# .NET 10 App Dev Hands-On Lab

## Razor Pages Lab 4 – Layout, GDPR

This lab adds support for client-side libraries, separates the _Layout.cshtml file into partials, and add GDPR support. Before starting this lab, you must have completed Razor Pages Lab 3.

# Part 1: Manage Client-Side Libraries

## Step 1: Install Library Manager

- [Visual Studio] Library Manager is part of Visual Studio 2022.

- [Command Line] **Install** the Library Manager CLI Tooling as a global tool:

```
dotnet tool install --global Microsoft.Web.LibraryManager.Cli --version 3.0.71
```

- [Command Line] **Update** (if already installed) the Library Manager CLI Tooling as a global tool:

```
dotnet tool update --global Microsoft.Web.LibraryManager.Cli --version 3.0.71
```

- You can check for a more recent version here:

```
https://www.nuget.org/packages?q=microsoft.web.librarymanager.cli
```

## Step 2: Delete the lib directory from wwwroot

- Delete the wwwroot\lib folder. It will be replaced with files using library manager.

## Step 3: Add the libman.json file

- [Visual Studio] Right-click on the AutoLot.Web project and select Manage Client-Side Libraries. This adds the libman.json file to the root of the project. The default is to restore libraries when the project is built. If you want to change this, right-click on the libman.json file and select "Disable client-side libraries on build".

- [Command Line] Create a new libman.json file with the following command:

```
libman init
```

## Step 4: Update the libman.json file

- Update the `libman.json` file to the following JSON:

```json
{
  //https://api.cdnjs.com/libraries?output=human
  //https://api.cdnjs.com/libraries/jquery?output=human
  "version": "3.0",
  "defaultProvider": "cdnjs",
  "defaultDestination": "wwwroot/lib",
  "libraries": [
    {
      "library": "jquery@3.7.1",
      "destination": "wwwroot/lib/jquery",
      "files": [ "jquery.js", "jquery.min.js" ]
    },
    {
      "library": "jquery-validate@1.21.0",
      "destination": "wwwroot/lib/jquery-validation",
      "files": [ "jquery.validate.js", "jquery.validate.min.js", "additional-methods.js",
"additional-methods.min.js" ]
    },
    {
      "library": "jquery-validation-unobtrusive@4.0.0",
      "destination": "wwwroot/lib/jquery-validation-unobtrusive",
      "files": [ "jquery.validate.unobtrusive.js", "jquery.validate.unobtrusive.min.js" ]
    },
    {
      "library": "twitter-bootstrap@5.3.8",
      "destination": "wwwroot/lib/bootstrap",
      "files": [
        "css/bootstrap.css", "css/bootstrap.min.css",
        "js/bootstrap.js", "js/bootstrap.min.js"
      ]
    },
    {
      "library": "font-awesome@6.7.2",
      "destination": "wwwroot/lib/font-awesome/",
      "files": [
        "css/all.min.css","css/all.css",
        "js/all.js","js/all.min.js",
        "sprites/regular.svg", "sprites/solid.svg",
        "webfonts/fa-solid-900.ttf", "webfonts/fa-solid-900.woff2",
        "webfonts/fa-regular-400.ttf", "webfonts/fa-regular-400.woff2"
      ]
    },
    {
      "library": "popper.js@2.11.8",
      "destination": "wwwroot/lib/popper.js/",
      "files": [
        "umd/popper.min.js", "umd/popper.js"
      ]
    }
  ]
}
```

## Step 5: Update the client-side libraries

- [Visual Studio] Right click on the libman.json file and select Restore Client-Side Libraries.
- [Command Line]

```
libman restore
```

