

# Enhancing Expo Displayfile Guide

## Overview

This guide will show basic techniques to change the look and feel Monarch Migrated application Pages, to make them more appealing.

During the description of the steps to apply the different techniques, the public repository in GitHub will be used

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Reference public GitHub repository:

*<https://github.com/ASNA/SunFarm>*

The repository was created with a fresh new Monarch Migration. As enhancements were being applied, the required changes were committed, such that by using git History tooling, the changes may be seen in real code.

## Assumptions

Familiarity with the ASNA **Customer Sample IBMi program** is required. This program has been provided by ASNA as sample RPG/CL code in several products, with the names: M4CUST, M5CUST and/or IronMonger.

## Scope

This Guide shows how to Enhance the following Pages:


1. Customer Inquiry (Initial Page)
2. Customer Maintenance (option “2”)

In addition, the Site has been branded to show the fictitious company “SunFarm” with its logo on all pages.

## Specifically, the goal is to transform: Customer Inquiry Page:

|       |   |                     |                                   |                           |
|-------|---|---------------------|-----------------------------------|---------------------------|
| Enter | contreras   | M5 Customer Inquiry | 11/05/20                          | 17:08:15                  |
| F3    | Position to name: <input type="text"/>                                      |                     |                                   |                           |
| PgUp  | 2=Update 3=Display sales 5=Delivery Addresses 7=Create sales record 9=Print |                     |                                   |                           |
| PgDn  | sales (Online) 10=Print sales (Batch) 11=Orders                             |                     |                                   |                           |
|       | <u>Sel</u>  | <u>Custno</u>       | <u>Customer Name</u>              | <u>City / State / Zip</u> |
|       | ▼   | 46000               | 38 Inc. Co Operations             | Shreveport, LA 71101      |
|       | ▼   | 85500               | 3x Hinge League                   | San Francisco, CA 94105   |
|       | ▼   | 35300               | 3X Wholesale Phosphate            | Miami, FL 33147           |
|       | ▼   | 100100              | ACME Conduit Sales                | San Antonio, TX 78230     |
|       | ▼   | 64000               | Advantage Ranch Manufacturing Inc | Somersworth, TX 03878     |
|       | ▼   | 29400               | Advertising Agricultural 2nd Day  | Bryan, OH 43506           |
|       | ▼   | 48100               | Advertising Electric              | Gillette, A 82716         |
|       | ▼   | 68100               | Advertising Murray Ltd            | Palo Alto, CA 94303-0000  |
|       | ▼   | 86400               | Agency Way Loans                  | Merryville, TN 37801-3748 |
|       | ▼   | 64700               | Aims Analysis Group Singapore     | Wilkes-barre, PA 18701    |
|       | ▼   | 99500               | Aims College Corp Company         | Fairmont, MN 56031        |
|       | ▼   | 82600               | Aims Group Berry Compositing      | New York, NY 10004        |
|       | ▼   | 25300               | Aims Management Data              | Orlando, FL 32832         |
|       | ▼   | 17100               | Akashic City Insurance            | Cleveland, OH 45202       |
|       | F3=Exit   |                     |                                   |                           |

To this modern look:



**sunfarm**  
always fresh

### Customer Inquiry

Position to name:


