Appian
Academy

# Appian Step-by-Step #5

Exercise to Accompany
Design Appian Records Part 1: Accessing Your Data

The Appian Step-by-Step series consists of 12 exercises that accompany the courses in the Appian Developer learning path. Exercises build upon each other. Complete exercises in order and keep the app and all objects until you are done with the project.



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# Exercise 5: Records Part 1, Accessing Your Data

In this exercise, you will create a record for displaying all relevant information about the vehicle fleet to business users. Creating a record will involve several incremental steps:

1. Create the **AX Vehicle Record**.
2. Create a **Custom Record Field.**
3. Configure the **AX Vehicle Record List**.
4. Add a **User Filter** to allow users to filter the fleet by the mileage category.
5. Create a **Summary View Interface** to display the info about each vehicle.
6. Connect this interface to the **Summary View** in the AX Vehicle Record.
7. Create an **Action** for adding vehicles to the fleet.

Follow the steps below to create the vehicle record, and to set up all of the record features.

## Create the Vehicle Record

1. In your application, click **New**, and select **Record Type** from the dropdown menu.

2. Name it **AX Vehicle**, and type **AX Vehicles** in the **Plural Name** field. The plural name is what business users will see in their Site, so pick the name that will make sense to your business users. Note that application prefixes are not typically standard for record names. You are using a prefix for this exercise because a Vehicle record already exists in the AA Reference Application.

3. Add the description: "The list of vehicles managed by the AX application." Click **Create**.

4. In the next dialog, configure the security of the new record. Add **AX Registrars** and **AX Supervisors** as **Viewers**. Add **AX Administrators** as **Administrators**.

5. If your individual user is selected as an Administrator, remove your user from the list. Click **Save**.


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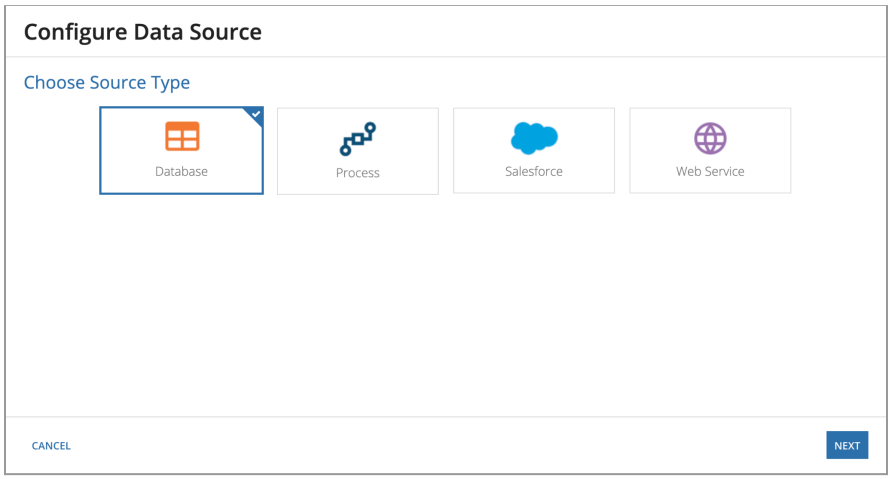
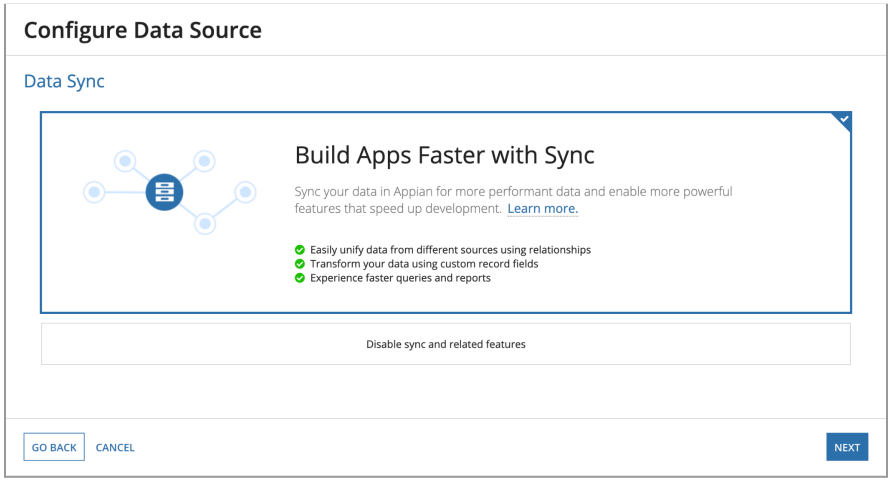
6. Click **Tell Us About Your Data**. In the **Configure Data Source** dialog, ensure that **Database** is selected, and click **Next**.




