UNIVERSIDAD SAN CARLOS DE GUATEMALA
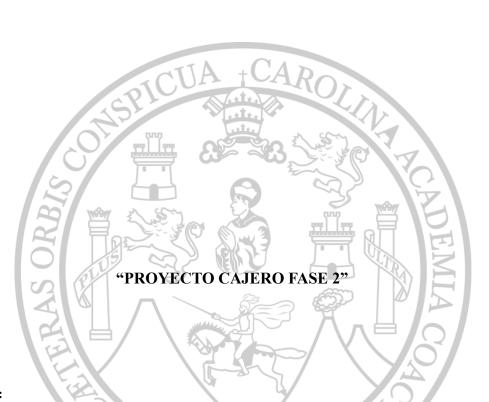**CENTRO UNIVERSITARIO DEL NORTE –CUNOR-**
CARRERAS DE INGENIERÍA
MANEJO E IMPLEMENTACION DE ARCHIVOS 1
ING. JOSE VÉLIZ

"PROYECTO CAJERO FASE 2"

NOMBRES:

Lorenzo Antonio López Tahuico –	**202140289**
Daimler`ss Hamiltón Ivánn Castro Aguilar –	**202146856**
Edin Estuardo Coy Pop –	**201942629**
Alex Estuardo Lem Cac –	**201942811**
Oscar René Gonzáles Rodrigues –	**201941809**

CARRERA: INGENIERIA EN CIENCIAS Y SISTEMAS

Viernes 20 septiembre 2024 Cobán A.V

Normalización del Cajero 1FN, 2FN, 3FN y creación de tablas en SQL SERVER

1) Creación de la normalización

Normalizacion de manejo de cajeros

Cliente	
Id_Cliente	Nombre
1	Lorenzo lopez

Cajero								
Id_Cajero	Estado	B200	B100	B50	B20	B10	B5	B1
1	1	5	5	5	5	5	5	5

Cuentas								
Id_Cuenta	Id_Cliente	No_cuenta	No_pin	Saldo	Monto_maximo	Id_tipo	Primer_inicio	Estado
1	1	333333333333333	3333	1000	2000	2	1	0

Login		
Id_Cliente	Fecha y hora	Id_cajero
1	16/09/2024 , 1:30pm	1

Modificacion			
Id_modificacion	Id_cuenta	Fecha y hora	tipo_modificacion
1	1	17/09/2024	PIN

Tipo de usuario	
Id_tipo	descripcion
1	Admin
2	Usuario

Inicialización		
Id_inicializacion	Id_cajero	fecha y hora
1	1	17/09/2024, 7:56

Saldo				
Id_saldo	saldo	Limite	Id_cajero	fecha
1	10000	30000	1	17/09/2024

Transacciones					
Id_Transaccion	Id_Cuenta	Tipo_Transaccion	Monto	Fecha_Transaccion	Id_cajero
1	1	Retiro	100	16/09/2024	1