# Part 2: Update the Layout and Partial Views

## Step 1: Add the Head Partial

- Create a new folder named Partials under the Pages\Shared folder. Create a new view file (you can use the Razor View – Empty template) named _Head.cshtml in the new folder. Update it to the following:

```html
<head>
  <meta charset="utf-8"/>
  <meta name="viewport" content="width=device-width, initial-scale=1.0"/>
  <title>@ViewData["Title"] - AutoLot.Web</title>
  <environment include="Development,Local">
    <link rel="stylesheet" href="~/lib/bootstrap/css/bootstrap.css" asp-append-version="true" />
    <link rel="stylesheet" href="~/lib/font-awesome/css/all.css" asp-append-version="true" />
  </environment>
  <environment exclude="Development,Local">
    <link rel="stylesheet" asp-fallback-href="~/lib/bootstrap/css/bootstrap.min.css"
      href="https://cdnjs.cloudflare.com/ajax/libs/bootstrap/5.3.8/css/bootstrap.min.css"
      asp-fallback-test-class="h6" asp-fallback-test-property="font-weight"
      asp-fallback-test-value="500"
      integrity="sha512-
2bBQCjcnw658Lho4nlXJcc6WkV/UxpE/sAokbXPxQNGqmNdQrWqtw26Ns9kFF/yG792pKR1Sx8/Y1Lf1XN4GKA=="
      crossorigin="anonymous" referrerpolicy="no-referrer" />
    <link rel="stylesheet" href="~/lib/font-awesome/css/all.min.css" asp-append-version="true" />
  </environment>
  <link rel="stylesheet" href="~/css/site.css" asp-append-version="true"/>
  <link rel="stylesheet" href="~/AutoLot.Web.styles.css" asp-append-version="true"/>
</head>
```

## Step 2: Add the JavaScript Files Partial

- Create a new view file named _JavaScriptFiles.cshtml in the Pages\Shared\Partials folder. Update the content to the following:

```
<environment include="Development,Local">
  <script src="~/lib/jquery/jquery.js" asp-append-version="true"></script>
  <script src="~/lib/popper.js/umd/popper.js" asp-append-version="true"></script>
  <script src="~/lib/bootstrap/js/bootstrap.js" asp-append-version="true"></script>
  <script src="~/lib/font-awesome/js/all.js" asp-append-version="true"></script>
</environment>
<environment exclude="Development,Local">
  <script src="https://cdnjs.cloudflare.com/ajax/libs/jquery/3.7.1/jquery.min.js"
      asp-fallback-src="~/lib/jquery/jquery.min.js" asp-fallback-test="window.jQuery"
      integrity="sha512-
v2CJ7UaYy4JwqLDIrZUI/4hqeoQieOmAZNXBeQyjo21dadnwR+8ZaIJVT8EE2iyI61OV8e6M8PP2/4hpQINQ/g=="
      crossorigin="anonymous" referrerpolicy="no-referrer"></script>
  <script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/2.11.8/umd/popper.min.js"
    asp-fallback-src="~/lib/popper.js/umd/popper.min.js" asp-fallback-test="window.Popper"
    integrity="sha512-
TPh2Oxlg1zp+kz3nFA0C5vVC6leG/6mm1z9+mA81MI5eaUVqasPLO8Cuk4gMF4gUfP5etR73rgU/8PNMsSesoQ=="
    crossorigin="anonymous" referrerpolicy="no-referrer"></script>
  <script src="https://cdnjs.cloudflare.com/ajax/libs/twitter-bootstrap/5.3.8/js/bootstrap.min.js"
    asp-fallback-src="~/lib/bootstrap/js/bootstrap.bundle.min.js"
    asp-fallback-test="window.bootstrap"
    integrity="sha512-
nKXmKvJyiGQy343jatQlzDprflyB5c+tKCzGP3Uq67v+lmzfnZUi/ZT+fc6ITZfSC5HhaBKUIvr/nTLCV+7F+Q=="
    crossorigin="anonymous" referrerpolicy="no-referrer"></script>
  <script src="~/lib/font-awesome/js/all.min.js" asp-append-version="true"></script>
</environment>
<script src="~/js/site.js" asp-append-version="true"></script>
```

## Step 3: Add the Menu Partial

- Create a new view file named _Menu.cshtml in the Pages\Shared\Partials folder. Update the content to the following:

```
@inject IOptionsMonitor<DealerInfo> _dealerInfoMonitor
@{
  var dealerInfo = _dealerInfoMonitor.CurrentValue;
}
<nav class="navbar navbar-expand-sm bg-white border-bottom box-shadow mb-3">
  <div class="container-fluid">
    <a class="navbar-brand" asp-area="" asp-page="/Index">@dealerInfo.DealerName</a>
    <button class="navbar-toggler" type="button" data-bs-toggle="collapse"
      data-bs-target=".navbar-collapse" aria-controls="navbarSupportedContent"
      aria-expanded="false" aria-label="Toggle navigation">
      <span class="navbar-toggler-icon"></span>
    </button>
    <div class="navbar-collapse collapse d-sm-inline-flex justify-content-between">
      <ul class="navbar-nav flex-grow-1">
        <li class="nav-item dropdown">
          <a class="nav-link dropdown-toggle text-dark" data-bs-toggle="dropdown">
            Inventory <i class="fa fa-car" style="color: #63E6BE;"></i>
          </a>
        </li>
        <li class="nav-item">
          <a class="nav-link text-dark" asp-area="" asp-page="/Privacy">
            Privacy <i class="fa-solid fa-user-secret" style="color: #aba0a0;"></i>
          </a>
        </li>
      </ul>
    </div>
  </div>
</nav>
```

