
Diseño de Sistemas Interactivos

Curso 2023 - 2024

Profesor: José Manuel Velasco

Despacho 309, 3ª planta. Facultad de Informática.

Laboratorio 2: Introducción a UQuery.

UI Toolkit

- UQuery

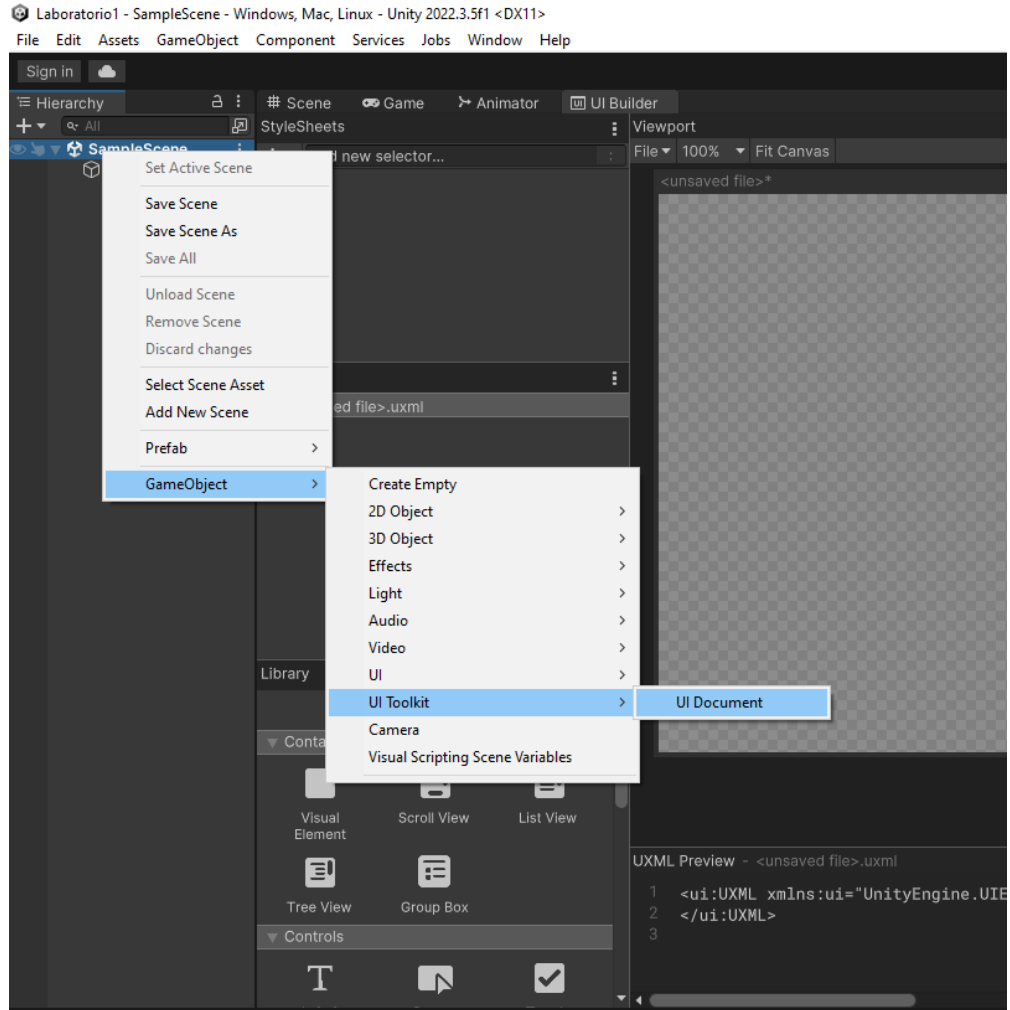
- UQuery Builder

- Query