7. Select **Build Apps Faster with Sync**. Click **Next.**





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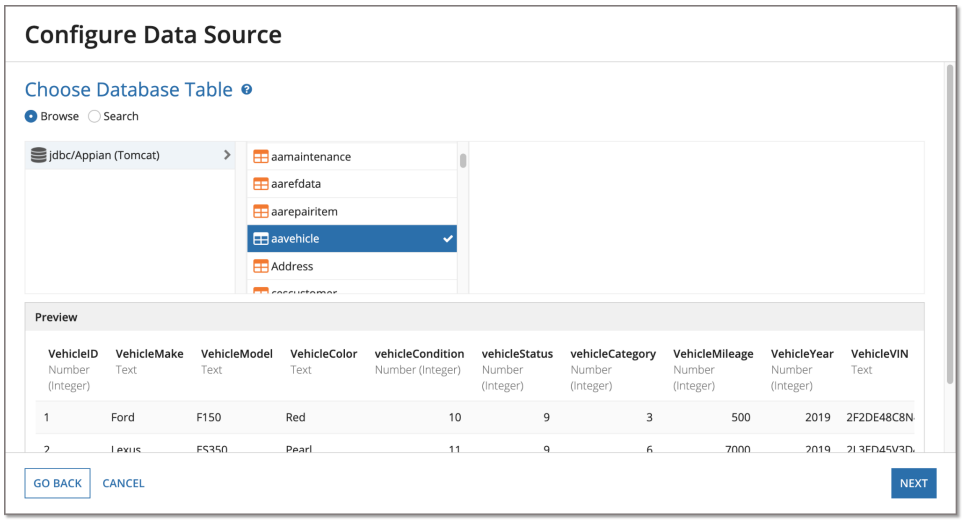
8. Under **Choose Database Table**, select **aavehicle**. Click **Next**.

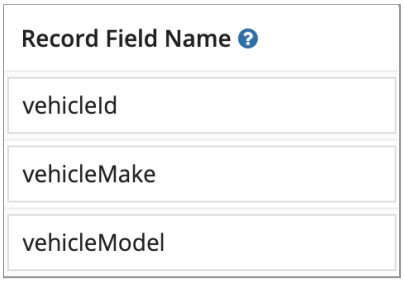



9. Let's add a source filter to exclude vehicles that are more than ten years old. In the next dialog, click **Add Filter**, and set the following configurations:

    - Select **VehicleYear** as the **Field**.
    - Select **>** as the **Condition**.
    - Enter **2011** as the **Value**.

    Click **Next**.

10. Preview the fields, and edit the Record Field Names to use camel casing. Camel casing refers to the practice of writing phrases without spaces and punctuation, where the separation of words is indicated with a capitalized letter (for example, vehicleStatus or maintenanceStartDate):




    Click **Finish**.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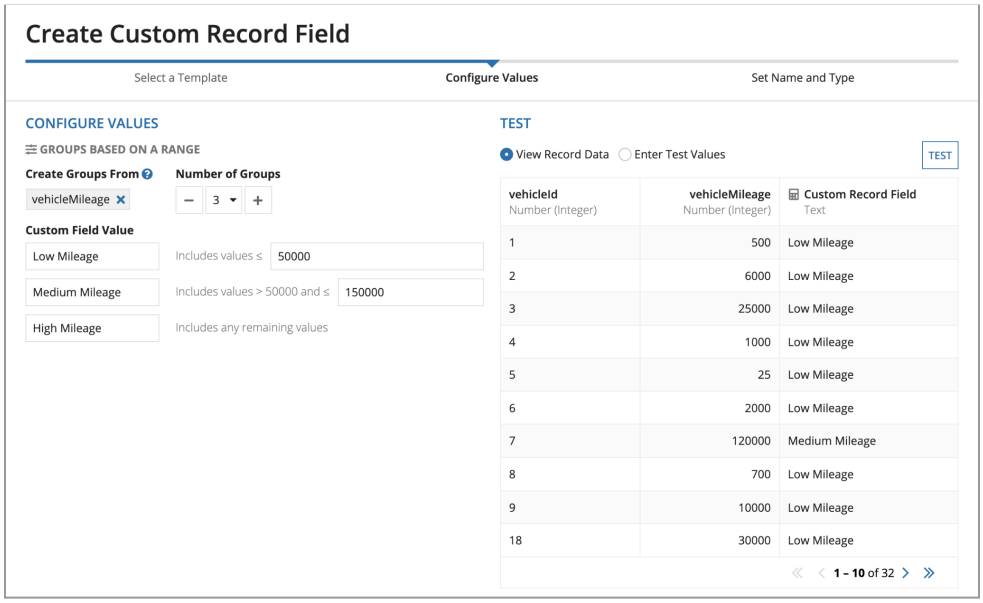
11. Before you build additional features, save the record by clicking **Save Changes**, and check how the record looks from the business user perspective. Click the link located next to the record name:


## Create a Custom Record Field

Before you configure the record list, you will first create a custom record field. For your app, you will create a new custom record field that displays a vehicle's mileage category: Low Mileage, Medium Mileage, or High Mileage. You will add this new custom record field to your record list in the next section. Follow the steps below to create a custom record field.

