


Tópicos Especiais em Engenharia de Software (Jogos II)

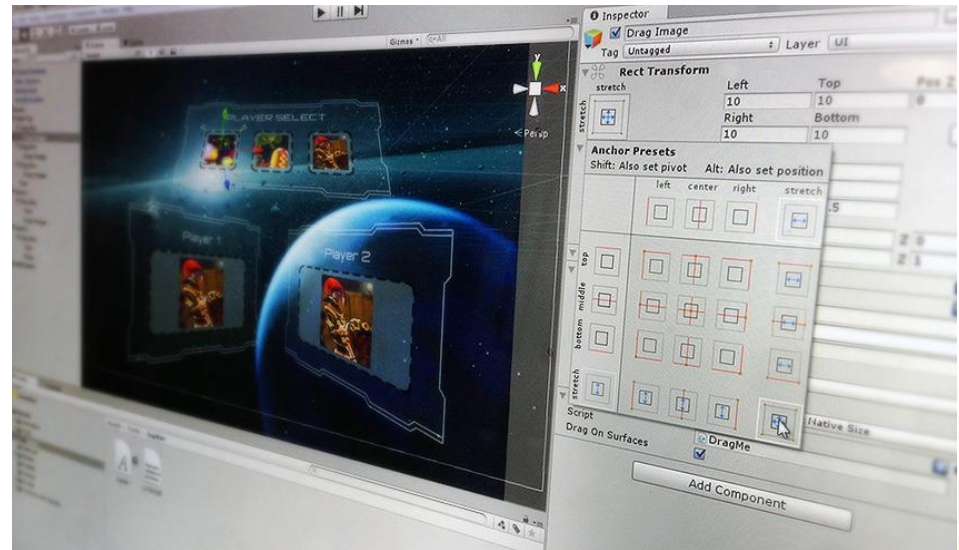
Aula 07 – User Interface

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Unity 3D: User Interface

- O sistema de interface com usuários da Unity permite a criação de interfaces de maneira rápida e intuitiva.
 - Canvas
 - Layout
 - Visual Components
 - Interaction Components
 - GUI Components por Script

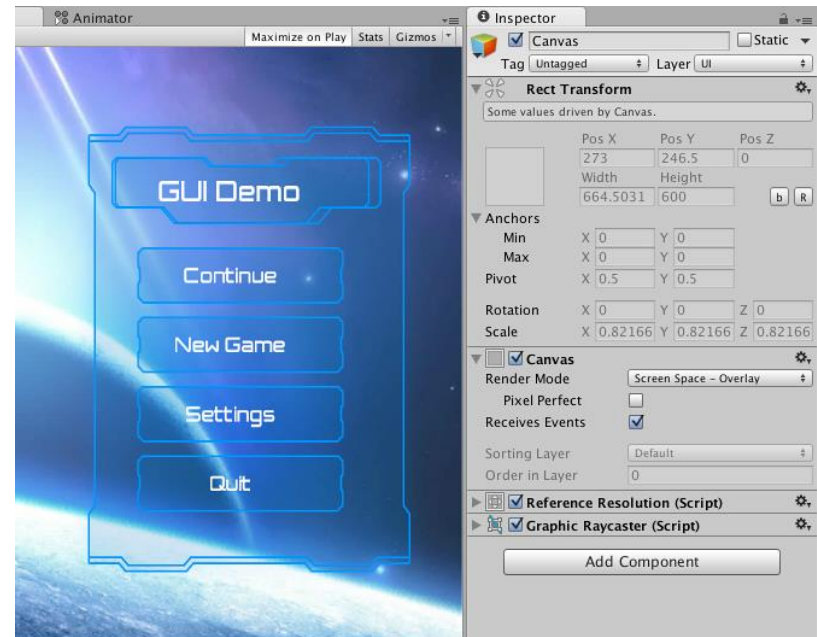


Canvas

- O **Canvas** é a área em que todos os elementos da interface do usuário devem ser posicionados.
 - É um GameObject com um componente Canvas;
 - Todos os elementos da interface do usuário devem ser filhos de um Canvas;