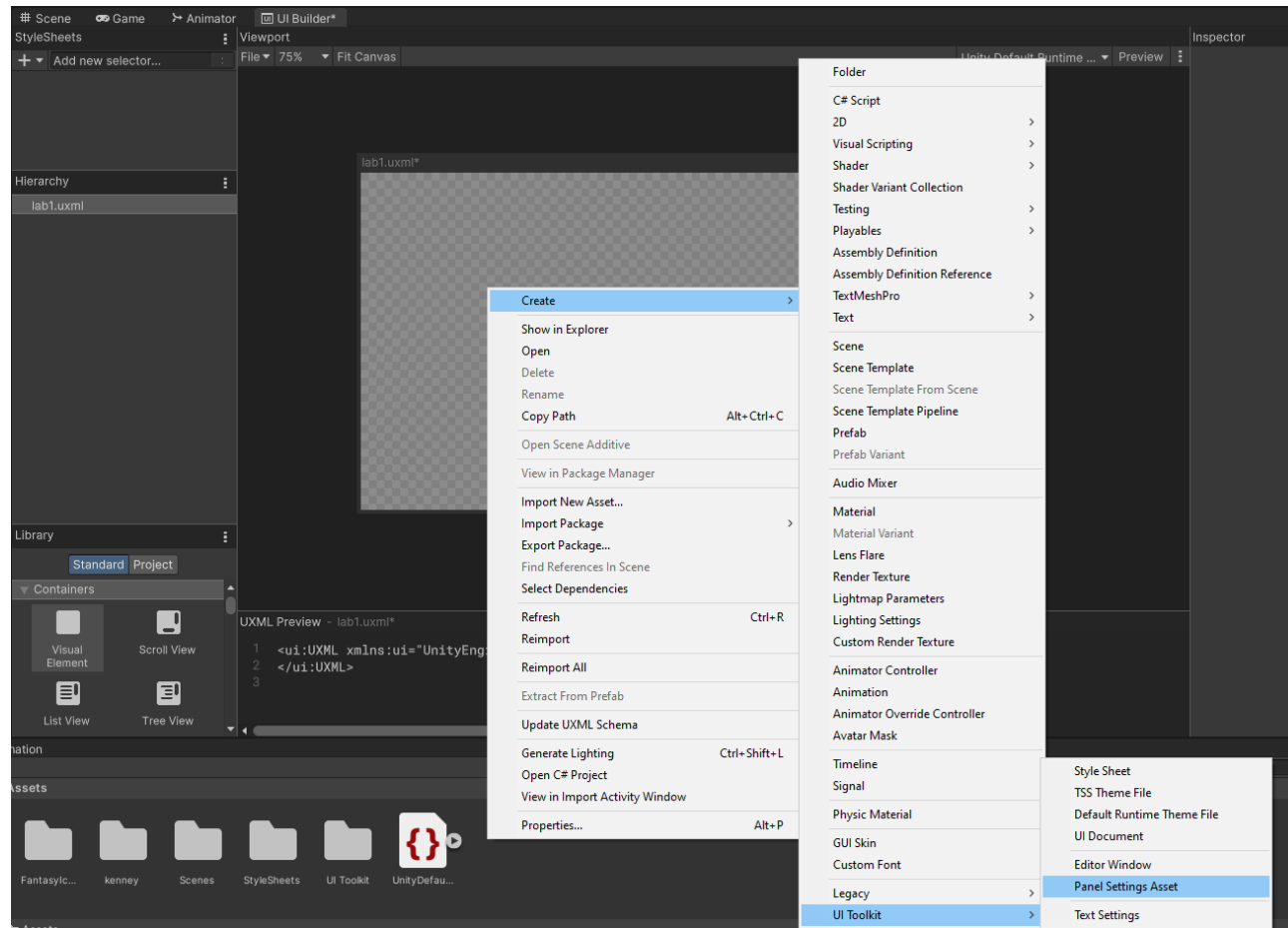
- Q

- Personalizar controles

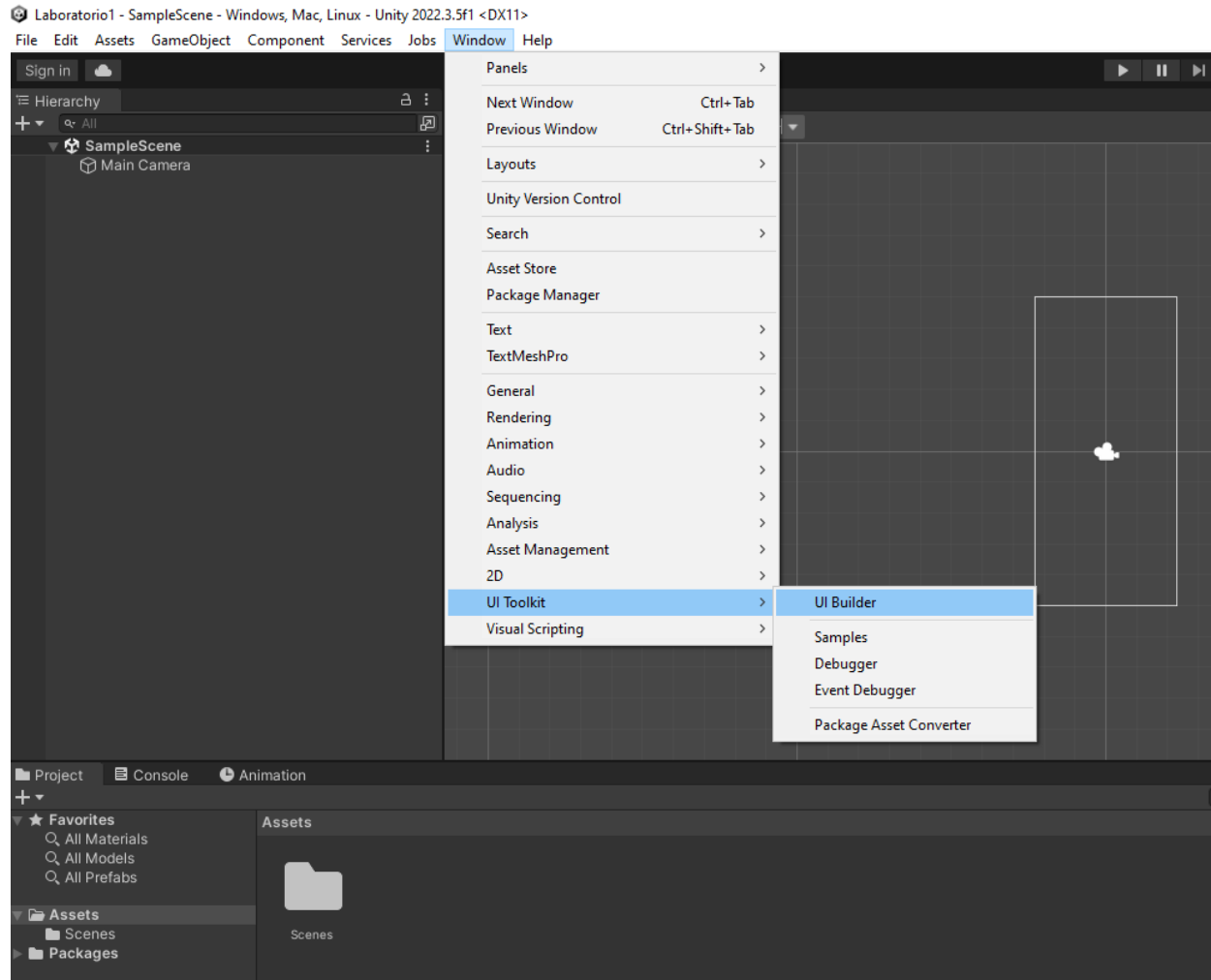
UI Document



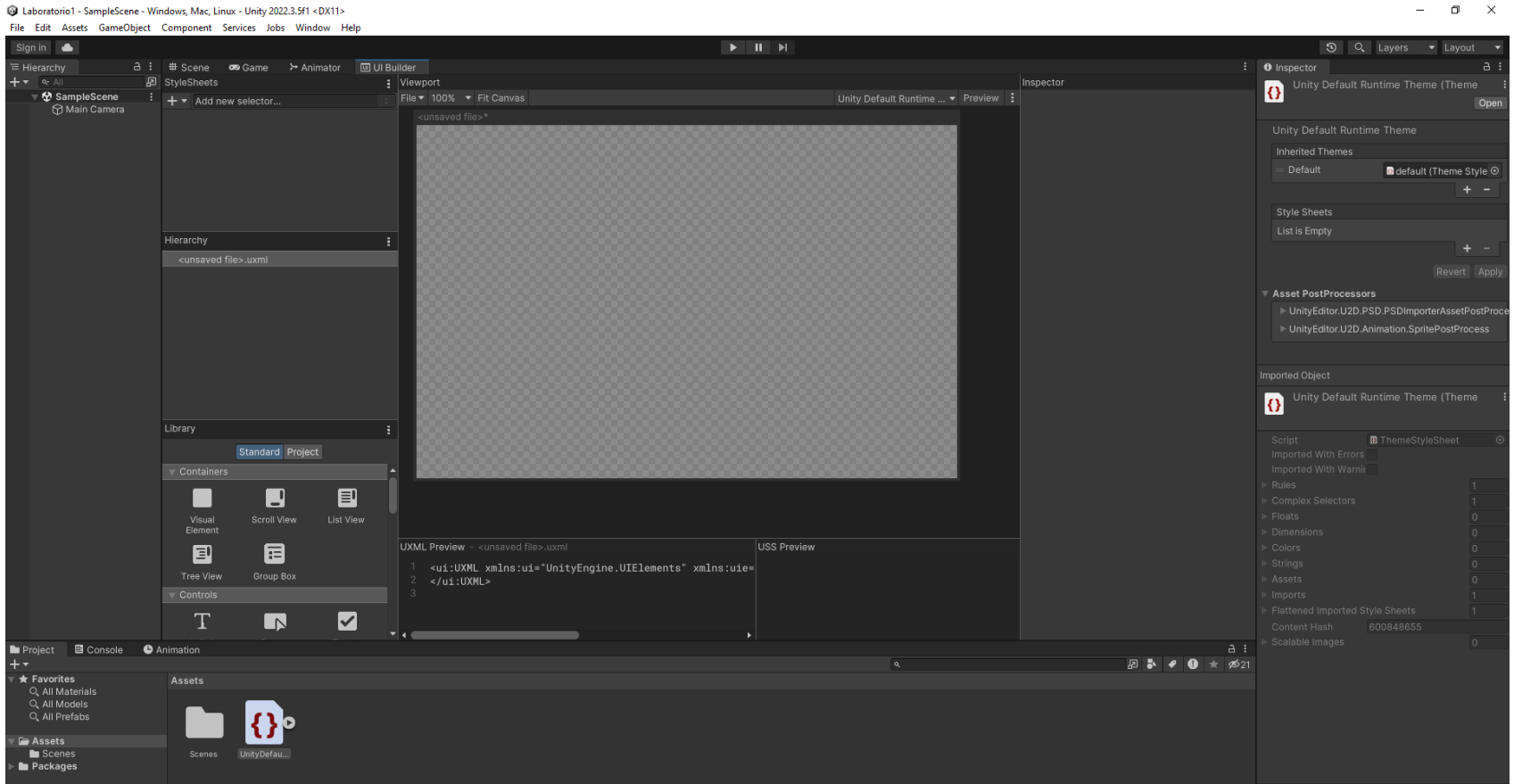
Panel Settings Asset



UI Builder

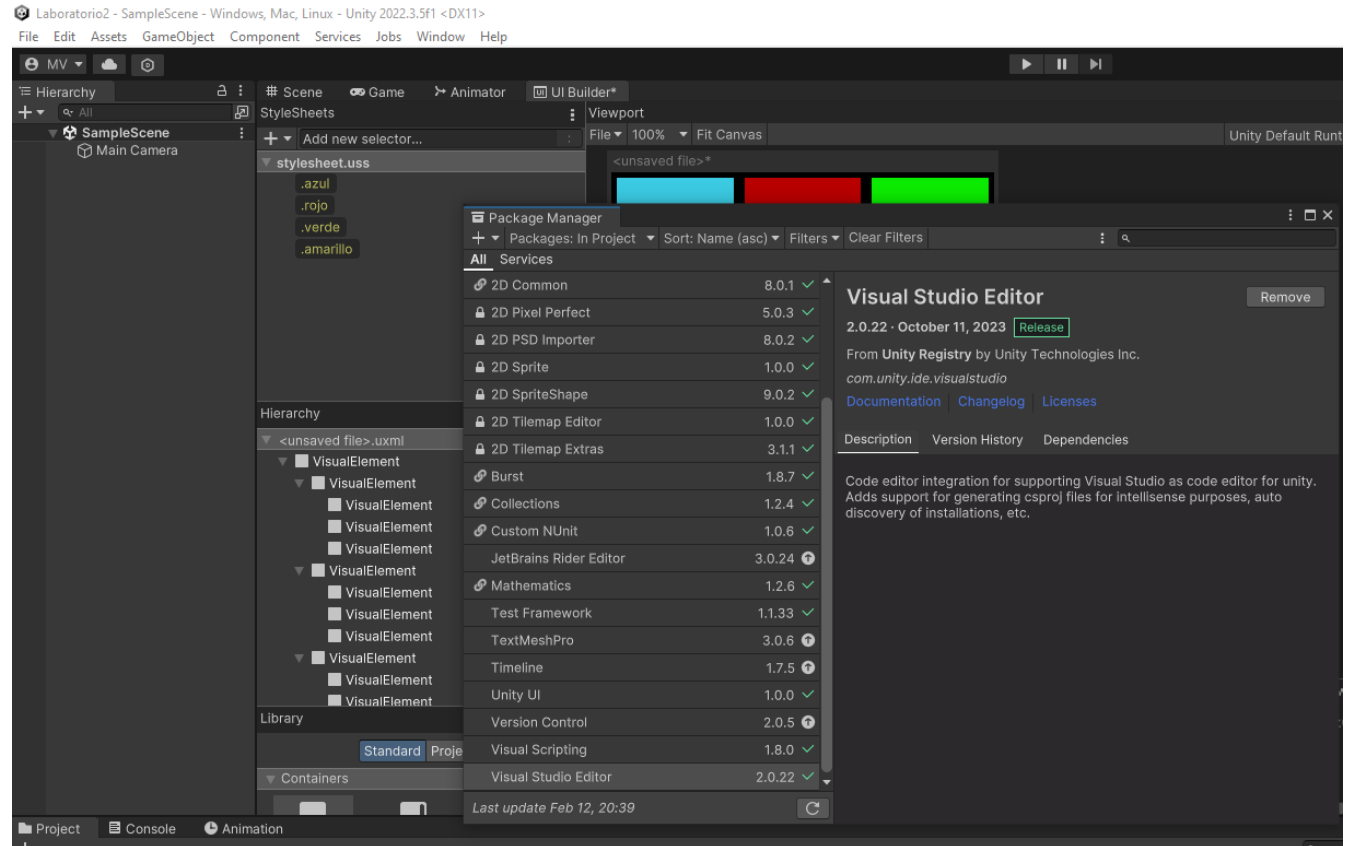
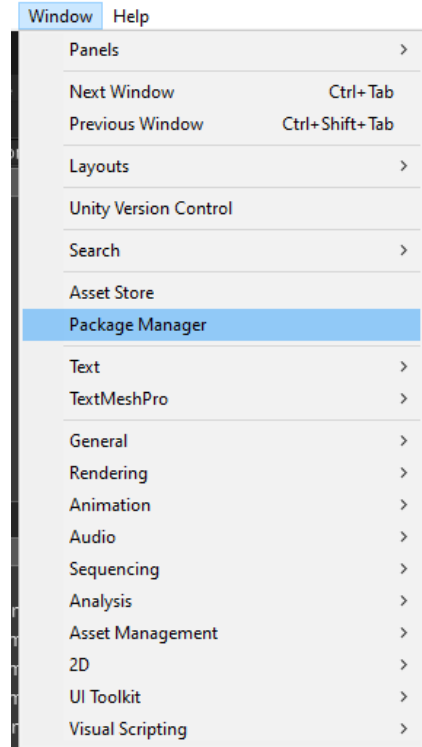