1. Click **Data Model** in the left menu, and then click **New Custom Record Field**.
2. In the **Select a Template** section, click **Groups Based on a Range**. Click **Next**.
3. In the **Configure Values** section, select **vehicleMileage** in the **Create Groups From** field.
4. Set the **Number of Groups** field to **3**.
5. Name Group 1 **Low Mileage**, and set the Upper Limit field to **50,000**. Name Group 2 **Medium Mileage**, and set the Upper Limit field to **150,000**. Name Group 3 **High Mileage**.
6. Click **TEST** to preview how the custom record field will display:




Click **Next**.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7. In the **Set Name and Type** section, update the name of the custom record field to **mileageCategory**.

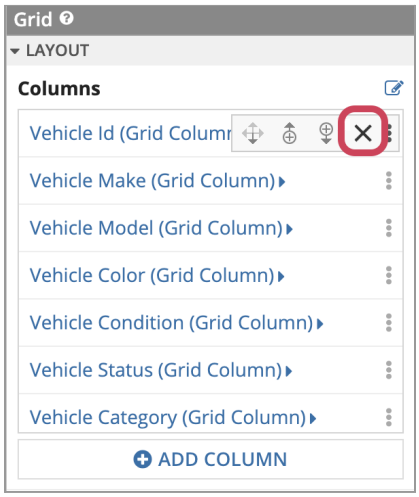
8. Click **Create**, then **Save Changes** to save the record.

## Configure the Record List

Next, you will edit the columns of the vehicles grid to display the following columns: Vehicle VIN, Make, Model, Year, Next Maintenance Date, Status, Added By, and Image. You will sort the grid by the vehicle make, condition, category, and status, and you will add a clickable link to the vehicle VIN column. Later, you will connect this clickable link to an interface with the relevant information for each vehicle. Follow the steps below to configure the record grid.

1. Click **List** in the left-hand menu, then click **Edit List**.

2. In the **Edit Record List** dialog, review the list of fields. You will keep only these fields: VIN, Make, Model, Year, Next Maintenance Date, Added By, and Image. To delete all other fields, click the in-line **X** buttons next to those fields:





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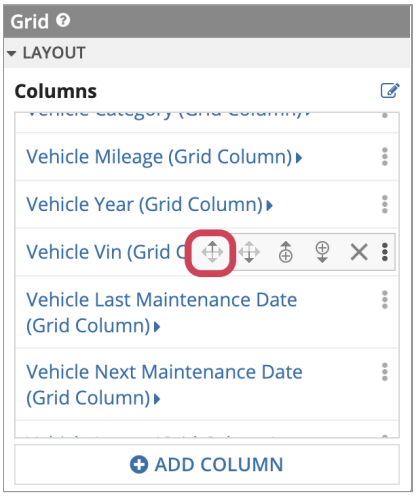
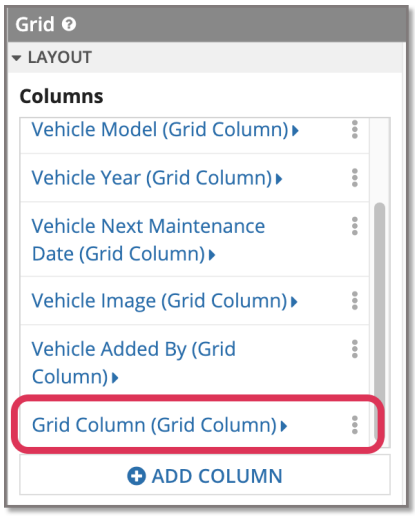
3. Move the **VIN column** up so that it is the first column in the grid. Use the in-line **arrow** to move this column.




4. Click **Add Column**, and select the newly created **Grid Column** link to drill into the column.




5. Update the label name to **Mileage Category**.
6. Select **mileageCategory** in the **Sort Field** field**.**
7. Select **mileageCategory** in the **Display Value** field.
8. Move the **Image** column so that it is the last column in the grid. Use the in-line **arrow** to move this column.
9. To simplify the column names, drill into each column, and remove "**Vehicle"** from all of the column labels.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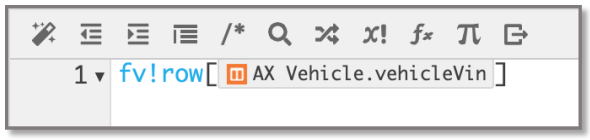
## Edit Record List Columns

Now that you have the columns you need for your record list, you can start editing individual record list columns.

1. Transform the **VIN field** into a clickable link:

    - Select **VIN**, then click the **Display Options** button.
    - In the **Display Options** dialog, select **Record Link**.
    - Under **Display Value**, click **Link**.
    - Under **Links**, click **List of Links**.
    - Click **Record Link (Record Link)**.
    - Click the **Expression Editor** icon next to **Label**, and delete all text in the **Expression Editor**.
    - Type **fv!** and then select **row**.
    - Type square brackets **[ ]**, enter **recordType!** and then select **AX Vehicle**.
    - Type a period, and then select **Fields** and **vehicleVIN**.
    - Click **OK**. Your expression will look like this:

        ```
        fv!row[AX Vehicle.vehicleVin]
        ```

        Click **OK**.

