OCS Training Workshop
# LAB7

Password protection and System Menu blocking

# Lab 7: Password Protection and System Menu blocking

Introduction

The purpose of this lab is to demonstrate the password feature and how it can be applied in the useful way such as preventing access to Configuration Screen and/or System Menu.

Overview

Password object – can be found in Graphical Editor (menu Screens -> View/Edit Screens). This object allows the user to enter required password.
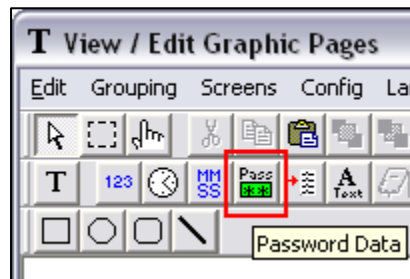
Compare elements – can be found on the standard Cscape toolbar (section Compare Operations). Equal (or Not Equal) function helps to detect if the entered password is right.
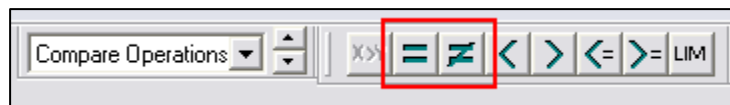

System Menu – diagnostic menu of every OCS unit. Can be accessed via 'System Key' (touch screen OCS units such as XL6) or by pressing Up & Down arrow buttons (on non-touch units). System menu can be very helpful, but often it is wise to make it password protected.

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Procedure

PART 1 - Creating the screens

SCREEN1 - Password

Password:
*****

Jump to
Screen 2

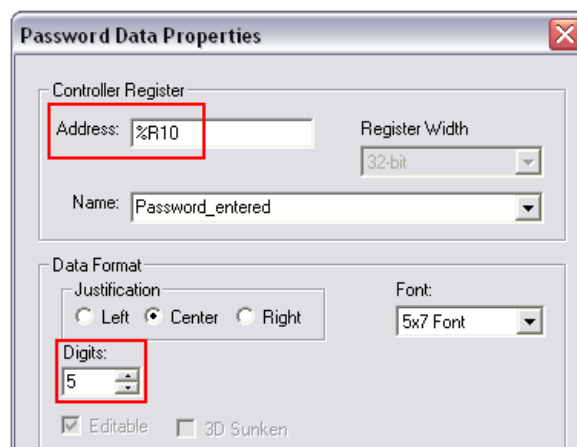**SCREEN2 - Configuration**

Jump to
Screen 1
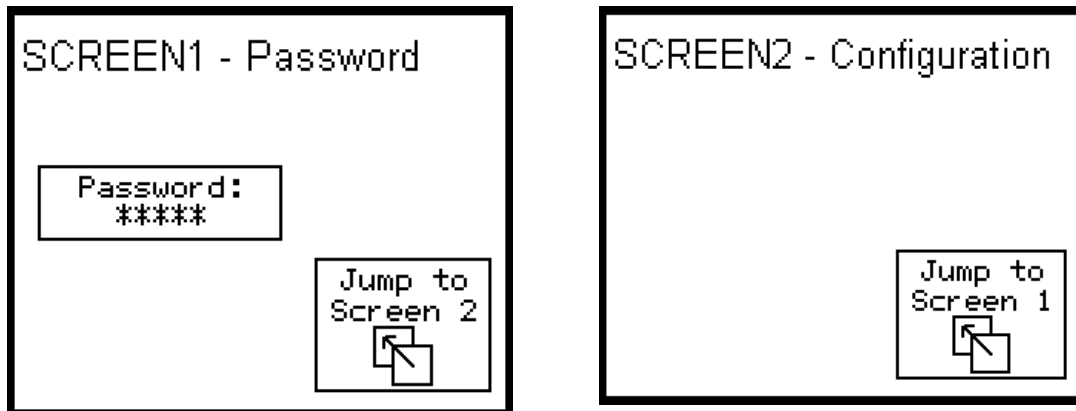
<u>Step 1</u>

Create similar set of screens. Please note that an XLt screen was used as an example here, however the procedure would be identical with any other X-series OCS unit.

Objects used:
  ➢ Static Text Object
  ➢ Password Object
  ➢ Jump Object

<u>Step 2</u>

Configure the Password Object. Make sure you specify a unique (unused) register and required number of digits.