UI Builder

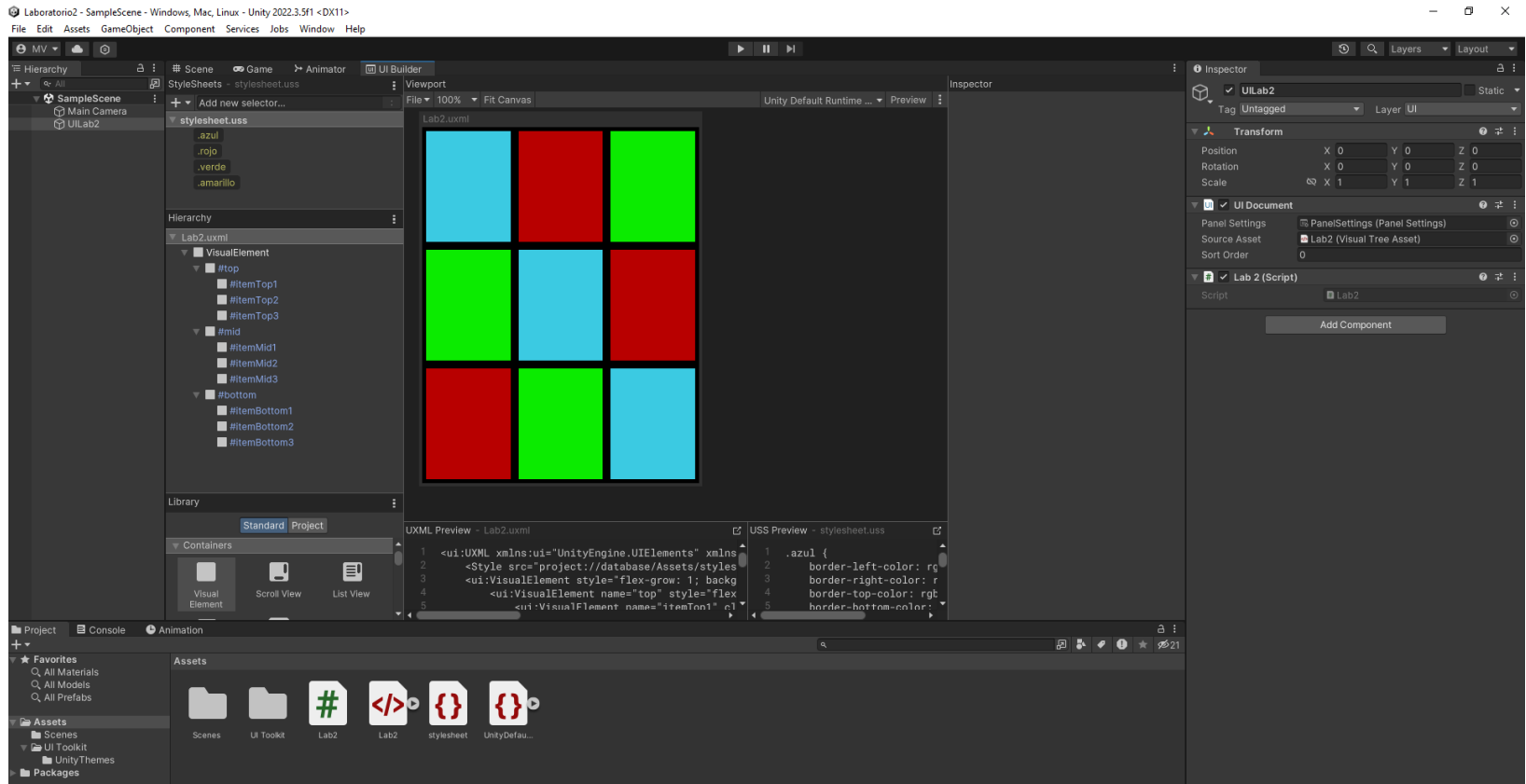


Visual Studio Editor

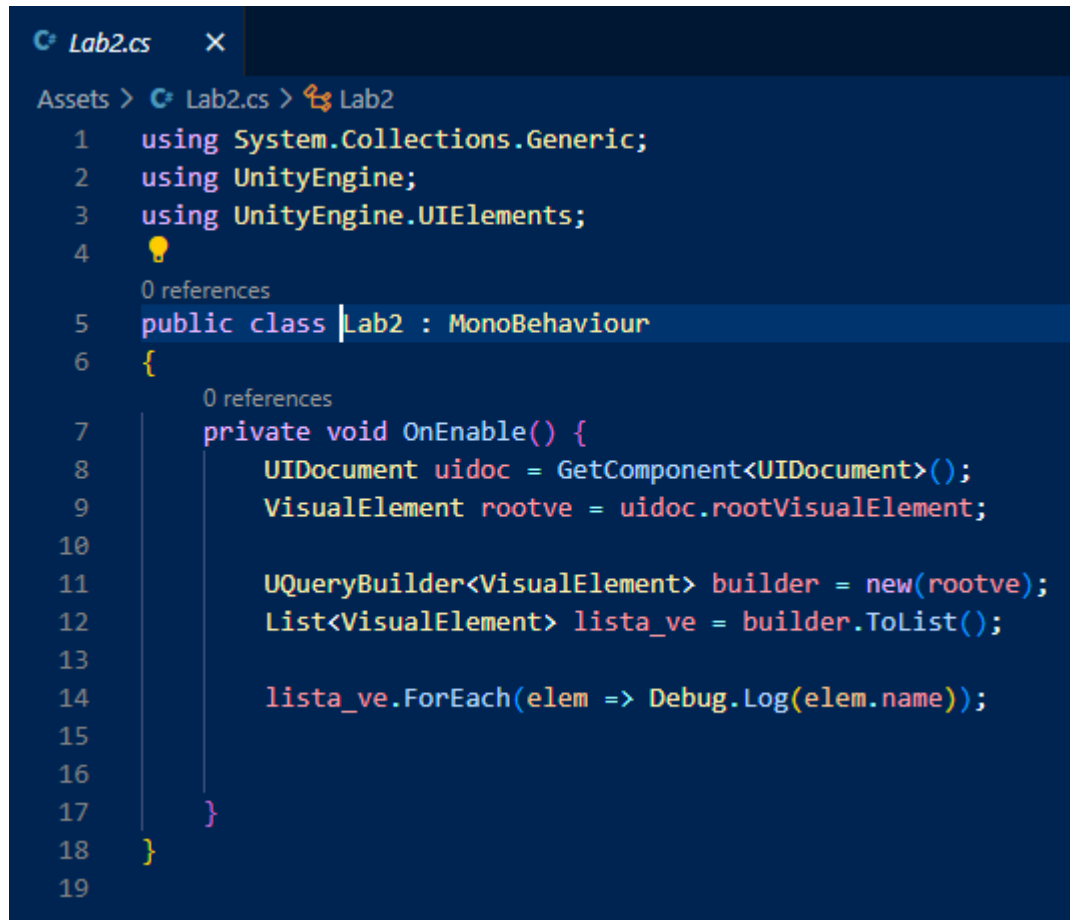
2.3.5f1 <DX11>



UIDocument

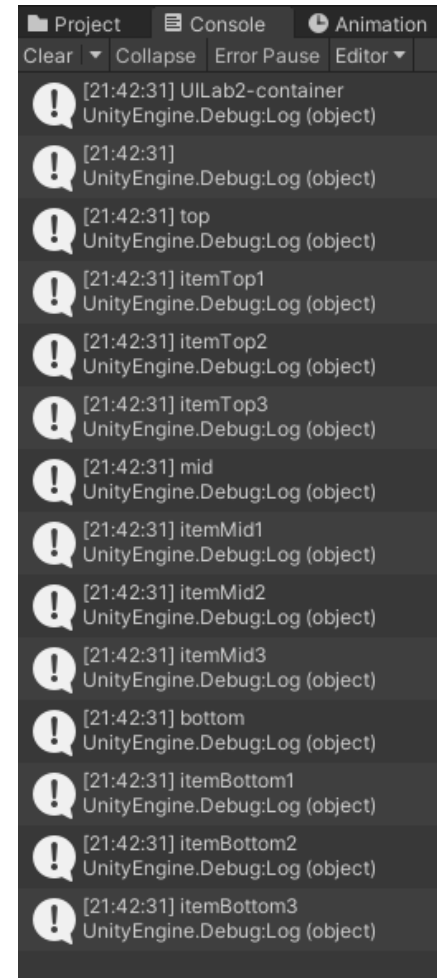
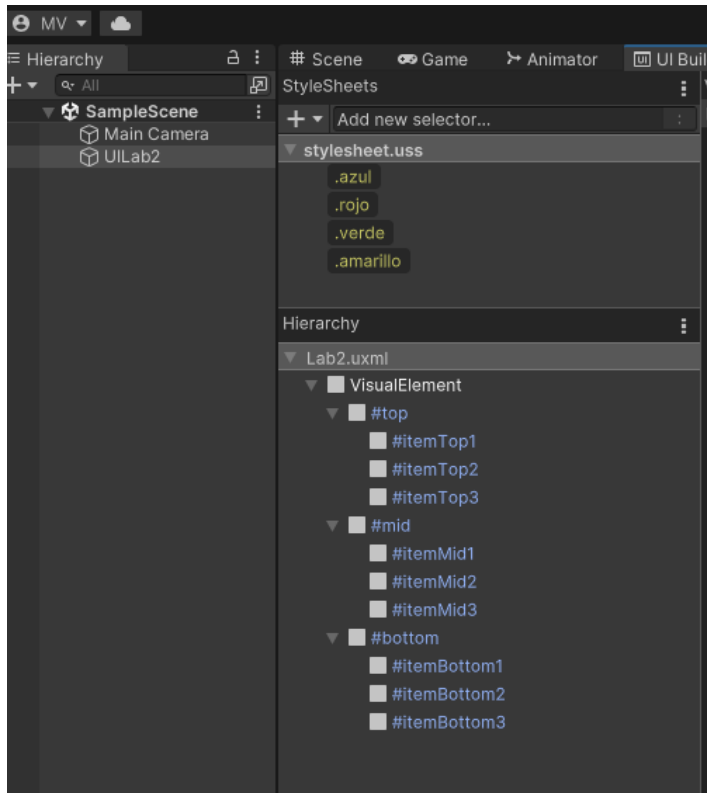


Script



```
Lab2.cs X
Assets > Lab2.cs > Lab2
1 using System.Collections.Generic;
2 using UnityEngine;
3 using UnityEngine.UIElements;
4 
5 public class Lab2 : MonoBehaviour
6 {
7     private void OnEnable() {
8         UIDocument uidoc = GetComponent<UIDocument>();
9         VisualElement rootve = uidoc.rootVisualElement;
10 
11         UQueryBuilder<VisualElement> builder = new(rootve);
12         List<VisualElement> lista_ve = builder.ToList();
13 
14         lista_ve.ForEach(elem => Debug.Log(elem.name));
15     }
16 }
17 
18 
19
```

Salida Consola



AddToClassList

```
Lab2.cs
Assets > Lab2.cs > Lab2
1 using System.Collections.Generic;
2 using UnityEngine;
3 using UnityEngine.UIElements;
4
5 0 references
6 public class Lab2 : MonoBehaviour
7 {
8     0 references
9     private void OnEnable() {
10         UIDocument uidoc = GetComponent<UIDocument>();
11         VisualElement rootve = uidoc.rootVisualElement;
12
13         UQueryBuilder<VisualElement> builder = new(rootve);
14         List<VisualElement> lista_ve = builder.ToList();
15
16         lista_ve.ForEach(elem => {Debug.Log(elem.name);
17                                     elem.AddToClassList("amarillo");});
18     }
19 }
20
```

AddToClassList



Children

```
Lab2.cs X
Assets > Lab2.cs > ...
1  using System.Collections.Generic;
2  using System.Linq;
3  using UnityEngine;
4  using UnityEngine.UIElements;
5
6  0 references
7  public class Lab2 : MonoBehaviour
8  {
9      0 references
10     private void OnEnable() {
11         UIDocument uidoc = GetComponent<UIDocument>();
12         VisualElement rootve = uidoc.rootVisualElement;
13
14         UQueryBuilder<VisualElement> builder = new(rootve);
15         //List<VisualElement> lista_ve = builder.ToList();
16         VisualElement contenedor = builder.Name("mid");
17         List<VisualElement> lista_ve = contenedor.Children().ToList();
