

## **Introduction:**

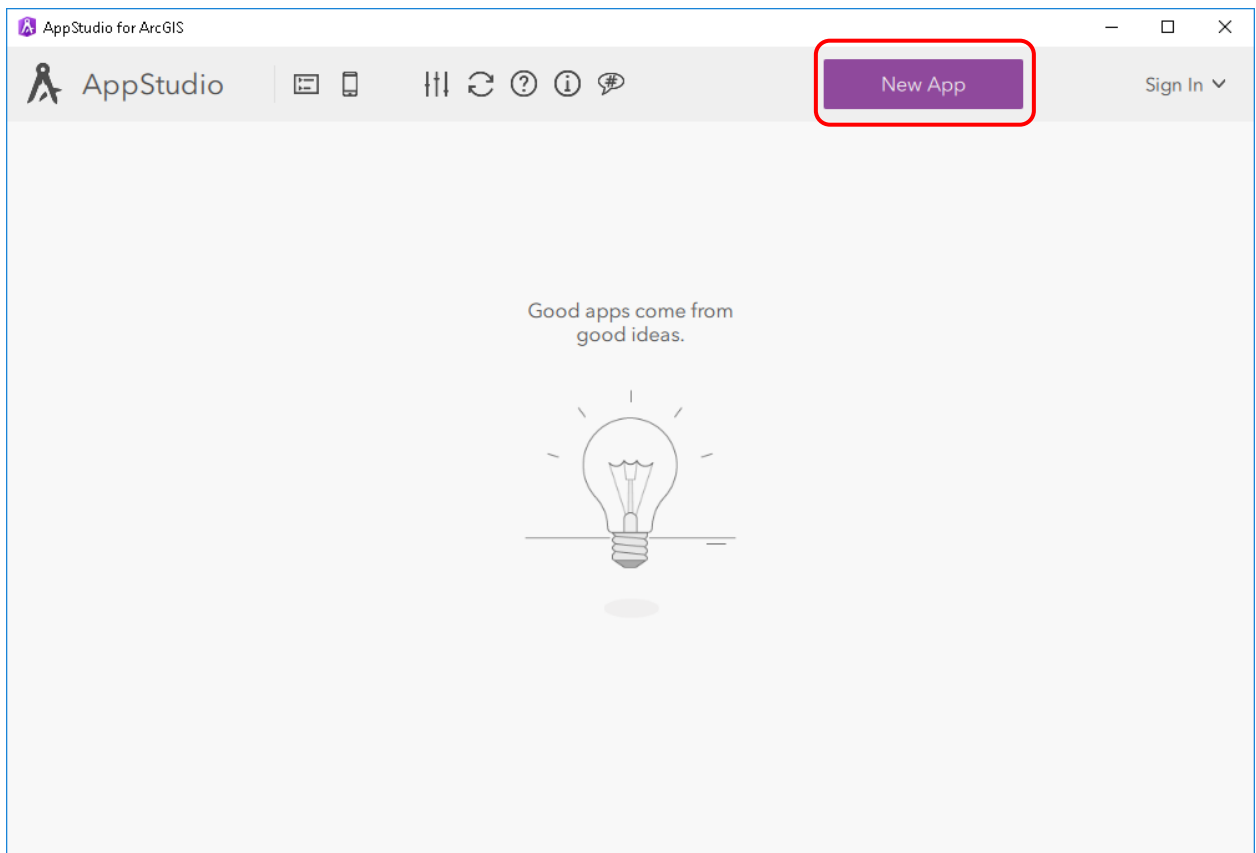
This tutorial will explain how to change the basemap from a drop-down menu. This tutorial will be conducted within the AppStudio for ArcGIS/QTCreator environment. QTcreator is bundled within AppStudio for ArcGIS.

If you do not have AppStudio for ArcGIS installed you can download it here: <http://doc.arcgis.com/en/appstudio/download/>.