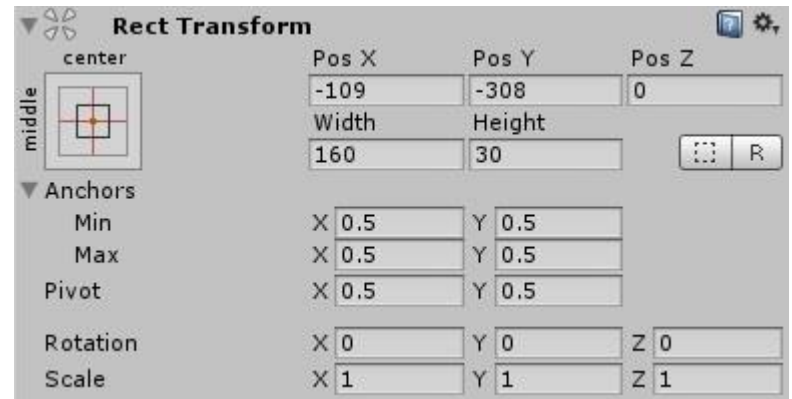
- **Modos de Renderização:**

- Screen Space – Overlay;
- Screen Space – Camera;
- World Space;

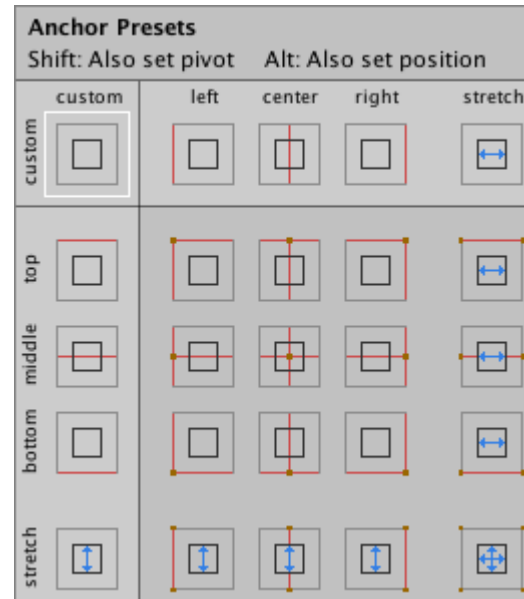


Layout

- **Rect Transform:**
 - Translate, Rotate, Scale

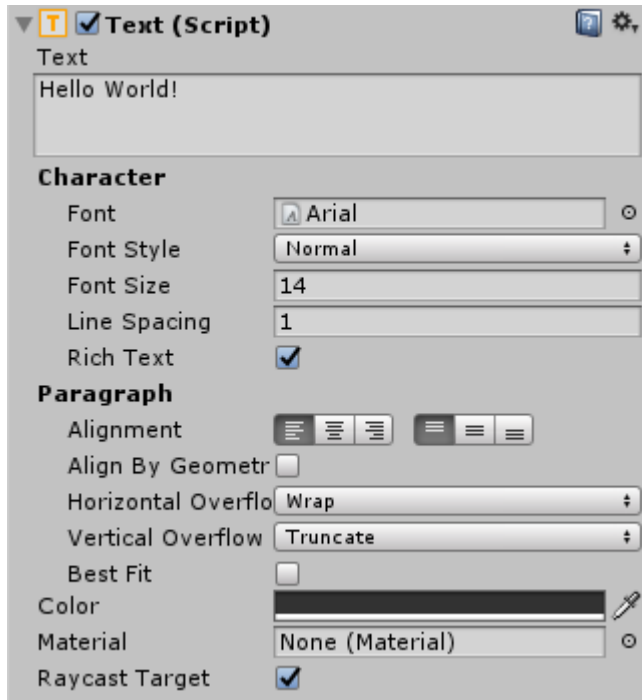


- **Anchor presets:**



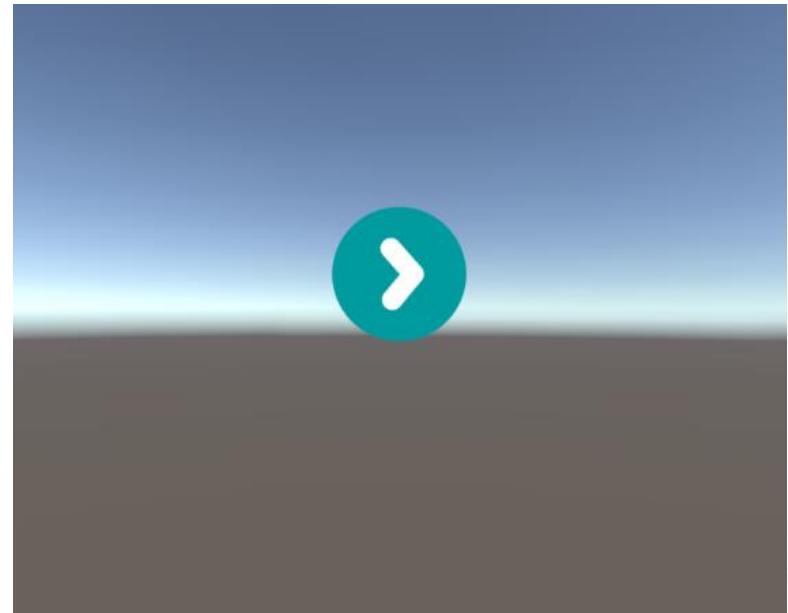
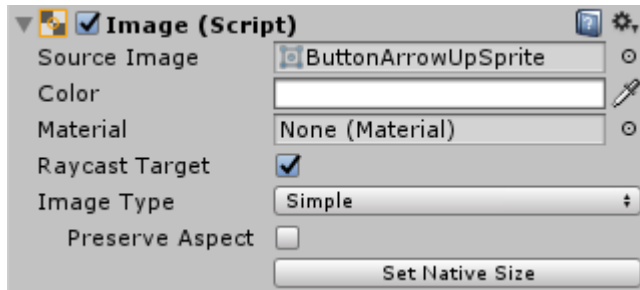
Componentes Visuais