| Selection                                  | Custno | Customer Name                         | City / State / Zip        |
|--|--------|---------------------------------------|---------------------------|
| <input type="checkbox"/>                   | 46000  | 38 Inc. Co Operations                 | Shreveport, LA 71101      |
| <input type="checkbox"/>                   | 85500  | 3x Hinge League                       | San Francisco, CA 94105   |
| <input type="checkbox"/>                   | 35300  | 3X Wholesale Phosphate                | Miami, FL 33147           |
| <input type="checkbox"/>                   | 100100 | ACME Conduit Sales                    | San Antonio, TX 78230     |
| <input type="checkbox"/>                   | 64000  | Advantage Ranch Manufacturing Inc     | Somersworth, TX 03878     |
| <input checked="" type="checkbox"/> Update | 29400  | Advertising Agricultural 2nd Day      | Bryan, OH 43506           |
| <input type="checkbox"/>                   | 48100  | Advertising Electric                  | Gillette, A 82716         |
| <input type="checkbox"/>                   | 68100  | Advertising Murray Ltd                | Palo Alto, CA 94303-0000  |
| <input type="checkbox"/>                   | 86400  | Agency Way Loans                      | Merryville, TN 37801-3748 |
| <input type="checkbox"/>                   | 64700  | Aims Analysis Group Singapore         | Wilkes-barre, PA 18701    |
| <input type="checkbox"/>                   | 99500  | Aims College Corp Company             | Fairmont, MN 56031        |
| <input type="checkbox"/>                   | 82600  | Aims Group Berry Compositing          | New York, NY 10004        |
| <input type="checkbox"/>                   | 25300  | Aims Management Data                  | Orlando, FL 32832         |
| <input type="checkbox"/>                   | 17100  | Akashic City Insurance                | Cleveland, OH 45202       |
| <input type="checkbox"/>                   | 19300  | Akzo Allyn Inc Co                     | Tucson, AZ 85713          |
| <input type="checkbox"/>                   | 80600  | Akzo Of Maine                         | Sanford, ME 04073         |
| <input type="checkbox"/>                   | 59700  | Akzo Sign Systems Co                  | Dalton, GA 30720          |
| <input type="checkbox"/>                   | 50500  | Alamo Elias Board Overland            | Greensboro, NC 27407      |
| <input type="checkbox"/>                   | 92000  | Alexvale Danek Noble Incorporated Mfg | Pompano Beach, FL 33064   |
| <input type="checkbox"/>                   | 10100  | Alexvale Investments Publishing       | Rumford, RI 02916         |

SubmitExitPgUpPgDn

# Customer Maintenance Page:

|        |   |   |                   |                                    |
|--------|---|---|-------------------|------------------------------------|
| Enter  | contreras   | M5 Customer Maintenance                               | 11/05/20          | 17:52:40                           |
| F3     |   |   |                   |                                    |
| Prompt |   | 46000   | Akzo Allyn Inc Co |                                    |
| New    |   |   |                   |                                    |
| Delete | Name:   | <input type="text" value="Akzo Allyn Inc Co"/>        |                   |                                    |
| Cancel | Address:  | <input type="text" value="Bldg S. Belt 1x Bld 2226"/> |                   |                                    |
|        |   | <input type="text"/>                                  |                   |                                    |
|        | City:   | <input type="text" value="Tucson"/>                   |                   |                                    |
|        | State/Zip:  | <input type="text" value="AZ"/>                       | (F4)              | <input type="text" value="85713"/> |
|        | Fax:  | <input type="text" value="602)251-3271"/>             |                   |                                    |
|        | Phone:  | <input type="text" value="(602) 258-7898"/>           |                   |                                    |
|        | Status:   | <input type="text"/>                                  | (F4)              |                                    |
|        | Contact Name:   | <input type="text"/>                                  |                   |                                    |
|        | Contact eMail:  | <input type="text"/>                                  |                   |                                    |
|        | Send Confirmation:  | <input type="text"/>                                  | (Y/N)             |                                    |
|        | F4=Prompt      F6=New customer      F11=Remove customer      F12=Cancel |   |                   |                                    |


To the page where more useful information is displayed



**sunfarm**  
always fresh

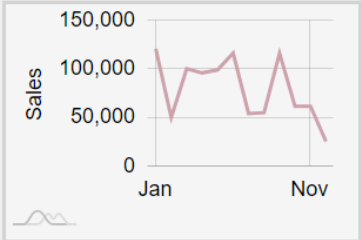
### Customer Maintenance

Account number29400



NameAdvertising Agricultural 2nd Day  
Address 11313 N Rd 122 Prkwy Suite  
Address 2  
CityBryanOH43506  
Salesperson  
eMail  
Phone(419) 251-3060Fax419)682-0611Send Confirmation(Y/N)

Active



Sales

JanNov

Last registered sales (Year 1997)

