Міністерство освіти і науки України

Національний університет “Львівська політехніка”



Звіт

про виконання лабораторної роботи №1

iз курсу “Аналітичні та нереляційні бази даних”

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**Лабораторна робота №1**

**Завдання:** реалізувати базу даних Instagram, яка дозволяє зберегти всі необхідні дані.

**Скрипт для створення БД**

USE [master]

GO

CREATE DATABASE [Lab\_1]

GO

ALTER DATABASE [Lab\_1] SET COMPATIBILITY\_LEVEL = 140

GO

IF (1 = FULLTEXTSERVICEPROPERTY('IsFullTextInstalled'))

begin

EXEC [Lab\_1].[dbo].[sp\_fulltext\_database] @action = 'enable'

end

GO

ALTER DATABASE [Lab\_1] SET ANSI\_NULL\_DEFAULT OFF

GO

ALTER DATABASE [Lab\_1] SET ANSI\_NULLS OFF

GO

ALTER DATABASE [Lab\_1] SET ANSI\_PADDING OFF

GO

ALTER DATABASE [Lab\_1] SET ANSI\_WARNINGS OFF

GO

ALTER DATABASE [Lab\_1] SET ARITHABORT OFF

GO

ALTER DATABASE [Lab\_1] SET AUTO\_CLOSE OFF

GO

ALTER DATABASE [Lab\_1] SET AUTO\_SHRINK OFF

GO

ALTER DATABASE [Lab\_1] SET AUTO\_UPDATE\_STATISTICS ON

GO

ALTER DATABASE [Lab\_1] SET CURSOR\_CLOSE\_ON\_COMMIT OFF

GO

ALTER DATABASE [Lab\_1] SET CURSOR\_DEFAULT GLOBAL

GO

ALTER DATABASE [Lab\_1] SET CONCAT\_NULL\_YIELDS\_NULL OFF

GO

ALTER DATABASE [Lab\_1] SET NUMERIC\_ROUNDABORT OFF

GO

ALTER DATABASE [Lab\_1] SET QUOTED\_IDENTIFIER OFF

GO

ALTER DATABASE [Lab\_1] SET RECURSIVE\_TRIGGERS OFF

GO

ALTER DATABASE [Lab\_1] SET DISABLE\_BROKER

GO

ALTER DATABASE [Lab\_1] SET AUTO\_UPDATE\_STATISTICS\_ASYNC OFF

GO

ALTER DATABASE [Lab\_1] SET DATE\_CORRELATION\_OPTIMIZATION OFF

GO

ALTER DATABASE [Lab\_1] SET TRUSTWORTHY OFF

GO

ALTER DATABASE [Lab\_1] SET ALLOW\_SNAPSHOT\_ISOLATION OFF

GO

ALTER DATABASE [Lab\_1] SET PARAMETERIZATION SIMPLE

GO

ALTER DATABASE [Lab\_1] SET READ\_COMMITTED\_SNAPSHOT OFF

GO

ALTER DATABASE [Lab\_1] SET HONOR\_BROKER\_PRIORITY OFF

GO

ALTER DATABASE [Lab\_1] SET RECOVERY FULL

GO

ALTER DATABASE [Lab\_1] SET MULTI\_USER

GO

ALTER DATABASE [Lab\_1] SET PAGE\_VERIFY CHECKSUM

GO

ALTER DATABASE [Lab\_1] SET DB\_CHAINING OFF

GO

ALTER DATABASE [Lab\_1] SET FILESTREAM( NON\_TRANSACTED\_ACCESS = OFF )

GO

ALTER DATABASE [Lab\_1] SET TARGET\_RECOVERY\_TIME = 60 SECONDS

GO

ALTER DATABASE [Lab\_1] SET DELAYED\_DURABILITY = DISABLED

GO

EXEC sys.sp\_db\_vardecimal\_storage\_format N'Lab\_1', N'ON'