18
19         lista_ve.ForEach(elem => {Debug.Log(elem.name);
20             | | | | | elem.AddToClassList("amarillo");});
21     }
22 }
23
```

Children

Laboratorio2 - SampleScene - Windows, Mac, Linux - Unity 2022.3.5f1 <DX11>
File Edit Assets GameObject Component Services Jobs Window Help



Query

```
Lab2.cs
Assets > Lab2.cs > ...
1  using System.Collections.Generic;
2  using System.Linq;
3  using UnityEngine;
4  using UnityEngine.UIElements;
5
6  0 references
7  public class Lab2 : MonoBehaviour
8  {
9      0 references
10     private void OnEnable() {
11         UIDocument uidoc = GetComponent<UIDocument>();
12         VisualElement rootve = uidoc.rootVisualElement;
13
14         //UQueryBuilder<VisualElement> builder = new(rootve);
15         //List<VisualElement> lista_ve = builder.ToList();
16         List<VisualElement> lista_ve = rootve.Query().ToList();
17
18         //VisualElement contenedor = builder.Name("mid");
19         //List<VisualElement> lista_ve = contenedor.Children().ToList();
20
21         lista_ve.ForEach(elem => {Debug.Log(elem.name);
22             | | | | | elem.AddToClassList("amarillo");});
23     }
24 }
```

Query → ClassName

```
Lab2.cs x
Assets > Lab2.cs > ...
1  using System.Collections.Generic;
2  using System.Linq;
3  using UnityEngine;
4  using UnityEngine.UIElements;
5
6  0 references
7  public class Lab2 : MonoBehaviour
8  {
9      0 references
10     private void OnEnable() {
11         UIDocument uidoc = GetComponent<UIDocument>();
12         VisualElement rootve = uidoc.rootVisualElement;
13
14         //UQueryBuilder<VisualElement> builder = new(rootve);
15         //List<VisualElement> lista_ve = builder.ToList();
16         //List<VisualElement> lista_ve = rootve.Query().ToList();
17         List<VisualElement> lista_ve = rootve.Query(className: "azul").ToList();
18
19         //VisualElement contenedor = builder.Name("mid");
20         //List<VisualElement> lista_ve = contenedor.Children().ToList();
21
22         lista_ve.ForEach(elem => {Debug.Log(elem.name);
23             elem.AddToClassList("amarillo");});
24     }
25 }
```