## **How to Change the Basemap:**

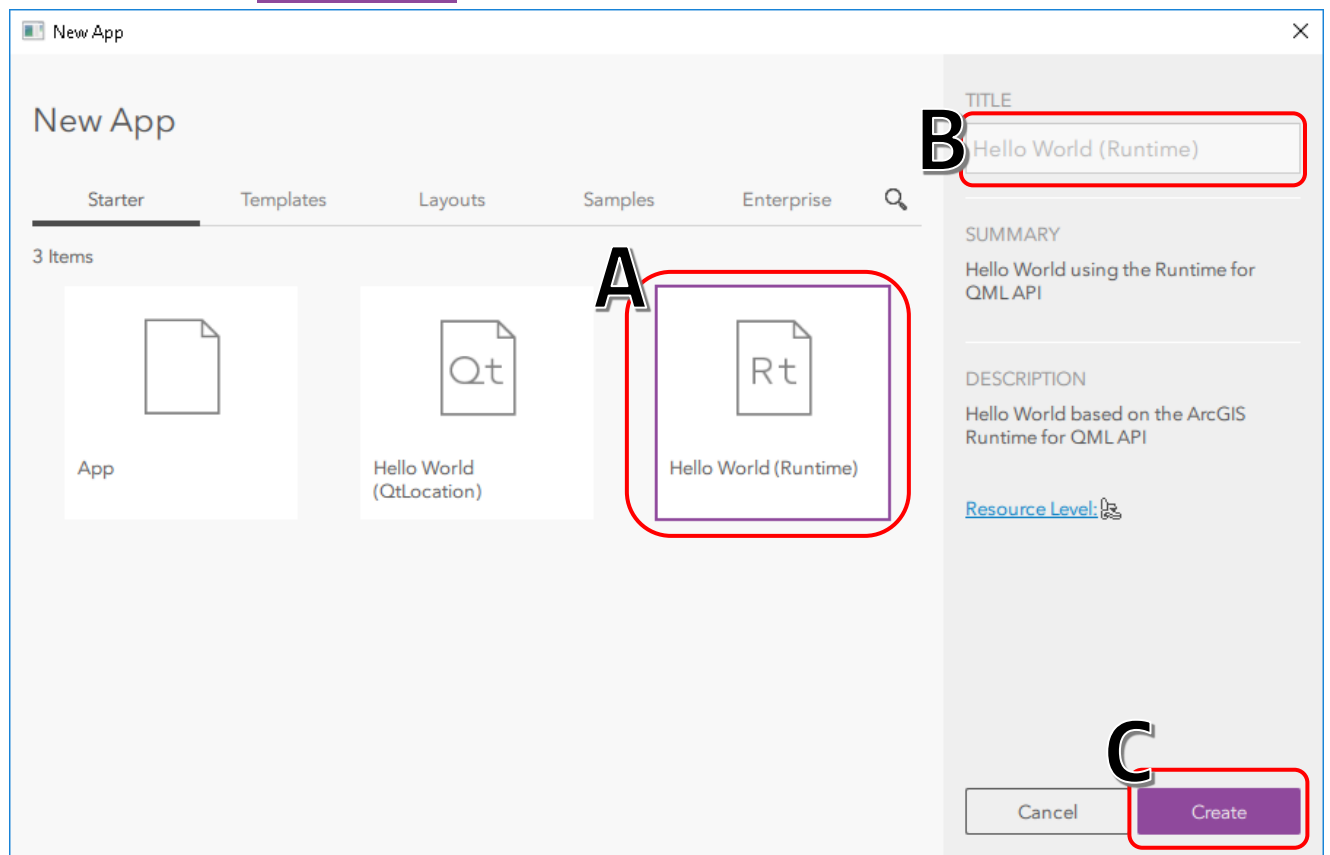
1. With AppStudio for ArcGIS open, choose

New App



2. A new window will open showing a number of different headings. For this tutorial, we will: A: App option, B: give the app a title and C: click