- **Text:**



Componentes Visuais

- **Image:**



Componentes Visuais

- Acessando os componentes por script:

```
using UnityEngine;
using UnityEngine.UI;

public class TesteText : MonoBehaviour {
    private Text meuTexto;

    void Start()
    {
        meuTexto = GetComponent<Text>();
    }

    void Update()
    {
        meuTexto.text = "FPS: " + (1.0f / Time.smoothDeltaTime);
    }
}
```

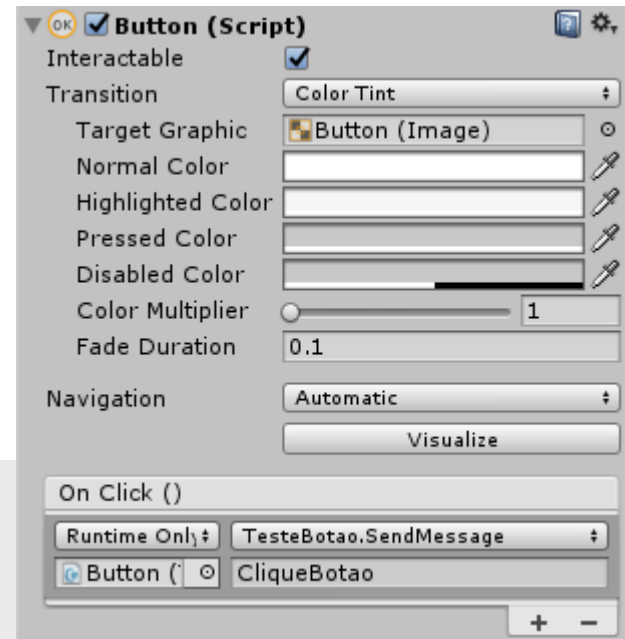
Componentes de Interação

- Button:



- OnClick:

```
public class TesteBotao : MonoBehaviour {  
    private Text textoBotao;  
  
    void Start() {  
        textoBotao = GetComponentInChildren<Text>();  
    }  
  
    void CliqueBotao() {  
        textoBotao.text = "Clicado!";  
    }  
}
```



Componentes de Interação

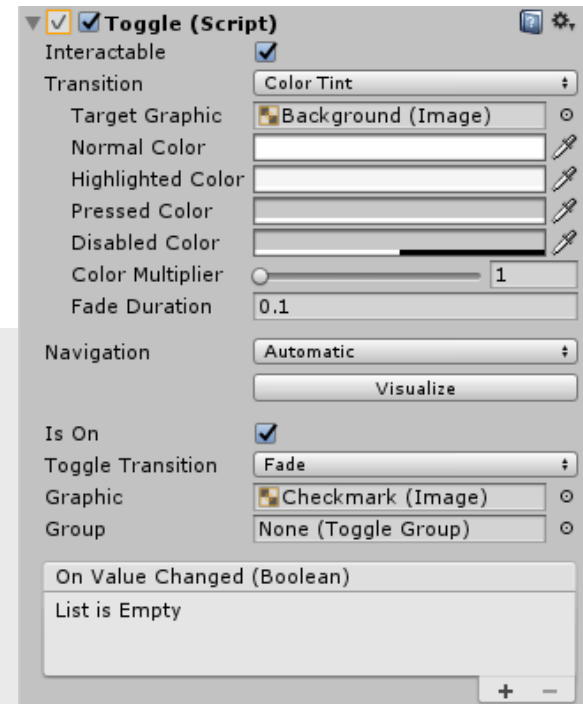
- Toggle:



```
public class TesteUI : MonoBehaviour {
    private Text textoBotao;
    public Toggle meuToggle;

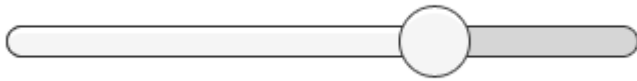
    void Start() {
        textoBotao = GetComponentInChildren<Text>();
    }

    void CliqueBotao() {
        if (meuToggle.isOn)
            textoBotao.text = "Clicado 1!";
        else
            textoBotao.text = "Clicado 2!";
    }
}
```



