## **Remapping Controller Inputs**

Joystick buttons, mouses button or keyboard keys can be mapped. These bindings can be removed in code and rebound. This is especially useful in games where the user is allowed to customise their own keys or changing what joystick button or stick operates what control.

This article is more a presentation of a remapping routine rather than a step by step tutorial.



If you wish to simply use the existing built-in mappings for all controllers, check this article first. If you wish to learn about additional standard mappings for all controllers, see Overriding a Controller mapping.

It introduces the use of the following functions:

- orxInput\_GetActiveBinding
- orxInput\_GetBindingList
- orxInput\_Unbind
- orxInput Bind
- orxInput Save

The routine will allow the user to press any key or joystick button assigned to the XButton label in order to trigger a message to the console. They press the Enter key to enter remap mode. Then pressing any joystick button will make the button the new one assigned to XButton.

Starting with the input config:

```
[MainInput]
KEY_ESCAPE = Quit
KEY_ENTER = Remap
JOY_12_1 = XButton ; Joystick binding
KEY_X = XButton ; Keyboard alternative
```

In the above config, the Escape key is used as the usual quit key and the Enter key is the one used to put our game into "remap mode".

Then there are two controls mapped to XButton, JOY\_12\_1 which is the 12th button on your joystick controller or gamepad, and secondly, the X key.

Now to the routine itself with comments. Have a look though and I'll explain afterwards:

```
/* Should quit? */
if(orxInput_IsActive("Quit"))
{
    /* Updates result */
    eResult = orxSTATUS_FAILURE;
}
```

```
if(orxInput HasBeenActivated("XButton")){
        orxLOG("X Button");
    }
    if (orxInput HasBeenActivated("Remap")) {
        orxLOG("Remap mode is on.");
        remapMode = orxTRUE;
    }
   if (remapMode) {
        orxINPUT TYPE inputType;
        orxENUM buttonID;
        orxFLOAT value;
        //Get a button press. This will be the one assigned to 'XButton'
        if (orxInput GetActiveBinding(&inputType, &buttonID, &value)) {
            if (inputType == orxINPUT TYPE JOYSTICK BUTTON) { //only allow
if it's a joystick button press
                orxLOG("Remapping Type: %d ID: %d Value: %f", inputType,
buttonID, value); // 4 0 ?
                //do the remap here.
                //Get all inputs and buttonIDs assigned to XButton
                orxINPUT TYPE inputTypes[orxINPUT KU32 BINDING NUMBER];
                orxENUM bindingButtonIDs[orxINPUT KU32 BINDING NUMBER];
                orxINPUT_MODE inputModes[orxINPUT_KU32_BINDING_NUMBER];
                orxInput_GetBindingList("XButton", inputTypes,
bindingButtonIDs, inputModes);
                //unbind all existing joystick buttons bound to 'XButton'
                for (orxU32 i = 0; i < orxINPUT_KU32_BINDING_NUMBER; i++) {</pre>
                    if (inputTypes[i] == orxINPUT TYPE JOYSTICK BUTTON) {
                        orxSTATUS unBindSuccess = orxInput_Unbind("XButton",
i); //remove joystick binding
                orxInput Bind("XButton", orxINPUT TYPE JOYSTICK BUTTON,
buttonID, orxINPUT MODE FULL, -1);
                orxInput Save("gamepad.ini");
                orxLOG("Bound to button %d", buttonID);
                remapMode = orxFALSE;
        }
```

First, if either Joystick button 12 or the X key is pressed, a line is logged to the console.

Next, remap mode can be entered by pressing the Enter key.

In remap mode, orxInput\_GetActiveBinding is constantly called. This will get the very last input that was made whether it be a key, a mouse movement, a joystick press, etc. Here, if it was a joystick press, store it for later, and it will be used as the button to remap to.

orxInput\_GetBindingList is then called which returns the entire list of bindings to XButton. There can be up to four physical inputs to a binding. orxINPUT\_KU32\_BINDING\_NUMBER is a constant to 4.

We then loop through the entire list looking for any joystick button type input and unbind XButton from them.

orxInput\_Bind is then called using the joystick button that was saved at the start using orxInput GetActiveBinding. This is bound to XButton.

Finally, orxInput\_Save is called to save the new input config section to a new file. This can then be loaded whenever your game is started.

Finally remap mode is turned off, and if you press the new joystick button that you chose, it will start to log to console instead of the previous joystick button.



**Note:** when using orxInput\_GetActiveBinding, it only collects an input for the specific frame. A slow custom clock will miss values especially if they are fast inputs like mouse wheel clicks. Therefore, it is recommended that the **core clock** is used. See here for an example.

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