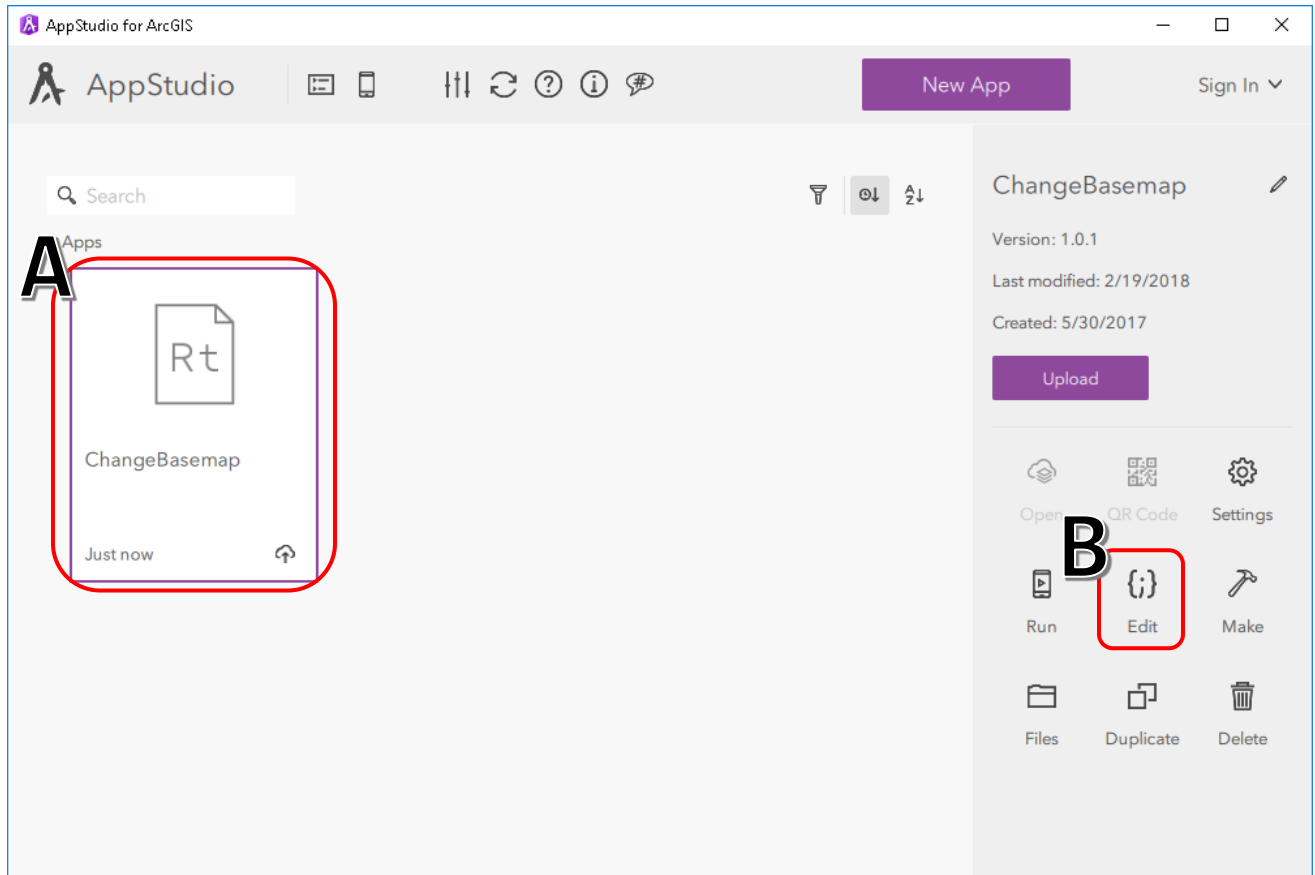
Create



3. Clicking **Create** in step 2 will bring you back to the home screen where you will see your newly created app. In this example it was named 'ChangeBasemap', but yours will reflect the title you chose.