    - Back in the **Record Link** section, click the **Expression Editor** icon next to **Record Type**.
    - In the **Expression Editor**, delete all text.
    - Type **recordType!**, and then type and select **AX Vehicle**. Click **OK**.
    - Click the **Expression Editor** icon next to the **Identifier** field.
    - Delete the expression.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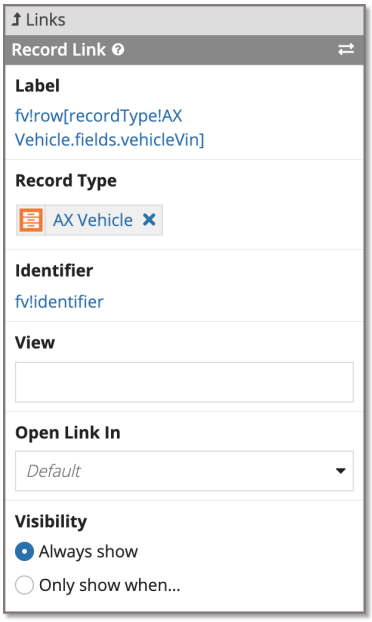
- Type **fv!** and select **identifier**. Click **OK**:




2. Remove the link from the **Make** column by following the steps below:

   - Under **Columns** in the left pane, click **Make**.
   - Under **Display Value**, click **Clear** to remove the link.
   - Select **vehicleMake** from the dropdown.

3. Format the **Added By** column by following the steps below:

   - Under **Columns** in the left pane, click **Added By**.
   - Click the **Expression Editor** next to **Display Value**. You will call in the expression rule you created in Exercise 4. To use the expression rule, clear the existing text, and enter the following:

     ```
     rule!AX_DisplayUser(fv!row[recordType!AX
     Vehicle.fields.vehicleAddedBy])
     ```

     **rule!** is a type of object prefix. Use **rule!** to indirectly reference an expression rule or interface. **fv!row** is a type of function variable. This function value sets the display value of every column and contains all the data for the entire row. Notice how the names in the Added By column are now formatted correctly.

4. Format the **Image** column by following the steps below:

   - Under **Columns**, click **Image**.
   - Under **Display Value**, click **Display Options**.
   - Select **Document Image**.
   - Under **Display Value**, click **Image**.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- Under **Images**, click **Document Image**.
- Under **Document**, click **a!EXAMPLE_DOCUMENT_IMAGE()**, and clear everything in the expression editor.
- Enter the expression:

```
fv!row[recordType!AX Vehicle.fields.vehicleImage
```

- Click **OK**. You will see the vehicle images appear.

5. Adjust the alignment and width for the columns.

    - Click on each column and scroll to the **Alignment** and **Width** fields.
    - Adjust the columns as needed. We suggest following our best UX practices by keeping the text left-aligned and numbers right-aligned. Leave the default setting for width.

6. Click **OK**, and then **Save Changes**. Remember that if you want to review the updated grid as it appears to the business user, you can do so by clicking the link located next to the record name.

## Add a User Filter

You will now add a user filter to the record list to allow business users to filter for vehicles by mileage category. Follow the steps below to build this user filter.

1. In the **AX Vehicle** record, select **User Filters** in the left navigation. In the **User Filters** section, click **New User Filter**.

2. Select **Create New Filter**, and configure the following items:

    - Type **Mileage Category** in the **Name** field.
    - Type **"Mileage Category"** in the **Label** field. Note that you are using quotation marks because it is an expression.
    - Select **mileageCategory** from the **Field** dropdown.
    - Click **New Option**, and type **"Low Mileage"** in both the **Option Label** and **Value** expression editors. Leave **=** in the **Operator** field, and click **Save Filter Option**.