GO

ALTER DATABASE [Lab\_1] SET QUERY\_STORE = OFF

GO

USE [Lab\_1]

GO

SET ANSI\_NULLS ON

GO

SET QUOTED\_IDENTIFIER ON

GO

CREATE TABLE [dbo].[Comments](

[comment\_id] [int] IDENTITY(1,1) NOT NULL,

[user\_id] [int] NOT NULL,

[post\_id] [int] NOT NULL,

[text] [nvarchar](1000) NOT NULL,

CONSTRAINT [PK\_Comments] PRIMARY KEY CLUSTERED

(

[comment\_id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO

SET ANSI\_NULLS ON

GO

SET QUOTED\_IDENTIFIER ON

GO

CREATE TABLE [dbo].[Emoji](

[emoji\_id] [int] IDENTITY(1,1) NOT NULL,

[image] [varbinary](max) NULL,

[description] [nvarchar](10) NOT NULL,

CONSTRAINT [PK\_Emoji] PRIMARY KEY CLUSTERED

(

[emoji\_id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY] TEXTIMAGE\_ON [PRIMARY]

GO

SET ANSI\_NULLS ON

GO

SET QUOTED\_IDENTIFIER ON

GO

CREATE TABLE [dbo].[Likes](

[like\_id] [int] IDENTITY(1,1) NOT NULL,

[user\_id] [int] NOT NULL,

[post\_id] [int] NOT NULL,

[emoji\_id] [int] NOT NULL,

[date] [date] NOT NULL,

CONSTRAINT [PK\_Likes] PRIMARY KEY CLUSTERED

(

[like\_id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO

SET ANSI\_NULLS ON

GO

SET QUOTED\_IDENTIFIER ON

GO

CREATE TABLE [dbo].[Location](

[location\_id] [int] IDENTITY(1,1) NOT NULL,

[post\_id] [int] NOT NULL,

[city] [nvarchar](100) NOT NULL,

[latitude] [decimal](16, 8) NOT NULL,

[longtitude] [decimal](16, 8) NOT NULL,

CONSTRAINT [PK\_Location] PRIMARY KEY CLUSTERED

(

[location\_id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO

SET ANSI\_NULLS ON

GO

SET QUOTED\_IDENTIFIER ON

GO

CREATE TABLE [dbo].[Posts](

[post\_id] [int] IDENTITY(1,1) NOT NULL,

[user\_id] [int] NOT NULL,

[photo] [varbinary](max) NULL,

[date] [datetime] NOT NULL,

[text] [nvarchar](1000) NOT NULL,

CONSTRAINT [PK\_posts] PRIMARY KEY CLUSTERED

(

[post\_id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY] TEXTIMAGE\_ON [PRIMARY]