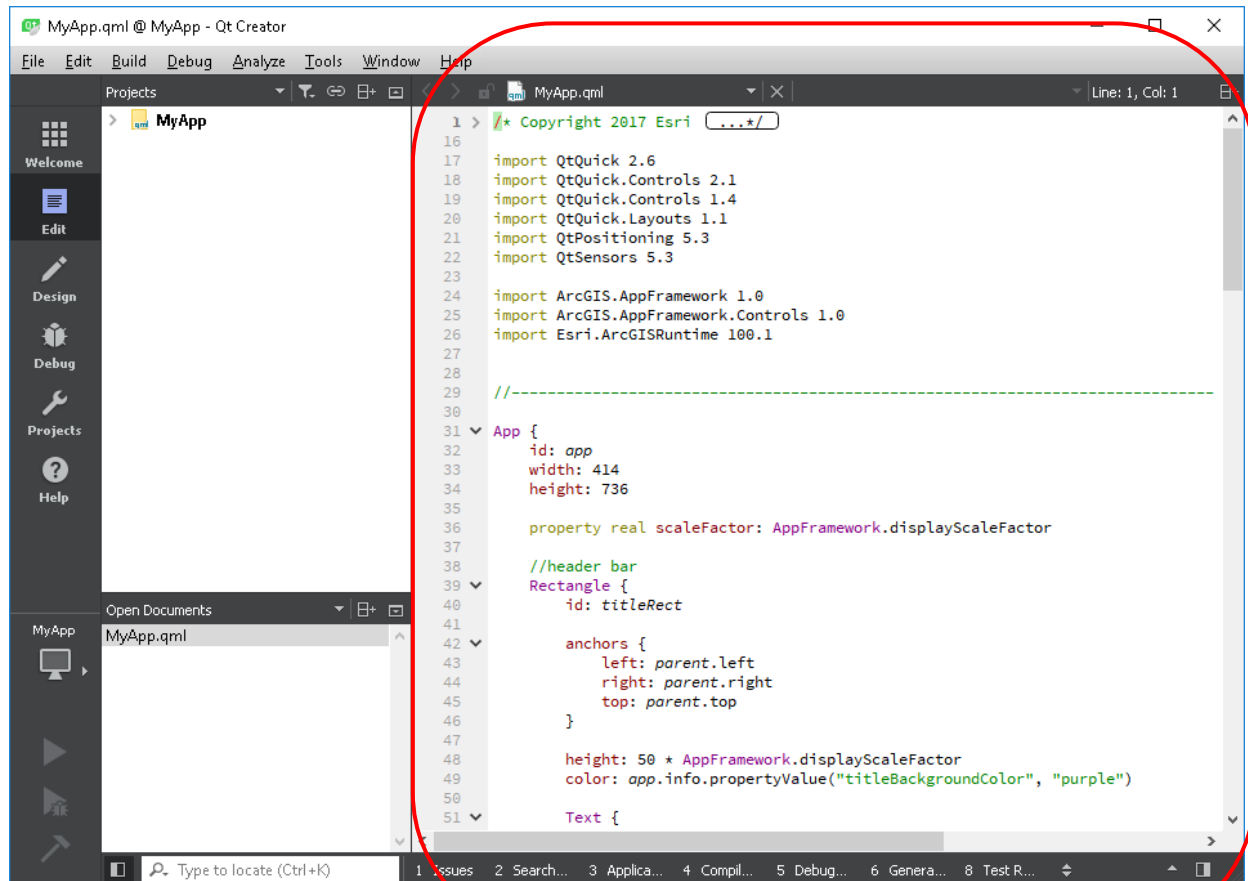
A: Select your newly created app

B: Click **Edit** to open your app in QTCreator



4. With QtCreator now open, you will see that your application already contains some code. That is because the Hello World (Runtime) app that we created already contains the code to display a map, find user location and return to a default extent.

If you would like to create a map from scratch with different functionality, information on how to do so can be found here:  
<https://developers.arcgis.com/qt/latest/qml/sample-code/sample-qt-displaymap.htm>



The code needed to place a drop-down menu to change basemaps is:

```
ComboBox {
    id: comboBoxBasemap
    anchors {
        left: parent.left
        top: parent.top
        margins: 15 * scaleFactor
    }
    width: 175 * scaleFactor
    model: ["Topographic", "Streets", "Imagery", "Oceans"]
    onCurrentTextChanged: {
        // Call this JavaScript function when the current
selection changes
        if (map.loadStatus === Enums.LoadStatusLoaded)
            changeBasemap();
    }

    function changeBasemap() {
        // Determine the selected basemap, create that type, and
set the Map's basemap
        switch (comboBoxBasemap.currentText) {
            case "Topographic":
                map.basemap =
ArcGISRuntimeEnvironment.createObject("BasemapTopographic");
                break;
            case "Streets":
                map.basemap =
ArcGISRuntimeEnvironment.createObject("BasemapStreets");
                break;
            case "Imagery":
                map.basemap =
ArcGISRuntimeEnvironment.createObject("BasemapImagery");
                break;
            case "Oceans":
                map.basemap =
ArcGISRuntimeEnvironment.createObject("BasemapOceans");
                break;
            default:
                map.basemap =
ArcGISRuntimeEnvironment.createObject("BasemapTopographic");
                break;
        }
    }
}
```

This block of code needs to be input into the existing code in order to create the basemap drop-down menu.

To do so we will place it within the existing code that contains all the code associated with the map (i.e. the code needed to show a map, the code to for a button that finds the user's location, etc.)