## Step 4: Update the _Layout.cshml file

- In the `Pages\Shared` directory, update `_Layout.cshtml` file to the following:

```
@inject IWebHostEnvironment _env
<!DOCTYPE html>
<html lang="en">
  <partial name="Partials/_Head"/>
  <body>
    <header><partial name="Partials/_Menu"/></header>
    <div class="container">
      <main role="main" class="pb-3">
        @RenderBody()
      </main>
    </div>
    <footer class="border-top footer text-muted">
      <div class="container">
        &copy; 2024 - AutoLot.Web - @_env.EnvironmentName
        <a asp-area="" asp-page="/Privacy">
          Privacy <i class="fa-solid fa-user-secret" style="color: #aba0a0;"></i>
        </a>
      </div>
    </footer>
    <partial name="Partials/_JavaScriptFiles"/>
    @await RenderSectionAsync("Scripts", required: false)
  </body>
</html>
```

## Step 5: Update the _ValidationScripts.cshml partial file

- Update the `_ValidationScriptsPartial.cshtml` view to the following:

```
<environment include="Development,Local">
  <script src="~/lib/jquery-validation/jquery.validate.js" asp-append-version="true"></script>
  <script src="~/lib/jquery-validation-unobtrusive/jquery.validate.unobtrusive.js"
    asp-append-version="true"></script>
  <script src="~/js/validations/validators.js" asp-append-version="true"></script>
  <script src="~/js/validations/errorFormatting.js" asp-append-version="true"></script>
</environment>
<environment exclude="Development,Local">
  <script crossorigin="anonymous" referrerpolicy="no-referrer"
    src="https://cdnjs.cloudflare.com/ajax/libs/jquery-validate/1.21.0/jquery.validate.min.js"
    asp-fallback-src="~/lib/jquery-validation/jquery.validate.min.js"
    asp-fallback-test="window.jQuery && window.jQuery.validator" integrity="sha512-
KFHXdr2oObHKI9w4Hv1XPKc898mE4kgYx58oqsc/JqqdLMDI4YjOLzom+EMlW8HFUd0QfjfAvxSL6sEq/a42fQ==">
  </script>
  <script crossorigin="anonymous" referrerpolicy="no-referrer"
    src="https://cdnjs.cloudflare.com/ajax/libs/jquery-validation-
unobtrusive/4.0.0/jquery.validate.unobtrusive.min.js"
    asp-fallback-src="~/lib/jquery-validation-unobtrusive/jquery.validate.unobtrusive.min.js"
    asp-fallback-test="window.jQuery && window.jQuery.validator &&
window.jQuery.validator.unobtrusive" integrity="sha512-
xq+Vm8jC94ynOikewaQXMEkJIOBp7iArs3IhFWSWdRT3Pq8wFz46p+ZDFAR7kHnSFf+zUv52B3prRYnbDRdgog==">
  </script>
  <script src="~/js/validations/validationCode.js"></script>
</environment>
```

# Part 3: Global Display Templates

## Step 1: Add the DateTime DisplayTemplate

- Create a new folder named `DisplayTemplates` under the `Pages\Shared` folder and add a Partial View named `DateTime.cshtml` in the new folder and update the markup to the following:

```
@model DateTime?
@if (Model == null)
{
  @:Unknown
}
else
{
  if (ViewData.ModelMetadata.IsNullableValueType)
  {
    @:@(Model.Value.ToString("d"))
  }
  else
  {
    @:@(((DateTime)Model).ToString("d"))
  }
}
```