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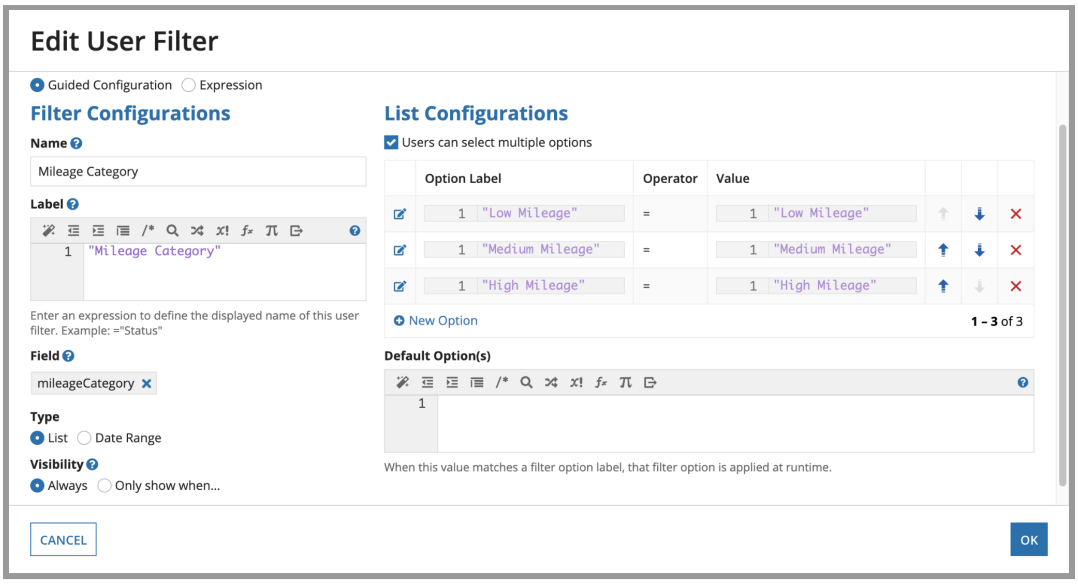
- In the same manner, create the **Medium Mileage** and **High Mileage** options:

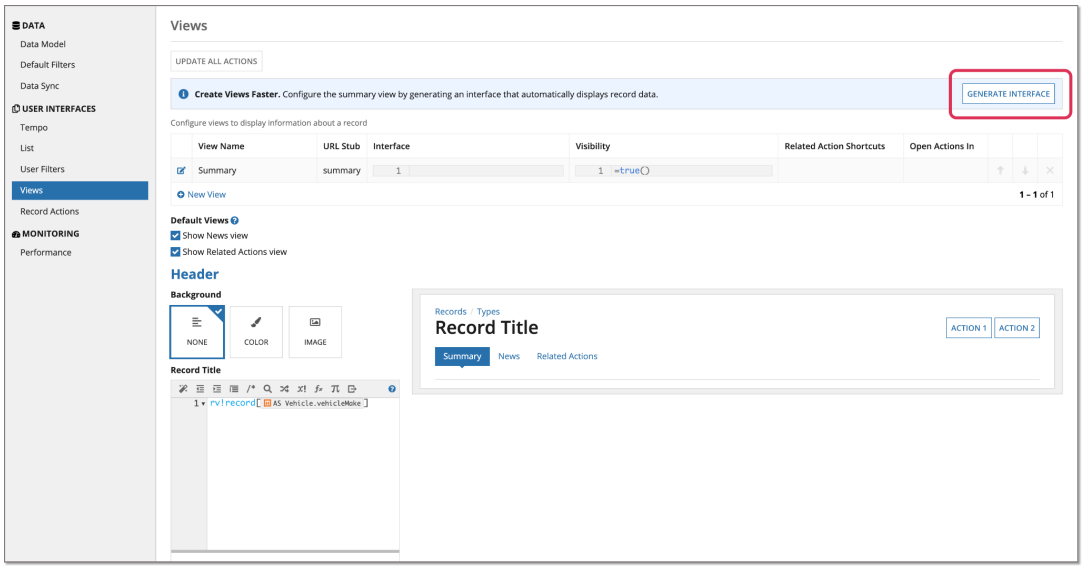



- Click **OK**, then **Save Changes**. Click the link located next to the record name to test the user filter.

## Generate the Summary View Interface

In this section, you will create an interface to display the summary vehicle information in the AX Vehicle record. Later, you will link this interface to the vehicle grid. Once business users review the vehicle grid, they will be able to click the VIN link to access additional vehicle information. Follow the steps below to build the summary interface.

1. From the **Views** page of the **AX Vehicle** record, click **GENERATE INTERFACE**.





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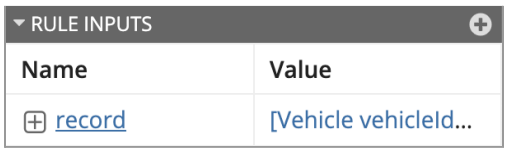
2. Name the interface **AX_VehicleSummary** and add a description: "A reusable section to display the read-only vehicle details."