In QtCreator, within the code scroll down until you see:

```
88         // add a basemap
89     Map{
90         id:map
91
92         BasemapTopographic{}
93     initialViewpoint: ViewpointCenter {
94         id:initialViewpoint
95     center: Point {
96         x: -11e6
97         y: 6e6
98         spatialReference: SpatialReference {wkid: 102100}
99     }
100     targetScale: 9e7
101 }
102 }
103
```

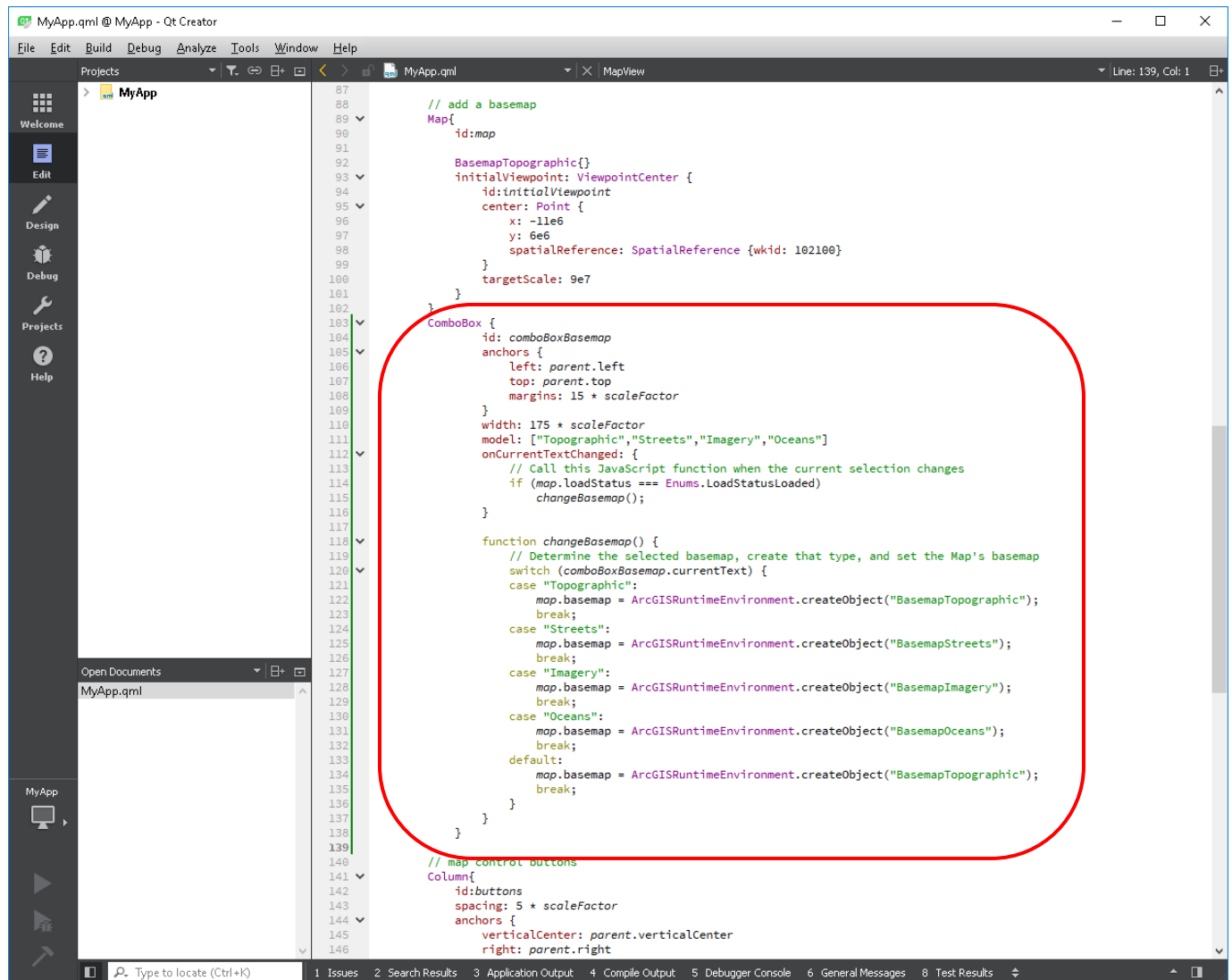
This is the code that displays the default basemap in your app.

