

# Tech Process Solutions Training Presentation

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# Outline

- Introduction
- Training Stage
- Real Application “Outsourced Employee System”
- Demo

# Introduction

- About me
  - I graduated from TTU (Tafila Technical University).
  - Electrical Power Engineer
- About our Training
  - We have started our training in TPS on the 4th of June 2024
  - Our training primarily focused on developing web applications using .NET Core with MVC and Entity Framework

# Training Stage

1. Revision to SQL .
2. Solving SQL tasks.
3. Read chapters (1-5) in the Book “Pro ASP.NET Core 3.0, Adam Freeman” for:
  - Understanding ASP.NET Core platform and the Frameworks that are used with it.
  - Advance Topics in C# that are beneficial to make your web application flexible.
4. Reading Entity Framework (EF) Microsoft tutorial.

# Training Stage: SQL Revision

I completed "SQL basic" tutorial by James Coe. This tutorial introduce me through the definition and types of data base and, the common basic SQL commands that I need when I deal with relational data base.

## ➤ What Is Database:

Database basically, is anything that I can store information (data) in it even if it was a paper, or an Excel sheet, but with the spread of technology the concept of Database has been evolved and the types of data base has been introduced.

# Training Stage: SQL Revision

## ➤ Types Of Database:

- Relational Database
- Non-Relational Database

The tutorial broke down the following commands by giving us tasks to use the for retrieving data from the "bike-sharing services" Database that I created.

## ➤ SQL Commands:

- Select
- Join
- Order By
- Aggregate Functions
- Group by

# Training Stage: SQL Tasks

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My task was to create a Database for a company, with a specific requirements, which is a crucial part to be able to make relationships between the entities ("Tables")

## ✓ Task goals:

- Create a stored procedure that retrieve comprehensive data from the Database
- Create a view to retrieve all data from the Database
- Create a trigger that detects changes (update, delete, insert) happens on data in "Employees" table
- Create Index on column "salary" in employee tables
- Create a table-valued function to return list of employees based on a department Id

# Training Stage: SQL Tasks

## ✓ Stored Procedure

Stored Procedure is an object in relational-database management system which we use to store a complex queries or, queries that I use frequently. There are many benefits that I get from this approach:

- Reusability
- Performance
- Maintainability
- Security



# Training Stage: SQL Tasks

## ✓ View

View is a virtual table that carries data from other tables based on a stored query. There are many benefits that I get from view:

- Reusability
- Security
- Maintainability

## ✓ Triggers

A trigger is a type of a stored procedure that is automatically executed when a specific action occurs on a table.

There are two types of trigger:

# Training Stage: SQL Tasks

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- DML Trigger

DML trigger executes when we affect data in a table, through data manipulation language (DML) events such as insert, update, delete.

- DDL Trigger

DDL trigger executes when we affect data in a table, through data definition language (DDL) events such as alter, drop, create.

## ✓ Index

The Index is a structure associated with data in a table or a view, which helps to reduce time complexity by minimizing the area that should be searched.



# Training Stage: SQL Tasks

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## ✓ Functions In SQL:

Functions in SQL are divided into two category:

- Built In Functions
- User Defined Functions
  - Table-valued function
  - Scalar-functions

Beside to the tasks I have been asked to read about normalization.

## ✓ Normalization:

Normalization is a process of organizing data in a way that I can avoid redundant data and ensure data integrity

# Training Stage: SQL Tasks

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Normalized tables are:

- Easier to understand
- Protected from:
  - Insertion anomalies
  - Update anomalies
  - Deletion anomalies

**Thank you All !  
Any Questions?**