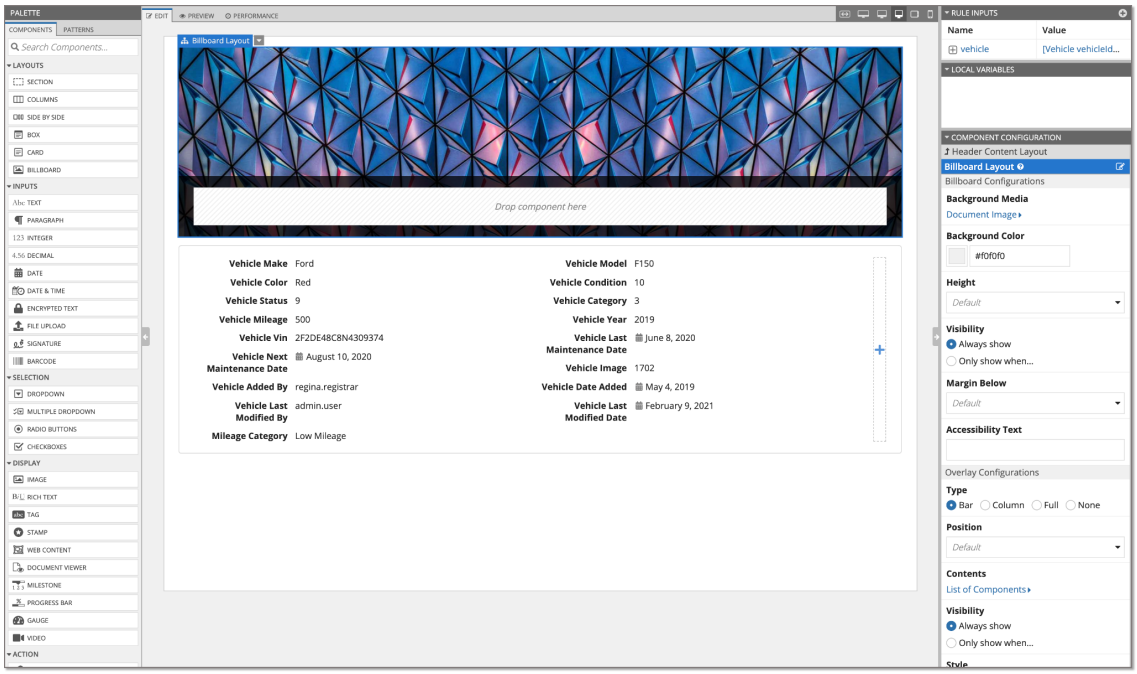
3. Select the **AX Interfaces** folder in the **Save In** field. Click **Create**.

4. Once the interface is generated, click the **record** link in the **Rule Inputs** pane.

5. Replace the rule input name with **vehicle**. Click **OK**.




6. Use the **Components Palette** to find components that you can use in your interface. Drag and drop the **Billboard** component above the vehicle details:





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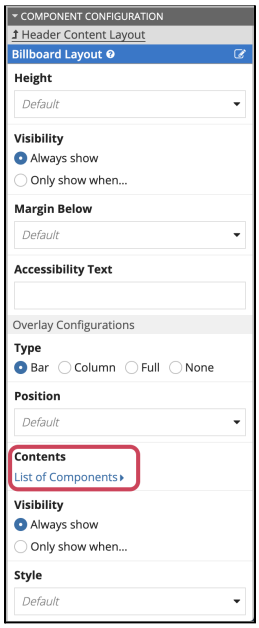
7. Click the **Billboard Layout** in the canvas to make sure it is selected. In the **Component Configuration** pane for the Billboard Layout, scroll down to **Contents**, and click **List of Components**:



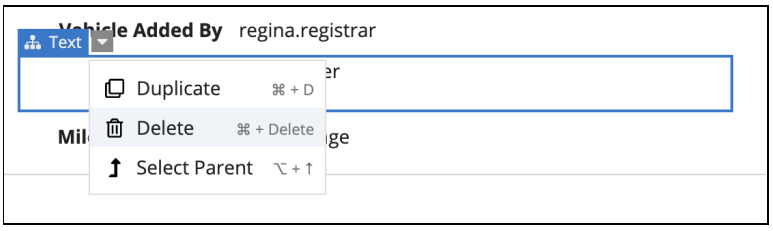

8. Click **Add Component**, and select **Rich Text**. Click the **Rich Text** link.

9. In the **Display Value** editor, type **Vehicle Information**. Using the editor toolbar, change the size to **Medium Header**. We suggest following our best UX practices by using varied font features to highlight the page title.

10. Under **Alignment**, select **Center** from the dropdown menu.

11. Select the **Card** layout with the vehicle details, and configure the following items:

    - Remove the following fields: **Vehicle Last Maintenance Date**, **Vehicle Last Modified Date**, **Vehicle Added By**, **Vehicle Image**, and **Vehicle Last Modified By**. To remove fields, click an **individual text box**, and select **Delete** from the dropdown menu.