Componentes de Interação

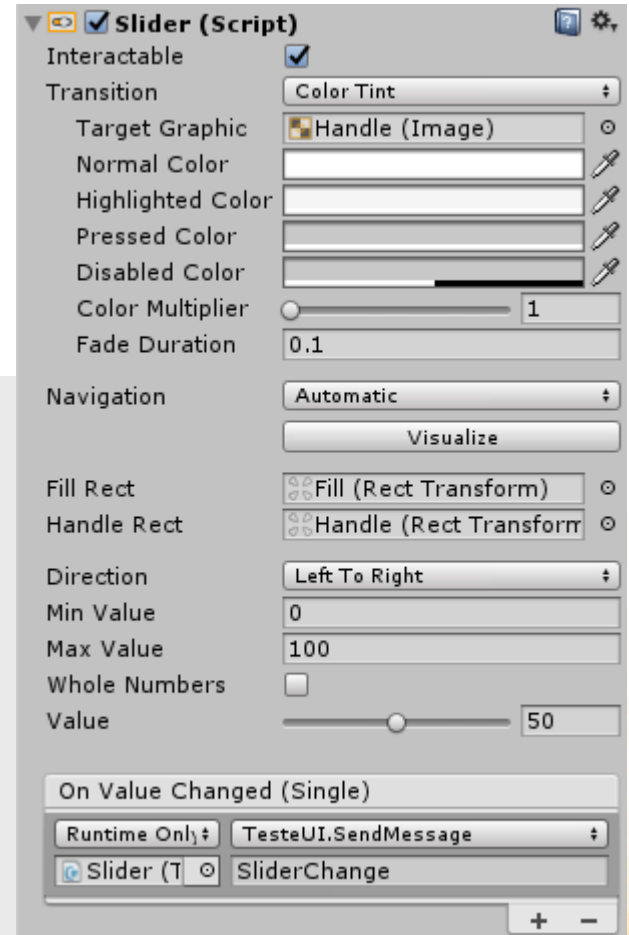
- Slider:



```
public class TesteUI : MonoBehaviour {
    private Slider meuSlider;
    public Text texto;

    void Start()
    {
        meuSlider = GetComponent<Slider>();
    }

    void SliderChange()
    {
        texto.text = "Valor: " + meuSlider.value;
    }
}
```



Componentes de Interação

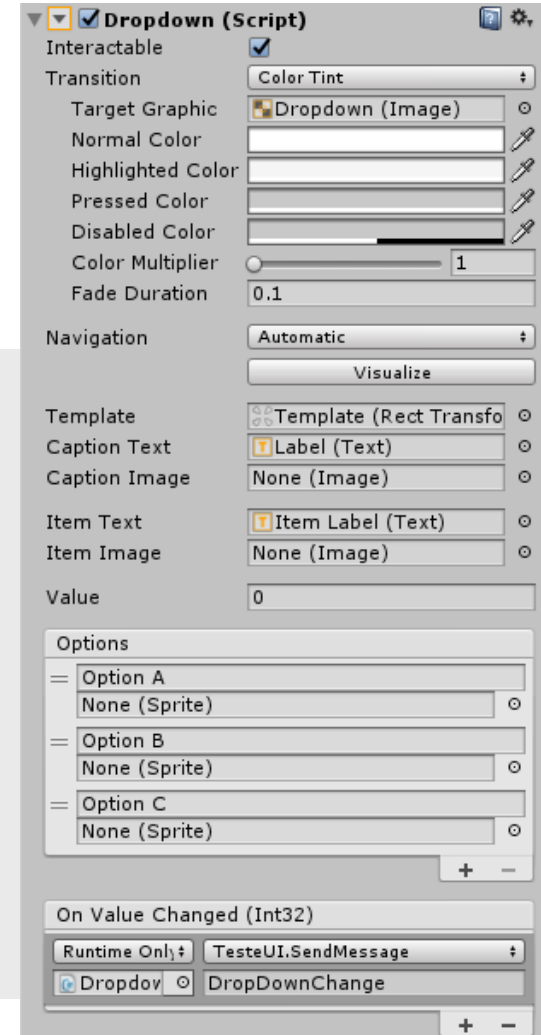
- Dropdown:



```
public class TesteUI : MonoBehaviour {
    private Dropdown meuDropdown;
    public Text texto;

    void Start() {
        meuDropdown = GetComponent<Dropdown>();
    }

    void DropDownChange() {
        texto.text = "Selecionado: " +
            meuDropdown.options[meuDropdown.value].text;
    }
}
```