Laboratorio2 - SampleScene - Windows, Mac, Linux - Unity 2022.3.5f1 <DX11>

File Edit Assets GameObject Component Services Jobs Window Help



Query.First \leftrightarrow Q

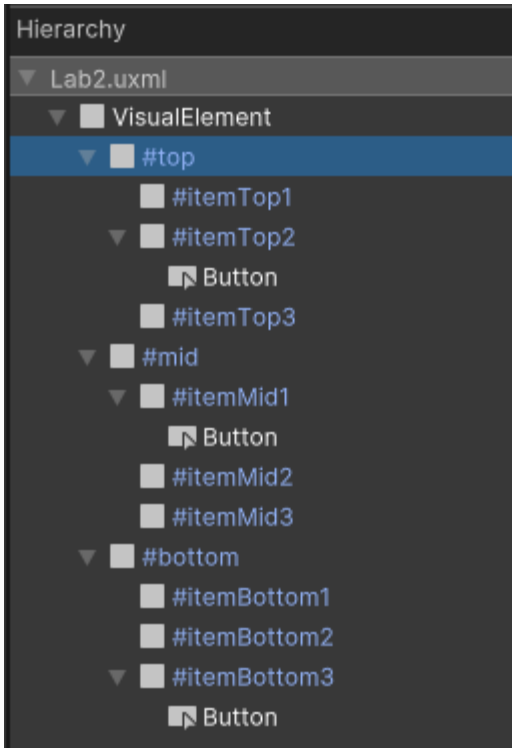
```
VisualElement ve = rootve.Query(className: "azul").First();  
Debug.Log(ve.name);  
ve.AddToClassList("amarillo");
```

Son equivalentes

```
VisualElement ve = rootve.Q(className: "azul");  
Debug.Log(ve.name);  
ve.AddToClassList("amarillo");
```



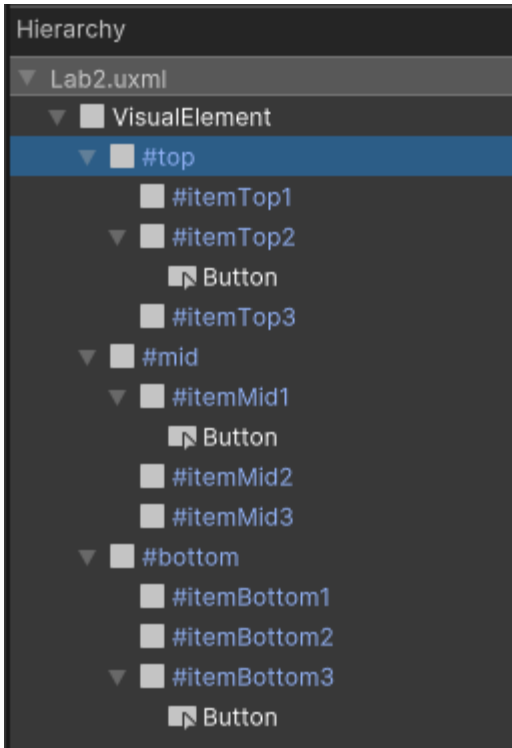
Query<type>



```
VisualElement ve = rootve.Query<Button>().Last();  
Debug.Log(ve.name);  
ve.AddToClassList("amarillo");
```



Query<type>.AtIndex()



```
VisualElement ve = rootve.Query<Button>().AtIndex(1);  
Debug.Log(ve.name);  
ve.AddToClassList("amarillo");
```

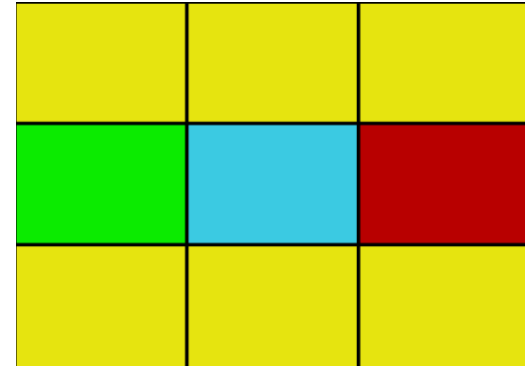


Ejemplos

```
VisualElement top= rootve.Query("top");
VisualElement bottom = rootve.Query("bottom");
List<VisualElement> lista_ve = new();

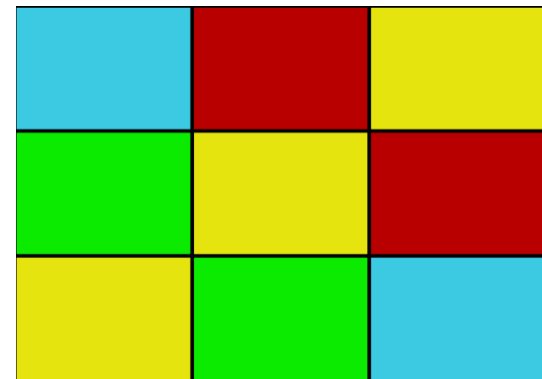
lista_ve.AddRange(top.Children().ToList());
lista_ve.AddRange(bottom.Children().ToList());

lista_ve.ForEach(elem => {Debug.Log(elem.name);
| | | | | elem.AddToClassList("amarillo");});
```

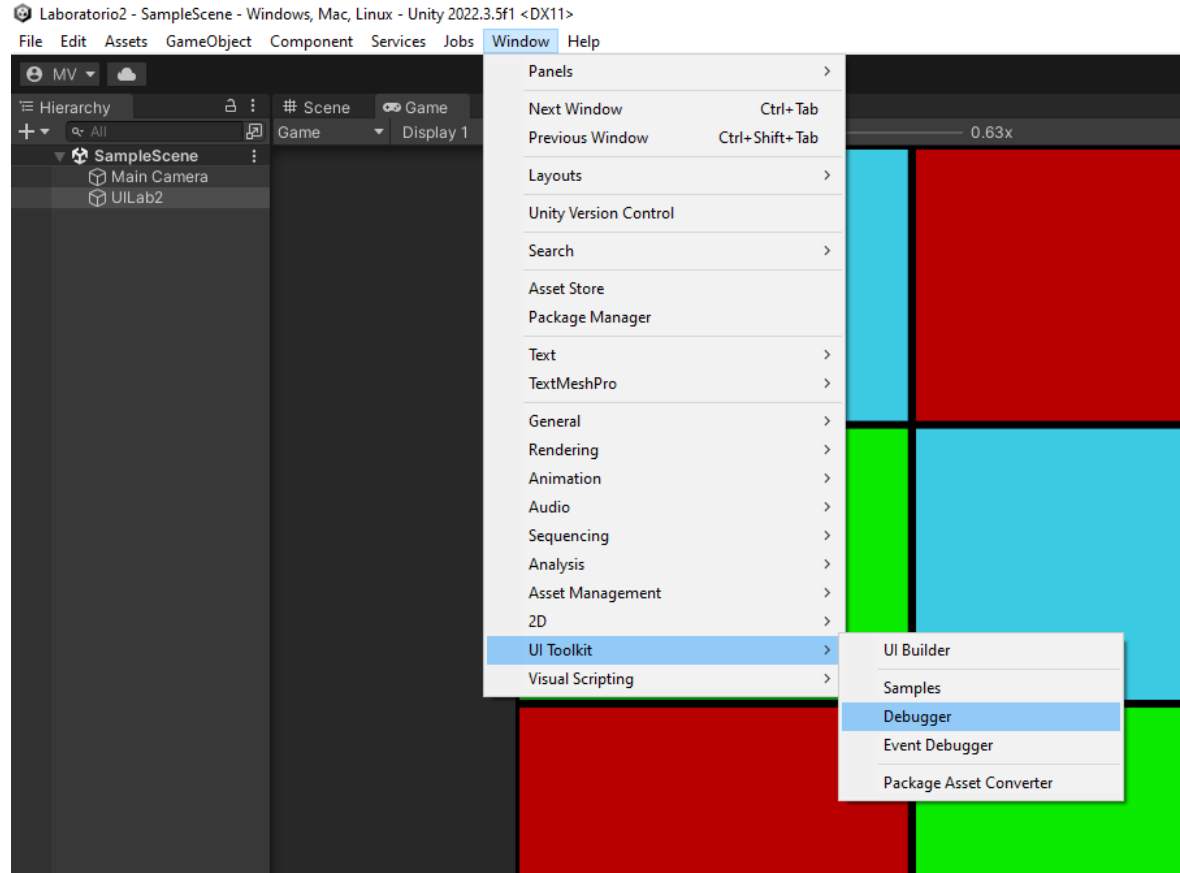


```
List<VisualElement> lista_ve = new()
{
    rootve.Q("itemTop3"),
    rootve.Q("itemMid2"),
    rootve.Q("itemBottom1")
};

lista_ve.ForEach(elem => {Debug.Log(elem.name);
| | | | | elem.AddToClassList("amarillo");});
```