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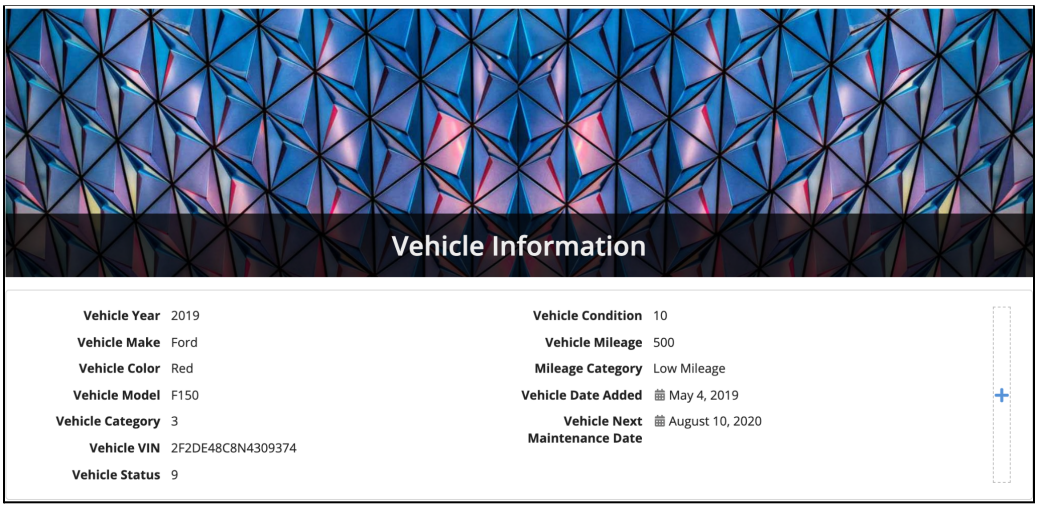
- Rearrange the fields by dragging and dropping the text boxes. Rearrange the fields to match the following configuration:




- Remove **"Vehicle"** from the labels. To rename a label, click an **individual text box**, and remove **Vehicle** from the **Label** field.
- Click **Save Changes**.

## Add a Vehicle Image

1. Click the **+** next to the second column to create a third column:


2. Drag and drop an **Image** component into the new column.

3. Click the **+** in the **Image** field, and select **Document Image**. In the **Component Configuration** pane, click **a!EXAMPLE_DOCUMENT_IMAGE()**. Delete all text in the **Expression Editor**. Type the following expression:

```
ri!vehicle[recordType!AX Vehicle.fields.vehicleImage]
```

   Use the auto-suggestions to populate your expression with the correct data. Click **OK**.

4. You won't need a label for the **Image** field. Delete the **Image** label directly on the canvas. Alternatively, use the **Component Configuration** pane for the **Image** component to delete all text in the **Label** field.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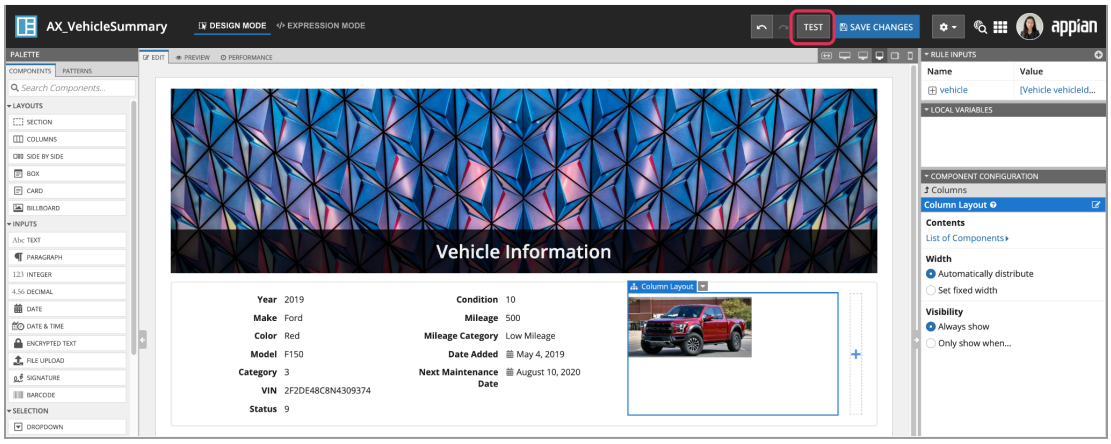
5. Click **Test** to review the test data used to populate the interface.




6. The expression in the Expression Editor uses **a!queryRecordType** to retrieve record data. Click **Set as default test values**, then **Test Interface**.

7. Click **Save Changes**.

## Add Interface to Summary View

1. Now that your interface is updated, return to the **AX Vehicle** record, and click **Views** in the left navigation.

2. Click the **Expression Editor** icon next to **Summary**:


3. In the **Expression Editor**, reference the interface you just made by clearing the existing text and entering the following expression:

```
rule!AX_VehicleSummary(vehicle: rv!record)
```

Click **OK**.