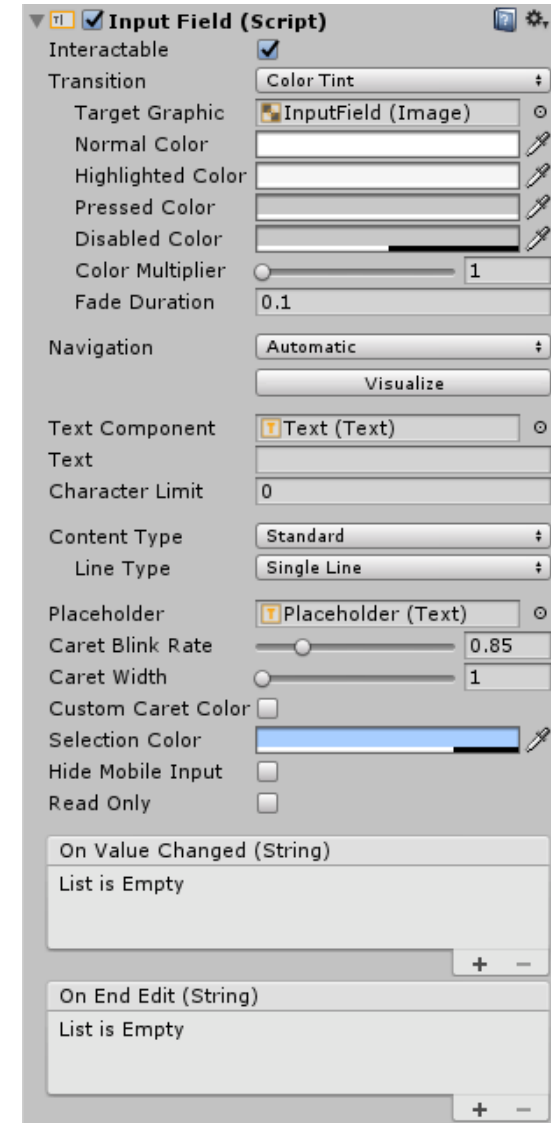
Componentes de Interação

- Input Field:



```
public class TesteUI : MonoBehaviour {
    public InputField input;
    public Text texto;

    void CliqueBotao()
    {
        texto.text = "Nome: " + input.text;
    }
}
```



Componentes de Interface por Script

- Além de criar componentes visualmente, também é possível criar elementos de interface no evento OnGUI:

```
void GUI.Label(Rect position, string text);
```

```
bool GUI.Button(Rect position, string text);
```

```
string GUI.TextField(Rect position, string text);
```

```
string GUI.TextArea(Rect position, string text);
```

Componentes de Interface por Script

- Label:

```
using UnityEngine;
using System.Collections;

public class MeuScript : MonoBehaviour {

    private Rect helloPos;

    void Start()
    {
        helloPos = new Rect((Screen.width/2)-50, (Screen.height/2)-50, 100, 30);
    }

    void OnGUI()
    {
        GUI.Label(helloPos, "Hello World!");
    }
}
```

Componentes de Interface por Script

- **Button:**

```
public class TesteGUI : MonoBehaviour {  
  
    public string textoBotao = "Clique";  
  
    void OnGUI()  
    {  
        if (GUI.Button(new Rect(10, 70, 50, 30), textoBotao))  
        {  
            textoBotao = "Clicado!";  
        }  
    }  
}
```

Componentes de Interface por Script

- TextField:

```
public class TesteGUI : MonoBehaviour {  
  
    public string texto = "Hello World!";  
  
    void OnGUI()  
    {  
        texto = GUI.TextField(new Rect(10, 10, 200, 20), texto, 25);  
    }  
}
```

Outros Componentes: <https://docs.unity3d.com/Manual/gui-Controls.html>

Customização (GUI Style): <https://docs.unity3d.com/Manual/class-GUIStyle.html>