2) Script

```sql
USE [bd_Cajero]
GO
/****** Object:  Table [dbo].[Cajero]    Script Date: 19/09/2024 16:56:12 ******/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[Cajero](
	[Id_Cajero] [int] IDENTITY(1,1) NOT NULL,
	[Estado] [bit] NOT NULL,
	[B200] [int] NOT NULL,
	[B100] [int] NOT NULL,
	[B50] [int] NOT NULL,
	[B20] [int] NOT NULL,
	[B10] [int] NOT NULL,
	[B5] [int] NOT NULL,
	[B1] [int] NOT NULL,
PRIMARY KEY CLUSTERED
(
	[Id_Cajero] ASC
```

```sql
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON
[PRIMARY]
) ON [PRIMARY]
GO
/****** Object:  Table [dbo].[Cliente]    Script Date: 19/09/2024 16:56:13 ******/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[Cliente](
        [Id_Cliente] [int] IDENTITY(1,1) NOT NULL,
        [Nombre] [varchar](200) NOT NULL,
PRIMARY KEY CLUSTERED
(
        [Id_Cliente] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON
[PRIMARY]
) ON [PRIMARY]
GO
/****** Object:  Table [dbo].[Cuenta]    Script Date: 19/09/2024 16:56:13 ******/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[Cuenta](
        [Id_Cuenta] [int] IDENTITY(1,1) NOT NULL,
        [Id_Cliente] [int] NOT NULL,
        [No_Cuenta] [varchar](16) NOT NULL,
        [No_pin] [varchar](4) NOT NULL,
        [Saldo] [int] NOT NULL,
        [Monto_maximo] [int] NOT NULL,
        [Id_tipo] [int] NOT NULL,
        [Primer_inicio] [bit] NOT NULL,
        [Estado] [bit] NOT NULL,
PRIMARY KEY CLUSTERED
(
        [Id_Cuenta] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON
[PRIMARY]
) ON [PRIMARY]
GO
/****** Object:  Table [dbo].[Inicializacion]    Script Date: 19/09/2024 16:56:13
******/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[Inicializacion](
        [Id_Inicializacion] [int] IDENTITY(1,1) NOT NULL,
        [Id_Cajero] [int] NOT NULL,
        [Fecha_inicializacion] [datetime] NOT NULL,
PRIMARY KEY CLUSTERED
(
        [Id_Inicializacion] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON
[PRIMARY]
) ON [PRIMARY]
GO
```

```sql
/****** Object:  Table [dbo].[Inicio_sesion]    Script Date: 19/09/2024 16:56:13
******/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[Inicio_sesion](
        [Id_Login] [int] IDENTITY(1,1) NOT NULL,
        [Id_Cuenta] [int] NOT NULL,
        [Fecha_inicio] [datetime] NOT NULL,
        [Id_Cajero] [int] NOT NULL,
PRIMARY KEY CLUSTERED
(
        [Id_Login] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON
[PRIMARY]
) ON [PRIMARY]
GO
/****** Object:  Table [dbo].[Modificacion]    Script Date: 19/09/2024 16:56:13
******/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[Modificacion](
        [Id_Modificacion] [int] IDENTITY(1,1) NOT NULL,
        [Id_Cuenta] [int] NOT NULL,
        [Fecha_Modificacion] [datetime] NOT NULL,
        [Tipo_modificacion] [varchar](100) NOT NULL,
PRIMARY KEY CLUSTERED
(
        [Id_Modificacion] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON
[PRIMARY]
) ON [PRIMARY]
GO
/****** Object:  Table [dbo].[Saldo]    Script Date: 19/09/2024 16:56:13 ******/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[Saldo](
        [Id_Saldo] [int] IDENTITY(1,1) NOT NULL,