4. In the **Record Title Expression Editor**, clear all text, and enter the following expression:

```
rv!record[recordType!AX Vehicle.fields.vehicleYear] & " " &
rv!record[recordType!AX Vehicle.fields.vehicleMake] & " " &
rv!record[recordType!AX Vehicle.fields.vehicleModel]
```

This expression will create a dynamic title for each vehicle summary view. Instead of a generic title, the business user will see the year, make, and model of the vehicle they are viewing. Click **Save Changes**.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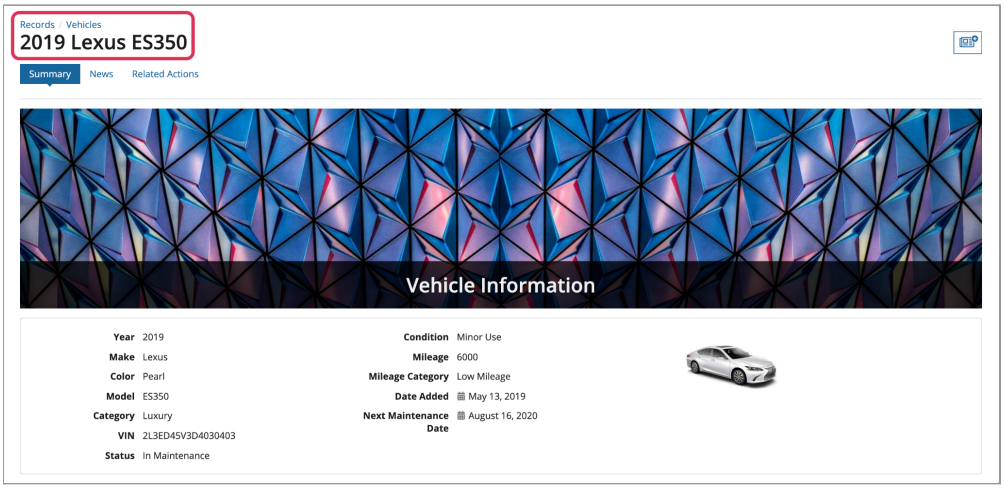
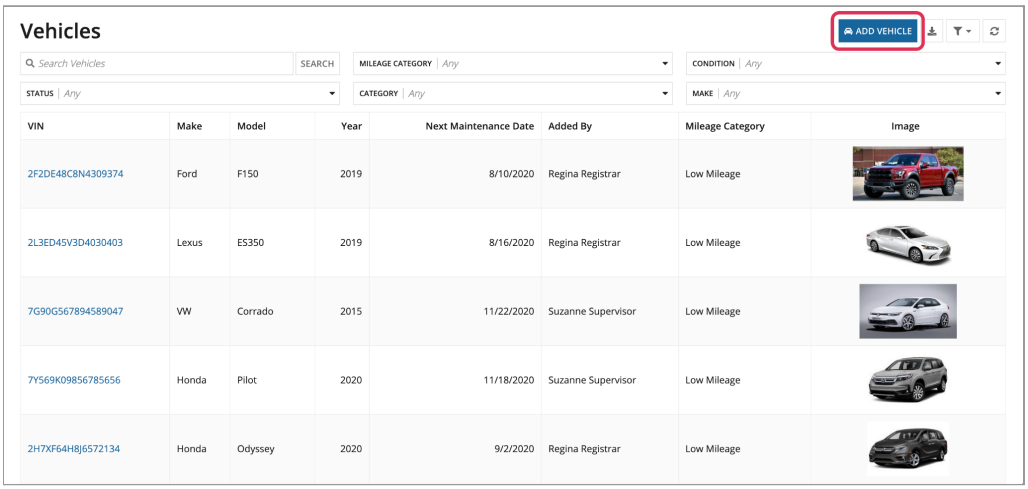
5. Preview the vehicle summary view with the new dynamic title. To preview, click the link next to the AX Vehicle record name. Select any vehicle to access its summary view page. Your summary view page should now display a dynamically generated title.




## Create a Record Action

In this exercise, you will create a Record Action that will allow Registrars to add a new vehicle to the fleet. A record action will allow Registrars to add a new vehicle by clicking a button from the record list and filling out a form designed for this purpose:




Follow the steps below to set up a record action.

1. In the **AX Vehicle** record, select **Record Actions** in the left navigation.
2. Click **GENERATE A RECORD ACTION**.
3. In the **Choose Your Action** dialog, select **Create**. Click **Next**.
4. Name the action **Add Vehicle**, and add a description, "Action for adding a new vehicle to the fleet." Click **Next**.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5. Review the objects that Appian generates for this action. For this action, Appian generates the following nine objects:

    - Interface for adding a new vehicle
    - Process model for adding a new vehicle
    - Expression rule for creating a vehicle's display name
    - Vehicle Custom Data Type (CDT)
    - Application Data Store
    - Data store entity for Vehicle data references
    - All Users group
    - Rules and Constants folder
    - Process Model folder

6. Make a few changes to the action objects by clicking on the **edit icon** next to each action:

    - Rename AX_createVehicle to **AX_AddVehicle**.
    - Replace AX Users with the existing object **AX All Users**.
    - Replace AX Rules & Constants with the existing object **AX Rules**.
    - Replace AX Models with the existing object **AX Process Models**.

7. Click **Generate Action**. After Appian successfully creates the record action and supporting objects, click **Close**.

8. Click **Save Changes.** Preview the record with the Add Vehicle record action to see how the new feature displays to the business user. To preview, click the link next to the AX Vehicle record name.


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