GO

SET ANSI\_NULLS ON

GO

SET QUOTED\_IDENTIFIER ON

GO

CREATE TABLE [dbo].[Posts\_Tags](

[id] [int] IDENTITY(1,1) NOT NULL,

[post\_id] [int] NOT NULL,

[tag\_id] [int] NOT NULL,

CONSTRAINT [PK\_Posts\_Tags] PRIMARY KEY CLUSTERED

(

[id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO

SET ANSI\_NULLS ON

GO

SET QUOTED\_IDENTIFIER ON

GO

CREATE TABLE [dbo].[Tags](

[tag\_id] [int] IDENTITY(1,1) NOT NULL,

[description] [nvarchar](20) NOT NULL,

CONSTRAINT [PK\_Tags] PRIMARY KEY CLUSTERED

(

[tag\_id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO

SET ANSI\_NULLS ON

GO

SET QUOTED\_IDENTIFIER ON

GO

CREATE TABLE [dbo].[Users](

[user\_id] [int] IDENTITY(1,1) NOT NULL,

[country] [nvarchar](100) NOT NULL,

[password] [nvarchar](100) NOT NULL,

[first\_name] [nvarchar](100) NOT NULL,

[last\_name] [nvarchar](100) NOT NULL,

[username] [nvarchar](100) NOT NULL,

[age] [int] NOT NULL,

CONSTRAINT [PK\_user\_accounts] PRIMARY KEY CLUSTERED

(

[user\_id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO

SET ANSI\_NULLS ON

GO

SET QUOTED\_IDENTIFIER ON

GO

CREATE TABLE [dbo].[Users\_Followers](

[user\_id] [int] NOT NULL,

[follower\_id] [int] NOT NULL,

[blocked] [bit] NOT NULL,

CONSTRAINT [PK\_Users\_Followers] PRIMARY KEY CLUSTERED

(

[user\_id] ASC,

[follower\_id] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO

ALTER TABLE [dbo].[Comments] WITH CHECK ADD CONSTRAINT [FK\_Comments\_Posts] FOREIGN KEY([post\_id])

REFERENCES [dbo].[Posts] ([post\_id])

GO

ALTER TABLE [dbo].[Comments] CHECK CONSTRAINT [FK\_Comments\_Posts]

GO

ALTER TABLE [dbo].[Comments] WITH CHECK ADD CONSTRAINT [FK\_Comments\_Users] FOREIGN KEY([user\_id])

REFERENCES [dbo].[Users] ([user\_id])

GO

ALTER TABLE [dbo].[Comments] CHECK CONSTRAINT [FK\_Comments\_Users]

GO

ALTER TABLE [dbo].[Likes] WITH CHECK ADD CONSTRAINT [FK\_Likes\_Emoji] FOREIGN KEY([emoji\_id])

REFERENCES [dbo].[Emoji] ([emoji\_id])

GO

ALTER TABLE [dbo].[Likes] CHECK CONSTRAINT [FK\_Likes\_Emoji]

GO

ALTER TABLE [dbo].[Likes] WITH CHECK ADD CONSTRAINT [FK\_Likes\_Posts] FOREIGN KEY([post\_id])

REFERENCES [dbo].[Posts] ([post\_id])

GO

ALTER TABLE [dbo].[Likes] CHECK CONSTRAINT [FK\_Likes\_Posts]

GO

ALTER TABLE [dbo].[Likes] WITH CHECK ADD CONSTRAINT [FK\_Likes\_Users] FOREIGN KEY([user\_id])

REFERENCES [dbo].[Users] ([user\_id])

GO

ALTER TABLE [dbo].[Likes] CHECK CONSTRAINT [FK\_Likes\_Users]

GO

ALTER TABLE [dbo].[Location] WITH CHECK ADD CONSTRAINT [FK\_Location\_Posts1] FOREIGN KEY([post\_id])

REFERENCES [dbo].[Posts] ([post\_id])

GO

ALTER TABLE [dbo].[Location] CHECK CONSTRAINT [FK\_Location\_Posts1]

GO

ALTER TABLE [dbo].[Posts] WITH CHECK ADD CONSTRAINT [FK\_Posts\_Users] FOREIGN KEY([user\_id])

REFERENCES [dbo].[Users] ([user\_id])

GO

ALTER TABLE [dbo].[Posts] CHECK CONSTRAINT [FK\_Posts\_Users]

GO

ALTER TABLE [dbo].[Posts\_Tags] WITH CHECK ADD CONSTRAINT [FK\_Posts\_Tags\_Posts] FOREIGN KEY([post\_id])

REFERENCES [dbo].[Posts] ([post\_id])

GO

ALTER TABLE [dbo].[Posts\_Tags] CHECK CONSTRAINT [FK\_Posts\_Tags\_Posts]

GO

ALTER TABLE [dbo].[Posts\_Tags] WITH CHECK ADD CONSTRAINT [FK\_Posts\_Tags\_Tags] FOREIGN KEY([tag\_id])

REFERENCES [dbo].[Tags] ([tag\_id])

