Session 7 - Secrets

Can you keep a secret?

Overview of Secrets in a Blazor Application:

1. **Sensitive Information**: Every application interacts with services, databases, and APIs, and these interactions often require credentials or other sensitive information, such as API keys, connection strings to databases, or passwords.

2. **Version Control Risks**: Developers often use version control systems like Git to manage their codebase. If sensitive data is hard-coded into the application, there's a risk that this data might be pushed to public repositories, exposing it to potential malicious actors.

3. **Avoiding Merge Conflicts in Collaborative Development**: When students work on group projects, keeping configuration settings like connection strings in the main codebase can lead to merge conflicts. For instance, if two students have different settings or credentials for their local development environments, they might unintentionally overwrite each other's configurations when merging changes. By separating secrets and configuration from the code, these conflicts can be avoided, ensuring smoother collaboration.

# Using 'Secrets' in Visual Studio

- Visual Studio provides a tool called the Secret Manager to help developers store sensitive data during the development phase without adding this data to the code repository.

1. **Install the Secret Manager Tool**: If it's not already available, you might need to install it using the following command in the terminal or command prompt:

    - dotnet tool install --global Microsoft.Extensions.SecretManager.Tool

Initialize Secrets Storage

Right-click on the Web Application project in Solution Explorer > Choose "Manage User Secrets". This action creates a **secrets.json** file associated with the project but outside of the project directory.
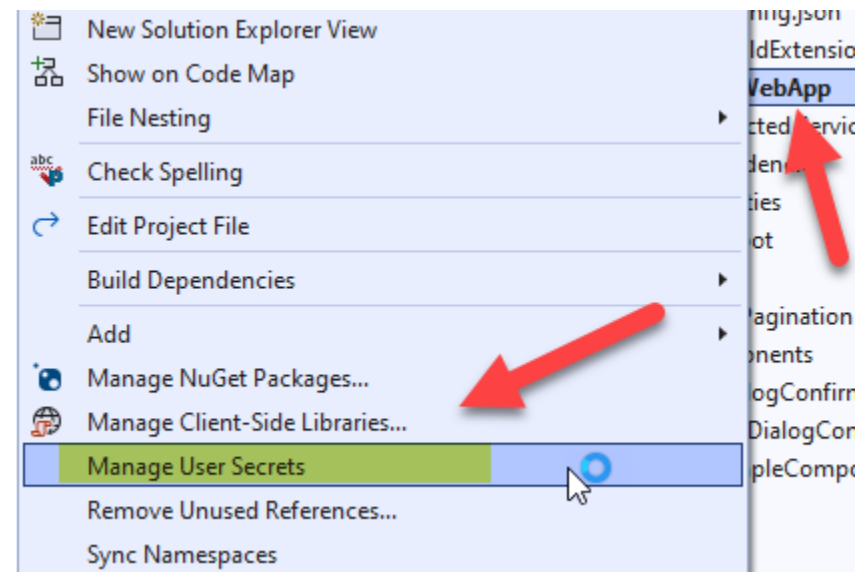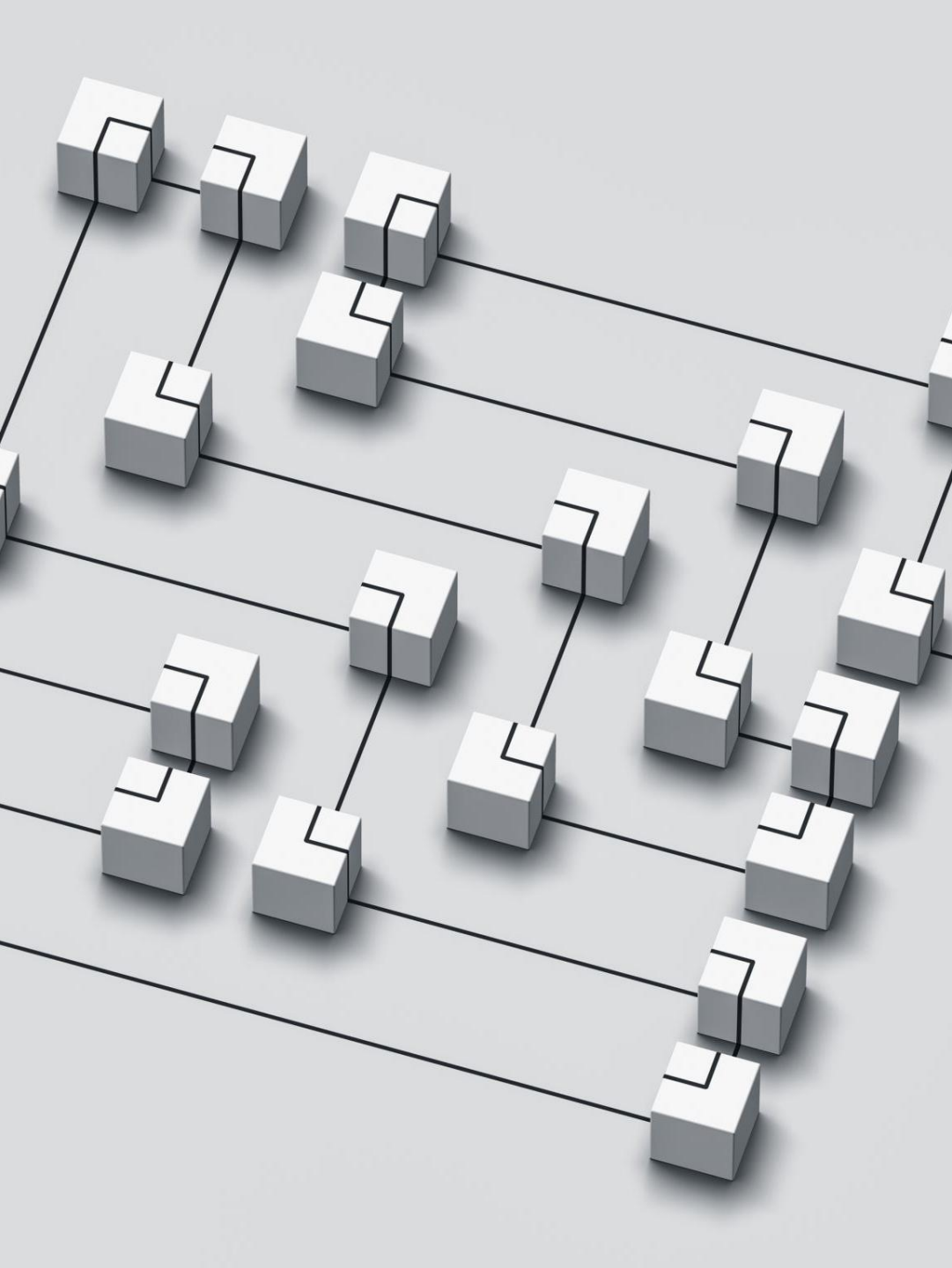
Add a Secret