# Part 4: GDPR Support

## Step 1: Add GDPR support to Program.cs

- In the top-level statements, just after the call to `AddRazorPages()`, add the following to add GDPR services to the DI container:

```
builder.Services.Configure<CookiePolicyOptions>(options =>
{
  // This lambda determines whether user consent for non-essential cookies is
  // needed for a given request.
  options.CheckConsentNeeded = context => true;
  options.MinimumSameSitePolicy = SameSiteMode.None;
});
// The TempData provider cookie is not essential. Make it essential
// so TempData is functional when tracking is disabled.
builder.Services.Configure<CookieTempDataProviderOptions>(
  options => { options.Cookie.IsEssential = true; });
builder.Services.AddSession(options => { options.Cookie.IsEssential = true; });
```

- Add GDPR support to the HTTP pipeline by adding the following line of code before the call to `UseStaticFiles()`:

```
app.UseCookiePolicy();
app.UseStaticFiles();
```

## Step 2: Add the Cookie Consent Partial file

- Create a new view file named _CookieConsent.cshtml in the Pages\Shared\Partials folder. Update the content to the following:

```
@{
  var consentFeature = Context.Features.Get<ITrackingConsentFeature>();
  var showBanner = !consentFeature?.CanTrack ?? false;
  var cookieString = consentFeature?.CreateConsentCookie();
}

@if (showBanner)
{
  <div id="cookieConsent" class="alert alert-info alert-dismissible fade show" role="alert">
    Use this space to summarize your privacy and cookie use policy. <a asp-area="" asp-
page="/Privacy">Learn More</a>.
    <button type="button" class="accept-policy" data-bs-dismiss="alert" aria-label="Close"
        data-cookie-string="@cookieString">
      <span aria-hidden="true">Accept</span>
    </button>
    <button type="button" class="btn-close" data-bs-dismiss="alert" aria-label="Close">
    </button>
  </div>
  <script>
    (function () {
      var button = document.querySelector("#cookieConsent button[data-cookie-string]");
      button.addEventListener("click", function (event) {
        document.cookie = button.dataset.cookieString;
        window.location = '@Url.Page(nameof(Index))';
      }, false);
    })();
  </script>
}
```

## Step 3: Add the Partial to the _Layout

- Add the following lines into the _Layout.cshtml page:

```
<div class="container">
  <partial name="Partials/_CookieConsent"/>
  <main role="main" class="pb-3">
    @RenderBody()
  </main>
</div>
```

## Step 4: Update _Menu.cshtml

- Add the following two lines into the Razor block at the top of _Menu.cshtml:

```
@{
  var dealerInfo = _dealerInfoMonitor.CurrentValue;
  var consentFeature = Context.Features.Get<ITrackingConsentFeature>();
  var showBanner = !consentFeature?.CanTrack ?? false;
}
```

- Add the following Razor block after the closing </li> For the Privacy menu item:

```
@if (showBanner)
{
  <li class="nav-item">
    <a class="nav-link text-dark" asp-page="/Consent" asp-page-handler="GrantConsent"
      title="Accept Cookie Policy">
      Accept Cookie Policy <i class="fa-solid fa-cookie-bite" style="color: green;"></i>
    </a>
  </li>
}
else
{
  <li class="nav-item">
    <a class="nav-link text-dark" asp-page="/Consent" asp-page-handler="WithdrawConsent"
      title="Revoke Cookie Policy">
      Revoke Cookie Policy <i class="fa-solid fa-cookie" style="color: red;"></i>
    </a>
  </li>
}
```

## Step 5: Add the Page to Grant or Withdraw Consent

- Add a new Razor Page named Consent to the Pages folder. Update the code behind (Consent.cshtml.cs) to match the following (there is no UI for this page):

```
namespace AutoLot.Web.Pages;
public class ConsentModel : PageModel
{
  public IActionResult OnGetGrantConsent()
  {
    HttpContext.Features.Get<ITrackingConsentFeature>()?.GrantConsent();
    return RedirectToPage("./Index");
  }

  public IActionResult OnGetWithdrawConsent()
  {
    HttpContext.Features.Get<ITrackingConsentFeature>()?.WithdrawConsent();
    return RedirectToPage("./Index");
  }
}
```

# Summary

In this lab, you finished the added support for client-side libraries, updated the layout, and provided GDPR support.

# Next steps

In the next part of this tutorial series, you will create the Menu View Component and custom Tag Helpers.