GO

ALTER TABLE [dbo].[Posts\_Tags] CHECK CONSTRAINT [FK\_Posts\_Tags\_Tags]

GO

ALTER TABLE [dbo].[Users\_Followers] WITH CHECK ADD CONSTRAINT [FK\_Users\_Followers\_Users] FOREIGN KEY([user\_id])

REFERENCES [dbo].[Users] ([user\_id])

GO

ALTER TABLE [dbo].[Users\_Followers] CHECK CONSTRAINT [FK\_Users\_Followers\_Users]

GO

ALTER TABLE [dbo].[Users\_Followers] WITH CHECK ADD CONSTRAINT [FK\_Users\_Followers\_Users1] FOREIGN KEY([follower\_id])

REFERENCES [dbo].[Users] ([user\_id])

GO

ALTER TABLE [dbo].[Users\_Followers] CHECK CONSTRAINT [FK\_Users\_Followers\_Users1]

GO

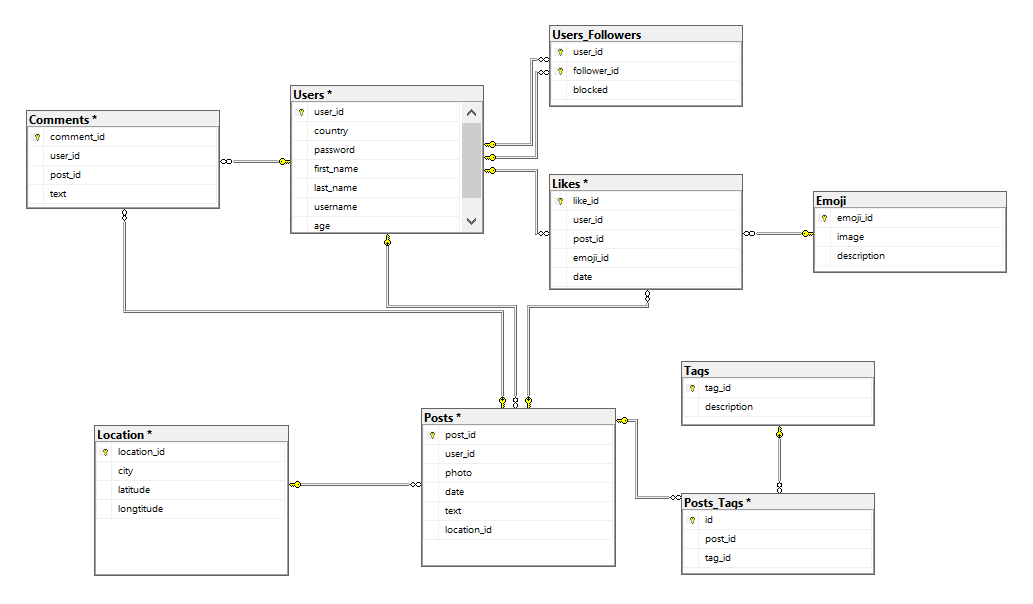
USE [master]

GO

ALTER DATABASE [Lab\_1] SET READ\_WRITE

GO

Діаграма створена у MS SQL Management Studio



Основний клас – це пост, який має кілька інформаційних полів(фото, дата, текст). Окрім цього пост може посилатися на певний набір тегів і локацію, які мають свої інформаційні поля. Один і той самий тег або локація можуть бути використані в різних постах.

Пости створюються користувачами. Користувач може залишити коментар під постом або вподобати його, при цьому він сам вибирає, яку емоджі використати(можна вподобати кілька разів). Кожна емоджі має свій текстовий опис.

Окрім цього, користувач має змогу слідкувати за іншими користувачами або блокувати їх.

**Висновок:** в результаті виконання даної лабораторної роботи я навчився проектувати базу даних для зберігання необхідної інформації та створювати її в MS SQL Management Studio.