We need to input the basemap drop-down menu code below this code, but above the next section of code:

```
88         // add a basemap
89     Map{
90         id:map
91
92         BasemapTopographic{}
93     initialViewpoint: ViewpointCenter {
94         id:initialViewpoint
95     center: Point {
96         x: -11e6
97         y: 6e6
98         spatialReference: SpatialReference {wkid: 102100}
99     }
100     targetScale: 9e7
101 }
102 }
103
104     // map control buttons
105     Column{
106         id:buttons
107         spacing: 5 * scaleFactor
108     anchors {
109         verticalCenter: parent.verticalCenter
110         right: parent.right
111         margins: 5 * scaleFactor
112     }
113
```

**The basemap drop-down menu code goes here**

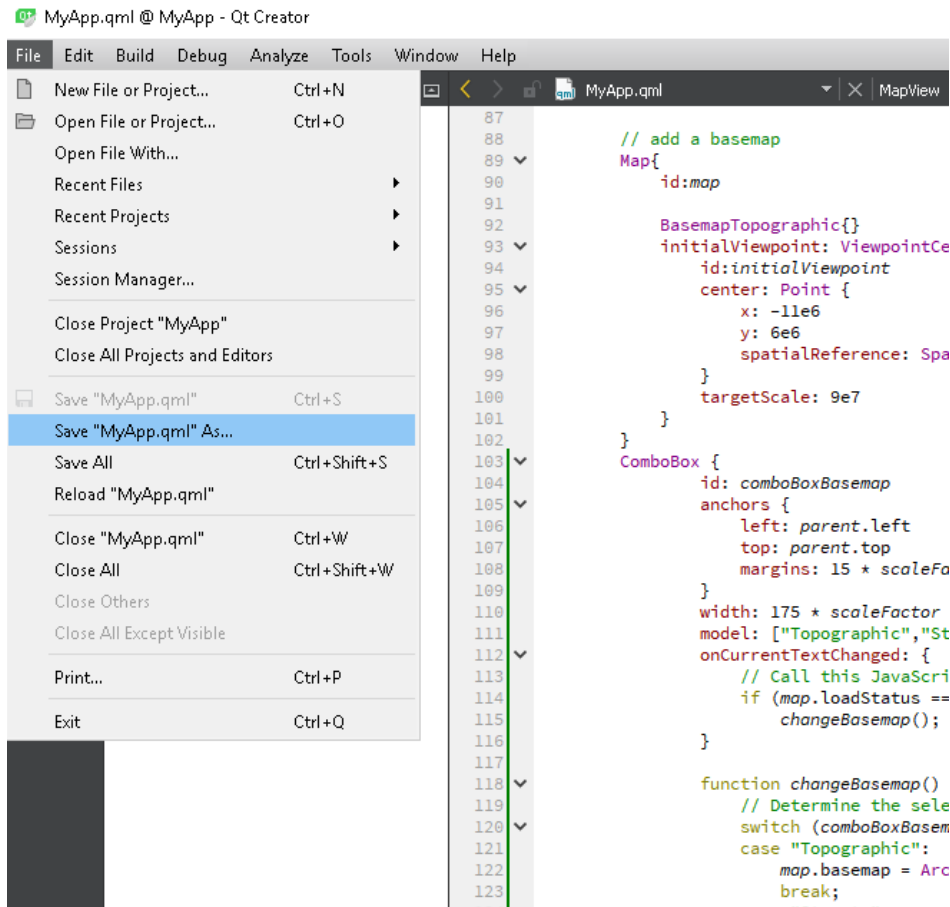
When the basemap drop-down menu code is input into the existing code, it should look like this:



```
87
88 // add a basemap
89 Map{
90     id:map
91
92     BasemapTopographic{
93         initialViewpoint: ViewpointCenter {
94             id:initialViewpoint
95             center: Point {
96                 x: -11e6
97                 y: 6e6
98                 spatialReference: SpatialReference {wkid: 102100}
99             }
100             targetScale: 9e7
101         }
102     }
103
104     ComboBox {
105         id: comboBoxBasemap
106         anchors {
107             left: parent.left
108             top: parent.top
109             margins: 15 * scaleFactor
110         }
111         width: 175 * scaleFactor
112         model: ["Topographic","Streets","Imagery","Oceans"]
113         onCurrentTextChanged: {
114             // Call this JavaScript function when the current selection changes
115             if (map.loadStatus === Enums.LoadStatusLoaded)
116                 changeBasemap();
117         }
118
119         function changeBasemap() {
120             // Determine the selected basemap, create that type, and set the Map's basemap
121             switch (comboBoxBasemap.currentText) {
122                 case "Topographic":
123                     map.basemap = ArcGISRuntimeEnvironment.createObject("BasemapTopographic");
124                     break;
125                 case "Streets":
126                     map.basemap = ArcGISRuntimeEnvironment.createObject("BasemapStreets");
127                     break;
128                 case "Imagery":
129                     map.basemap = ArcGISRuntimeEnvironment.createObject("BasemapImagery");
130                     break;
131                 case "Oceans":
132                     map.basemap = ArcGISRuntimeEnvironment.createObject("BasemapOceans");
133                     break;
134                 default:
135                     map.basemap = ArcGISRuntimeEnvironment.createObject("BasemapTopographic");
136                     break;
137             }
138         }
139     }
140
141     // map control buttons
142     Column{
143         id:buttons
144         spacing: 5 * scaleFactor
145         anchors {
146             verticalCenter: parent.verticalCenter
147             right: parent.right
```