960,992.57↓ +21.3%

|     |            |     |            |     |            |     |           |
|-----|------------|-----|------------|-----|------------|-----|-----------|
| Jan | 121,174.32 | Feb | 50,489.49  | Mar | 100,567.71 | Apr | 96,354.00 |
| May | 99,382.42  | Jun | 116,623.63 | Jul | 54,574.63  | Aug | 55,472.98 |
| Sep | 116,586.43 | Oct | 61,889.79  | Nov | 62,112.07  | Dec | 25,765.10 |

Last registered returns (Year 1997)

131,644.38

|     |           |     |           |     |           |     |           |
|-----|-----------|-----|-----------|-----|-----------|-----|-----------|
| Jan | 16,950.64 | Feb | 6,806.59  | Mar | 13,552.22 | Apr | 13,089.60 |
| May | 13,158.84 | Jun | 16,079.07 | Jul | 7,643.46  | Aug | 7,341.96  |
| Sep | 16,092.86 | Oct | 8,439.19  | Nov | 8,820.75  | Dec | 3,669.20  |

SubmitExitPromptNew CustomerRemove CustomerBack

## **Data Files used**

The IBMi data files were also migrated to a Microsoft SQL instance.

Microsoft SQL Server Management Studio has been used to show file definitions and query results.

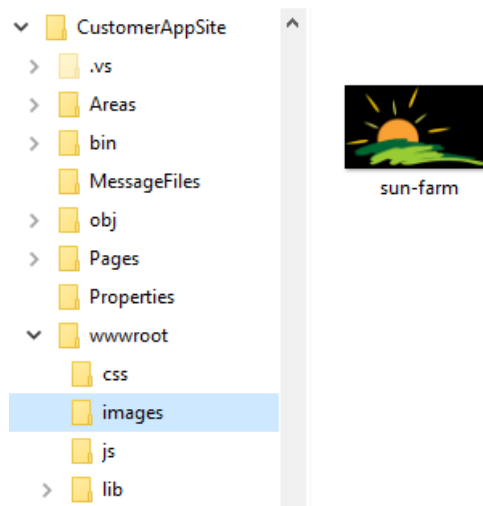
## Adding branding: SunFarm Logo as a heading on all pages.

The heading is produced by an image, text added with proper CSS and a solid background.



The file used is a PNG raster image as shown, with transparency. The name of the file is “sun-farm.png”

The place where static resources are placed is under the `wwwroot` folder:



Out of the box, the folder **`wwwroot/css`** already has a CSS file named **`site.css`**. It is empty.

Let's add some styles that will allow us to position and define the look of our logo elements





```

#logo-banner {
    height: auto;
    background-color: green;
}

#logo {
    padding-left: 1em;
}

#logo-text {
    display: inline-block;
    vertical-align: top;
    margin-left: -41px;
}

#logo-title {
    color: orange;
    font-size: xx-large;
    font-family: system-ui;
    font-weight: bolder;
}

#logo-subtitle {
    text-align: center;
    color: lightgreen;
    font-size: medium;
    opacity: 0.5;
}
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```

The markup that we need is standard HTML which we will place in the file: `_ViewStart.cshtml` that is shared with all the Pages in the View file structure.

```

@{
    Layout = "_Layout";
}

<div id="logo-banner">
    
    <div id="logo-text">
        <div id="logo-title">sunfarm</div>
        <div id="logo-subtitle">always fresh</div>
    </div>
</div>

```

The Application will show the branded heading on top of all pages, as shown below:

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<sup>1</sup> Commit: “Logo resources”.

Enter contreras M5 Customer Inquiry 11/05/20 18:55:53

F3 Position to name:

PgUp 2=Update 3=Display sales 5=Delivery Addresses 7=Create sales record 9=Print

PgDn sales (Online) 10=Print sales (Batch) 11=Orders

| Sel | Custno | Customer Name          | City / State / Zip      |
|-----|--------|------------------------|-------------------------|
| ▼   | 46000  | 38 Inc. Co Operations  | Shreveport, LA 71101    |
| ▼   | 85500  | 3x Hinge League        | San Francisco, CA 94105 |
| ▼   | 35300  | 3X Wholesale Phosphate | Miami, FL 33147         |
| ▼   | 100100 | ACME Conduit Sales     | San Antonio, TX 78230   |

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## Navigation menu (formerly DDS File Active Function Keys)

The two pages we are enhancing, are formed by records described by CUSTDSP Displayfile.

All Display files are described using Razor Page syntax, where ExpoTags runtime support augments with DDS-like tag-helpers.

The Expo tag-helper that represents the “*DDS File Active Function Keys*” is named **DdsFunctionKeys** (tag-helper).

The default markup for Monarch Migrated Displayfiles shows the **DdsFunctionKey** tag-helper without any attributes (at the top of each Displayfile, inside the **DdsFile** tag-helper):