The **secrets.json** file will open. You can add secrets in a key-value format. You will need to move your existing connection from the "appsettings.json" to the secret file. For example:
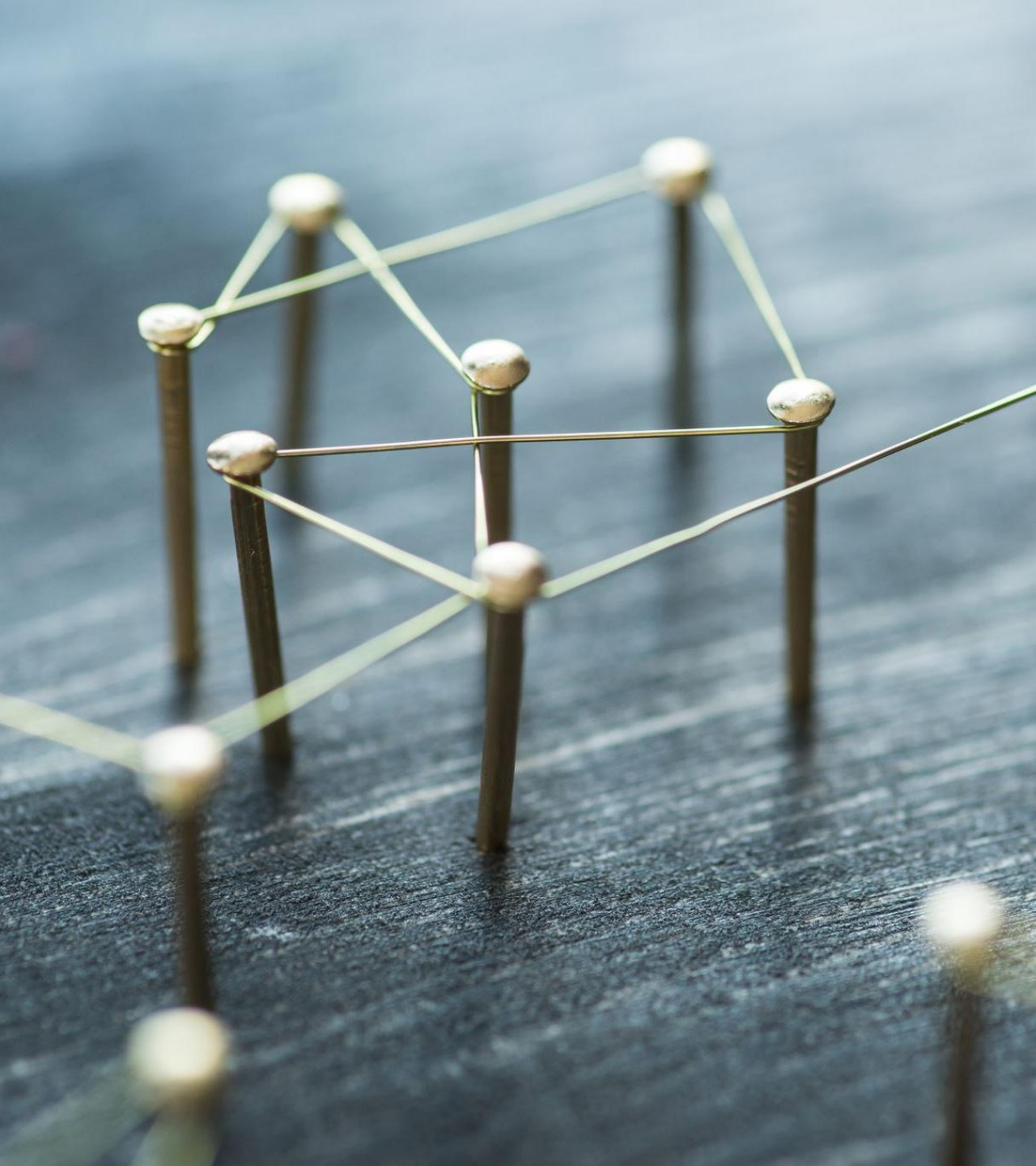
```
{
    "ConnectionStrings": {

      "OLTP-DMIT2018":
          "Server=.;Database=OLTP-
                       DMIT2018;Tr..
    }
}
```