Now it is time to save your work.

To save your work click 'File' → 'Save MyApp.qml As...' and choose a name and place where you would like to save.

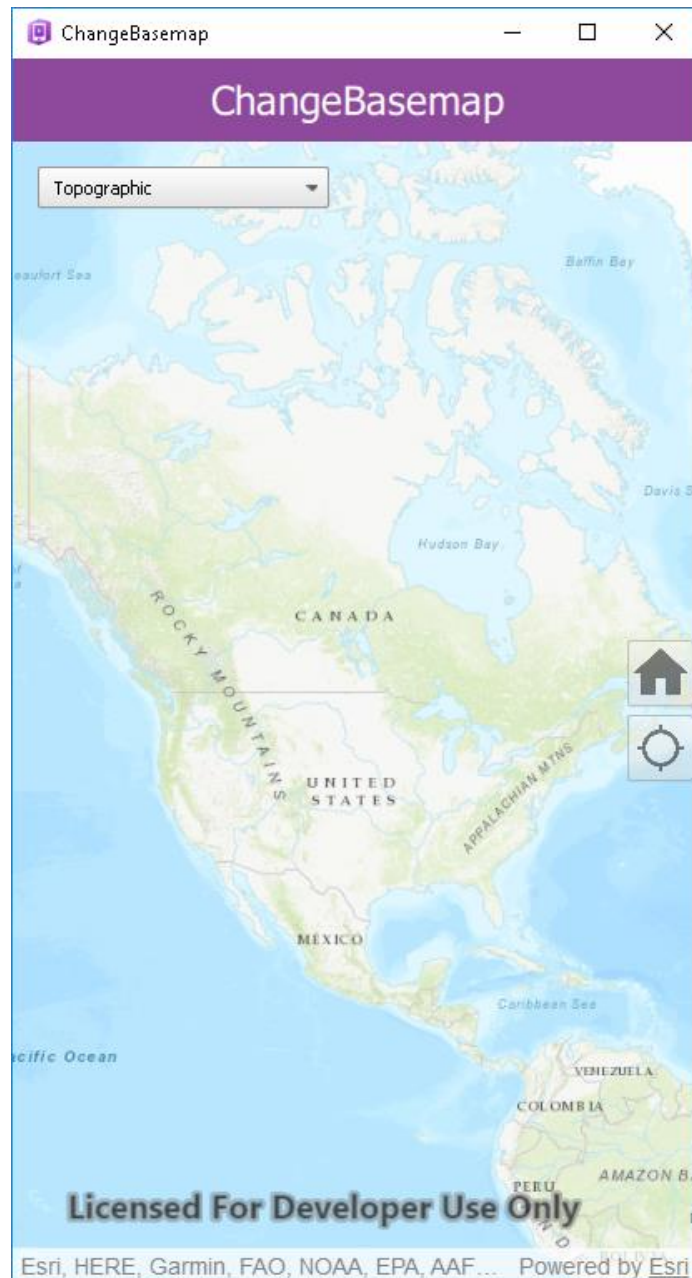


**DO NOT FORGET TO SAVE YOUR WORK!!!**



Once your work is saved, you can return to AppStudio for ArcGIS and double click on your app to launch it.

If you have correctly placed the code, the drop-down menu to change the basemap should appear and the app you have created should look like the example below and have a functioning drop-down that changes the basemap.



If your app looks like this and the drop-down works, congratulations!

If it does not, go back and make sure you have copied all the code correctly and make sure you have placed it properly.

If all else fails, you may copy/paste all the code to produce the above map and drop-down from:

<https://github.com/kboquel3/Lab4/blob/master/code>