Debugger

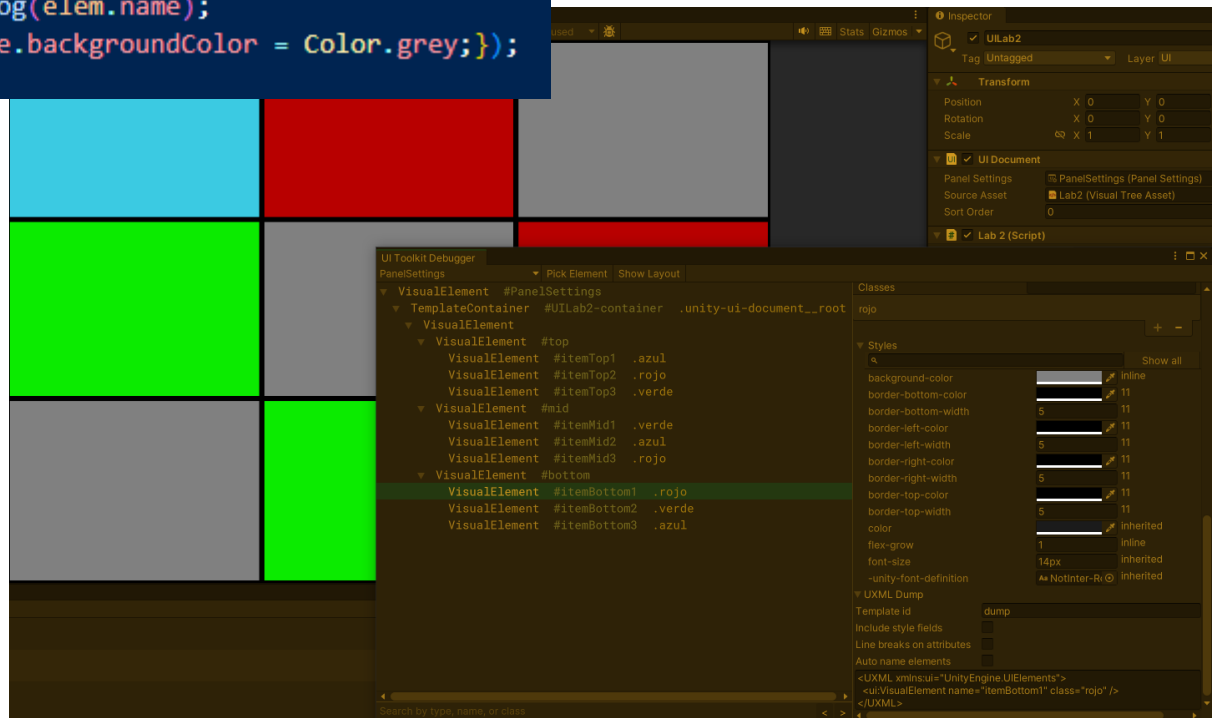


Debugger → PanelSettings

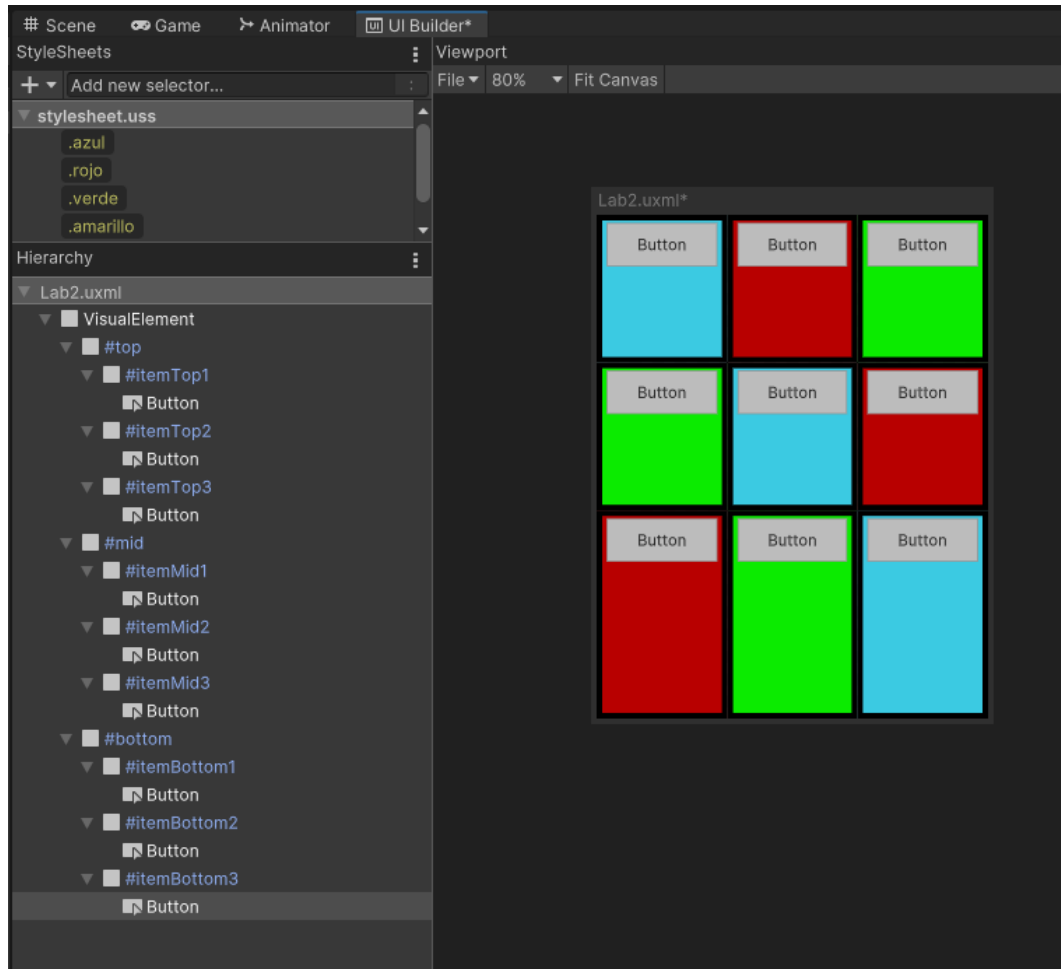


Debugger → Inline Style

```
List<VisualElement> lista_ve = new()  
{  
    rootve.Q("itemTop3"),  
    rootve.Q("itemMid2"),  
    rootve.Q("itemBottom1")  
};  
  
lista_ve.ForEach(elem => {Debug.Log(elem.name);  
                           elem.style.backgroundColor = Color.grey;});
```



Ejemplo



Ejemplo

```
List<VisualElement> lista_contenedor = rootve.Query(className: "azul").ToList();  
List<VisualElement> lista_ve = lista_contenedor.SelectMany(elem => elem.Children()).Where(elem => elem.GetType() == typeof(Button)).ToList();  
  
lista_ve.ForEach(elem => {Debug.Log(elem.name);  
    elem.AddToClassList("amarillo");});
```



Código completo

```
Assets > Lab2.cs > ...
1  using System.Collections.Generic;
2  using System.Linq;
3  using UnityEngine;
4  using UnityEngine.UIElements;
5
6  2 references
7  public class Lab2 : MonoBehaviour
8  {
9      0 references
10     private void OnEnable() {
11         UIDocument uidoc = GetComponent<UIDocument>();
12         VisualElement rootve = uidoc.rootVisualElement;
13
14         UQueryBuilder<VisualElement> builder = new(rootve);
15
16         List<VisualElement> lista_contenedor = rootve.Query(className: "azul").ToList();
17         List<VisualElement> lista_ve = lista_contenedor.SelectMany(elem => elem.Children()).Where(elem => elem.GetType() == typeof(Button)).ToList();
18
19         lista_ve.ForEach(elem => {Debug.Log(elem.name);
20             elem.AddToClassList("amarillo");});
21     }
22 }
```

