),*

*BillID INT,*

*ItemType NVARCHAR(50) CHECK (ItemType IN ('Service', 'Product')),*

*ItemID INT,*

```
    Quantity INT,
    Price DECIMAL(10, 2),
    CONSTRAINT FK_BillItems_BillID FOREIGN KEY (BillID) REFERENCES Bills(BillID)
);
```

# Ajustes de Prompt

No se requirio realizar ajustes al prompt, ya que nada mas se utilizo ChatGPT para verificacion de la logica de la base de datos.

# Conclusiones

En lo que es el uso de ChatGPT, no lo utilizo mucho, y lo utilizo mas como a ultima instancia, para verificacion de datos o para el llenado de datos genericos, ya que si es cierto que con ChatGPT facilmente se puede realizar el disenno pero este no toma algunos requisitos o algunas cosas que se pueden volver dificultades a la hora de desarrollo.