        [Saldo] [int] NOT NULL,
        [Limite] [int] NOT NULL,
        [Id_Cajero] [int] NOT NULL,
        [Fecha_Saldo] [datetime] NOT NULL,
PRIMARY KEY CLUSTERED
(
        [Id_Saldo] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON
[PRIMARY]
) ON [PRIMARY]
GO
/****** Object:  Table [dbo].[Tipo_Usuario]    Script Date: 19/09/2024 16:56:13
******/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
```

```sql
GO
CREATE TABLE [dbo].[Tipo_Usuario](
    [Id_tipo] [int] IDENTITY(1,1) NOT NULL,
    [Descripcion] [varchar](50) NOT NULL,
PRIMARY KEY CLUSTERED
(
    [Id_tipo] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON
[PRIMARY]
) ON [PRIMARY]
GO
/****** Object:  Table [dbo].[Transacciones]    Script Date: 19/09/2024 16:56:13
******/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[Transacciones](
    [Id_Transaccion] [int] IDENTITY(1,1) NOT NULL,
    [Id_Cuenta] [int] NOT NULL,
    [Tipo_Transaccion] [varchar](100) NOT NULL,
    [Monto] [int] NOT NULL,
    [Fecha_Transaccion] [datetime] NOT NULL,
    [Id_cajero] [int] NOT NULL,
PRIMARY KEY CLUSTERED
(
    [Id_Transaccion] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON
[PRIMARY]
) ON [PRIMARY]
GO
ALTER TABLE [dbo].[Cuenta]  WITH CHECK ADD  CONSTRAINT [FK_Id_Cliente2] FOREIGN
KEY([Id_Cliente])
REFERENCES [dbo].[Cliente] ([Id_Cliente])
GO
ALTER TABLE [dbo].[Cuenta] CHECK CONSTRAINT [FK_Id_Cliente2]
GO
ALTER TABLE [dbo].[Cuenta]  WITH CHECK ADD  CONSTRAINT [FK_Id_tipo] FOREIGN
KEY([Id_tipo])
REFERENCES [dbo].[Tipo_Usuario] ([Id_tipo])
GO
ALTER TABLE [dbo].[Cuenta] CHECK CONSTRAINT [FK_Id_tipo]
GO
ALTER TABLE [dbo].[Inicializacion]  WITH CHECK ADD  CONSTRAINT [FK_Id_Cajero3] FOREIGN
KEY([Id_Cajero])
REFERENCES [dbo].[Cajero] ([Id_Cajero])
GO
ALTER TABLE [dbo].[Inicializacion] CHECK CONSTRAINT [FK_Id_Cajero3]
GO
ALTER TABLE [dbo].[Inicio_sesion]  WITH CHECK ADD  CONSTRAINT [FK_Id_Cajero] FOREIGN
KEY([Id_Cajero])
REFERENCES [dbo].[Cajero] ([Id_Cajero])
GO
ALTER TABLE [dbo].[Inicio_sesion] CHECK CONSTRAINT [FK_Id_Cajero]
GO
ALTER TABLE [dbo].[Inicio_sesion]  WITH CHECK ADD  CONSTRAINT [FK_Id_Cuenta] FOREIGN
KEY([Id_Cuenta])
REFERENCES [dbo].[Cuenta] ([Id_Cuenta])
GO
ALTER TABLE [dbo].[Inicio_sesion] CHECK CONSTRAINT [FK_Id_Cuenta]
```

```
GO
ALTER TABLE [dbo].[Modificacion]  WITH CHECK ADD  CONSTRAINT [FK_Id_Cuenta2] FOREIGN
KEY([Id_Cuenta])
REFERENCES [dbo].[Cuenta] ([Id_Cuenta])
GO
ALTER TABLE [dbo].[Modificacion] CHECK CONSTRAINT [FK_Id_Cuenta2]
GO
ALTER TABLE [dbo].[Saldo]  WITH CHECK ADD  CONSTRAINT [FK_Id_Cajero2] FOREIGN
KEY([Id_Cajero])
REFERENCES [dbo].[Cajero] ([Id_Cajero])
GO
ALTER TABLE [dbo].[Saldo] CHECK CONSTRAINT [FK_Id_Cajero2]
GO
ALTER TABLE [dbo].[Transacciones]  WITH CHECK ADD  CONSTRAINT [FK_Id_cajero4] FOREIGN
KEY([Id_cajero])
REFERENCES [dbo].[Cajero] ([Id_Cajero])
GO
ALTER TABLE [dbo].[Transacciones] CHECK CONSTRAINT [FK_Id_cajero4]
GO
ALTER TABLE [dbo].[Transacciones]  WITH CHECK ADD  CONSTRAINT [FK_Id_Cuenta3] FOREIGN
KEY([Id_Cuenta])
REFERENCES [dbo].[Cuenta] ([Id_Cuenta])
GO
ALTER TABLE [dbo].[Transacciones] CHECK CONSTRAINT [FK_Id_Cuenta3]
GO
```

3)Diagrama