UI Toolkit

- UQuery

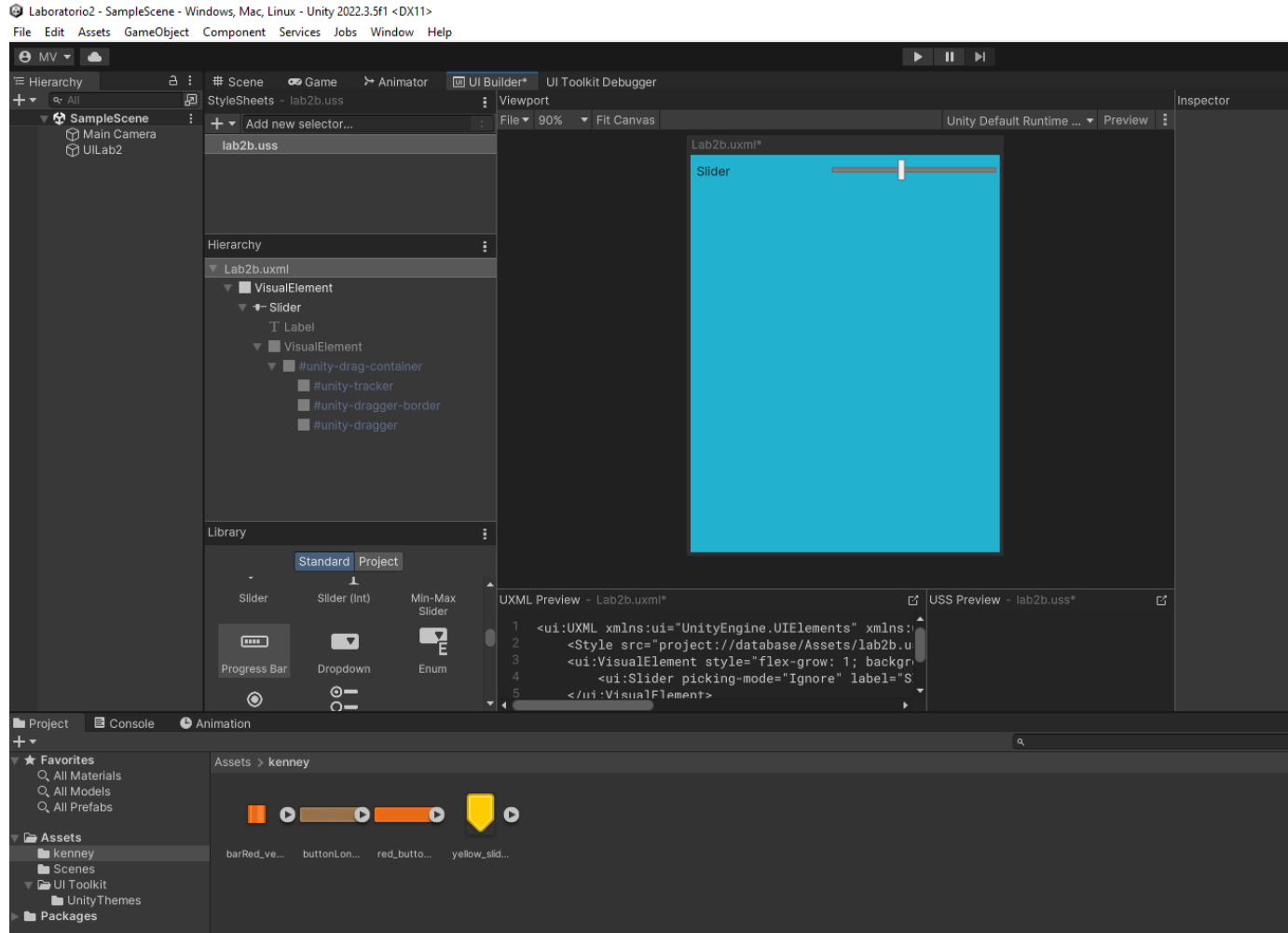
- UQuery Builder

- Query

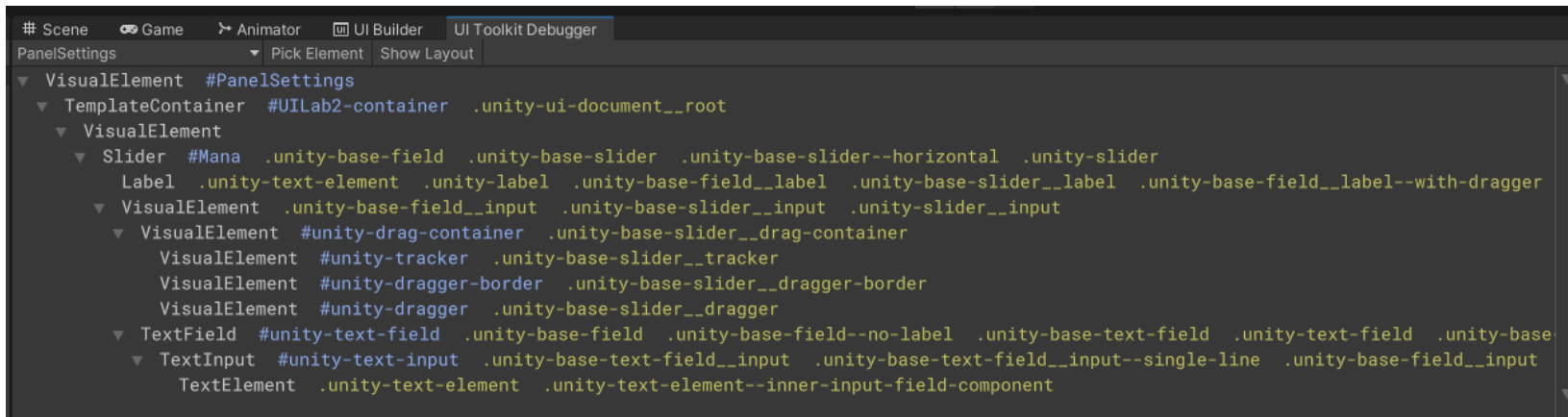
- Q

- Personalizar controles

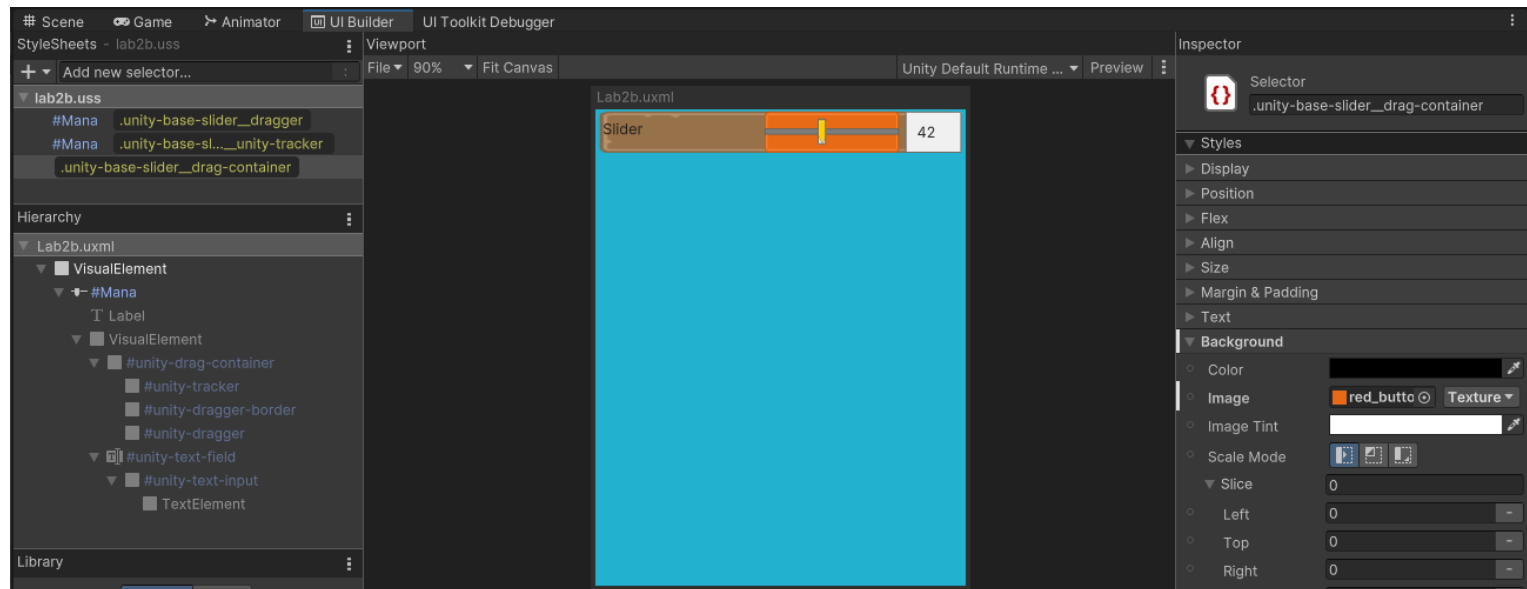
Personalizar Controles



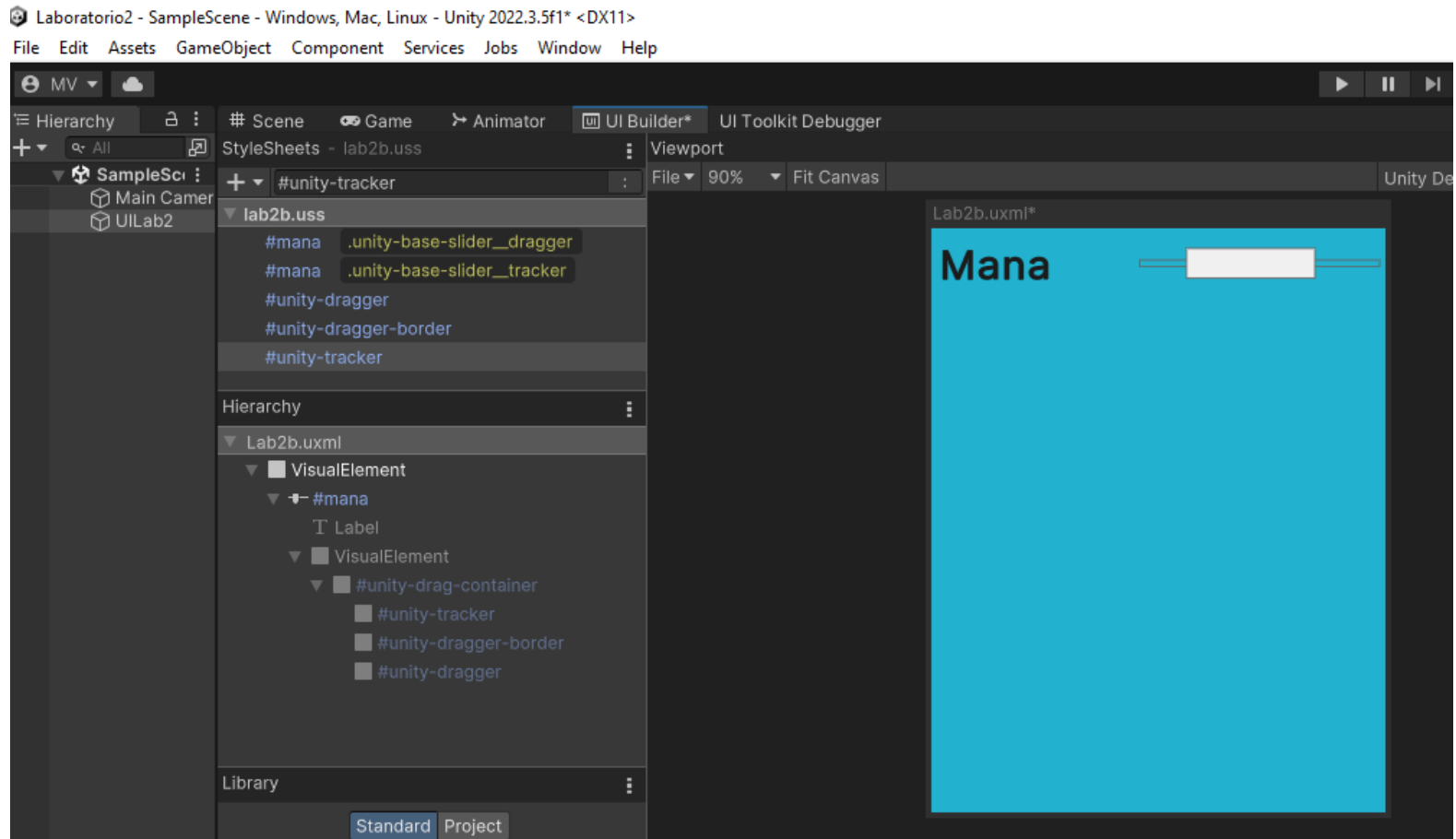
Personalizar Controles



Personalizar Controles



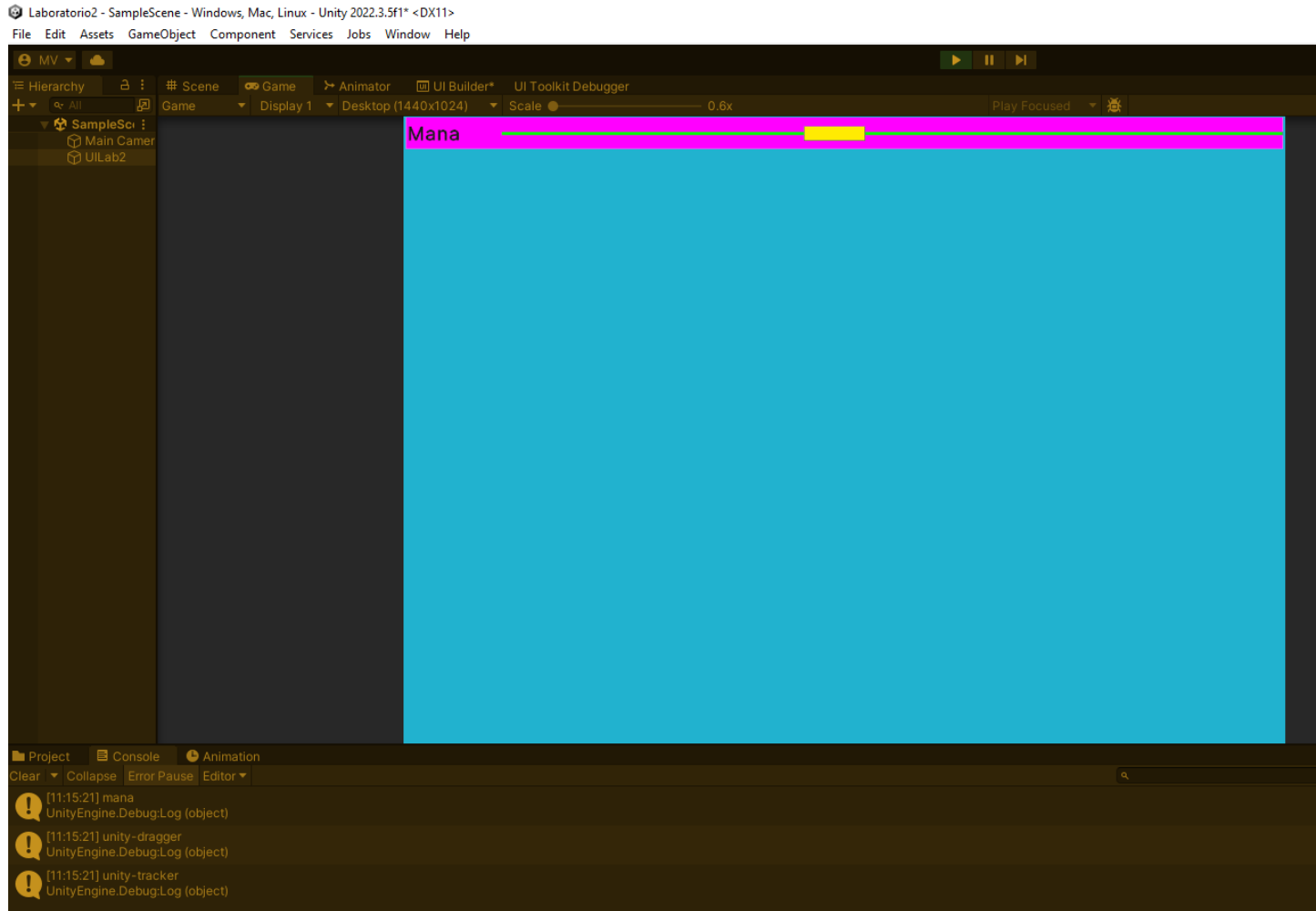
Uquery



Uquery

```
Assets > Lab2b.cs > ...
1  using UnityEngine;
2  using UnityEngine.UIElements;
   0 references
3  public class Lab2b : MonoBehaviour
4  {
   0 references
5      private void OnEnable() {
6          UIDocument uidoc = GetComponent<UIDocument>();
7          VisualElement rootve = uidoc.rootVisualElement;
8
9          UQueryBuilder<VisualElement> builder = new(rootve);
10
11         VisualElement mslider = rootve.Q<Slider>("mana");
12         Debug.Log(mslider.name);
13         mslider.style.backgroundColor = Color.magenta;
14
15         VisualElement mdragger = rootve.Q<VisualElement>("unity-dragger");
16         Debug.Log(mdragger.name);
17         mdragger.style.backgroundColor = Color.yellow;
18
19         VisualElement mtracker = rootve.Q<VisualElement>("unity-tracker");
20         Debug.Log(mtracker.name);
21         mtracker.style.backgroundColor = Color.green;
22     }
23 }
24
```

Uquery



Laboratorio 2

- En este laboratorio practicaremos:
 - El acceso a los elementos de un menú a través de UQuery.
 - La personalización de controles mediante clases USS y por programación.
- Utilizaremos como base el menú que hicimos en el laboratorio 1.
- Al campus subimos los ficheros .uxml, .uss y .cs.