```
<form id="MonarchForm" method="post">
  <DdsFile DisplayPageModel="Model">

    <DdsFunctionKeys />

    <main role="main" class="display-element-uninitialized">
      .
      .
      .
    </main>
  </DdsFile>
</form>
```

<sup>2</sup> Commit: Branding all pages.

Let's change the **Location** attribute to the value "HorizontalBottom":

```
<DdsFunctionKeys Location="HorizontalBottom" />
```

The Navigation Menu looks much better at the bottom of the Page:

The screenshot shows the Sunfarm application interface. At the top is a green header with the Sunfarm logo and the tagline "always fresh". Below the header, the user's name "contreras" is on the left, and the title "M5 Customer Inquiry" is in the center. To the right of the title, the date "11/05/20" and time "19:20:32" are displayed. Below the title, there is a label "Position to name:" followed by an empty text input field. A menu of function keys is listed below the input field: "2=Update 3=Display sales 5=Delivery Addresses 7=Create sales record 9=Print sales (Online) 10=Print sales (Batch) 11=Orders". A table with three columns is displayed below the menu: "Sel", "Custno", and "Customer Name". The table contains 15 rows of data. At the bottom of the table, there is a label "F3=Exit". At the very bottom of the application window, there is a dark grey bar with the labels "Enter", "F3", "PgUp", and "PgDn".

| Sel | Custno | Customer Name                     | City / State / Zip        |
|-----|--------|-----------------------------------|---------------------------|
| ▼   | 46000  | 38 Inc. Co Operations             | Shreveport, LA 71101      |
| ▼   | 85500  | 3x Hinge League                   | San Francisco, CA 94105   |
| ▼   | 35300  | 3X Wholesale Phosphate            | Miami, FL 33147           |
| ▼   | 100100 | ACME Conduit Sales                | San Antonio, TX 78230     |
| ▼   | 64000  | Advantage Ranch Manufacturing Inc | Somersworth, TX 03878     |
| ▼   | 29400  | Advertising Agricultural 2nd Day  | Bryan, OH 43506           |
| ▼   | 48100  | Advertising Electric              | Gillette, A 82716         |
| ▼   | 68100  | Advertising Murray Ltd            | Palo Alto, CA 94303-0000  |
| ▼   | 86400  | Agency Way Loans                  | Merryville, TN 37801-3748 |
| ▼   | 64700  | Aims Analysis Group Singapore     | Wilkes-barre, PA 18701    |
| ▼   | 99500  | Aims College Corp Company         | Fairmont, MN 56031        |
| ▼   | 82600  | Aims Group Berry Compositing      | New York, NY 10004        |
| ▼   | 25300  | Aims Management Data              | Orlando, FL 32832         |
| ▼   | 17100  | Akashic City Insurance            | Cleveland, OH 46202       |

Clicking on any of the menu options will send to the Business Rules logic, the equivalent to an aid key being pressed at the keyboard. The use of Function keys in a modern application is uncommon, we can improve this by changing the labels displayed for the active keys (menu options). Note: experienced users may still use the **Fxx** key, if there is a physical keyboard that produces such code.

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## Re-labeling the Menu Options

Expo Tag-helpers that represent DDS Records, have an attribute called **KeyNames**, where we can override the default active key labels.

```
KeyNames="ENTER 'Submit'; F3 'Exit'; PageUp '◀ Page'; PageDown 'Next ▶';"
```

Where the value in single-quotes re-labels the text for the key name that precedes it. Instead of “ENTER” we show ‘Submit’, instead of “F3” we show ‘Exit’ etc.