Access the Secret in your Blazor App

In the app, you can access the secret using the Configuration API. For instance, in the **Startup.cs** or **Program.cs** (for newer .NET versions), you can get the connection string with:

```
var connectionString =
Configuration.GetConnectionString("DefaultConnection");
```

Moving Existing Connection String to Secrets

If you already have a connection string in your **appsettings.json**, remove it from there and place it into the **secrets.json,** as shown below.

- {
-    "ConnectionStrings": {
"“etools2023":
"Server=.;Database=eTools
2023;…"
}
}

Working In Groups (program.cs)

1. As a group, you will only have one connection string in your program.cs
   - `// code retrieves the eTools connection string`
   - `var connectionStringeTools = builder.Configuration.GetConnectionString(“etools2023")`

2. Each project will have its own "BackEndDependencies" based on its project area.
   - builder.Services.PurchaseDependencies(options => options.UseSqlServer(connectionStringeTools));
   - builder.Services.ReceivingDependencies(options => options.UseSqlServer(connectionStringeTools));
   - builder.Services.SalesDependencies(options => options.UseSqlServer(connectionStringeTools));
   - builder.Services.RentalDependencies(options => options.UseSqlServer(connectionStringeTools));

Important Note

- Remember, the Secret Manager is for **development purposes only**. It's not suitable for production environments. For production, consider more robust solutions like Azure Key Vault, environment variables, or other secret management tools.

Statement Regarding Slide Accuracy and Potential Revisions

- Please note that the content of these PowerPoint slides is accurate to the best of my knowledge at the time of presentation. However, as new research and developments emerge, or to enhance the learning experience, these slides may be subject to updates or revisions in the future. I encourage you to stay engaged with the course materials and any announcements for the most current information