Password Data Properties

Controller Register
Address: %R10   Register Width
                        32-bit

Name: Password_entered

Data Format
  Justification   Font:
  ○ Left ● Center ○ Right   5x7 Font

Digits:
5

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Step 3

Configure the Jump Object:
  - ➢ Specify the correct destination (screen 2)
  - ➢ Select Visibility and Enable Input as dynamic
  - ➢ Make sure you specify an unique (unused) register as an Override Register.
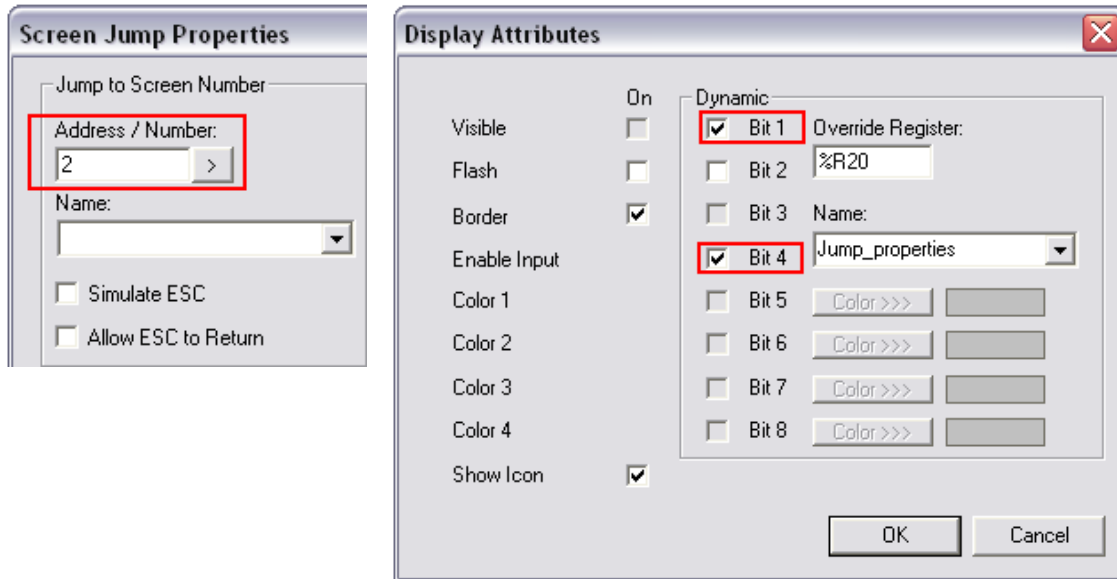
  - ➢ The jump object on screen 2 does not need any dynamic attributes and its destination should point to screen 1

PART 2 - Creating the logic

Create simple logic (one line of ladder is enough) that does the following:

  - Compares the entered password with some user-specified correct password (for example 12345)
  - Enables a jump to Configuration Screen (screen 2) only if the entered password is correct

Solution available on the next page, please attempt before looking

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Solution:
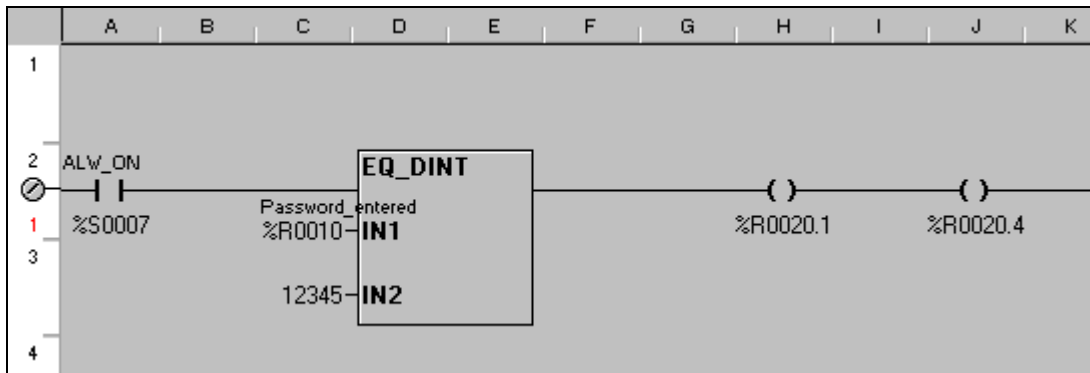
After successful verification if our entered password is identical with the specified 'correct' password (R10 = 12345 in our case) two bits are set up. Those bits (as showed earlier) are responsible for making the Jump Object on screen 1 visible and operational. In every other case the Jump Object stays disabled.

PART 3 – Blocking the System Menu

Expand the logic so the application does the following:

- Disables System Menu button when password incorrect (nothing should happen when the button is pressed)
- Enables System Menu when password correct

Hint:

- The number of System Page currently displayed is stored in System Register %SR3
- Register %SR3 is a read/write type
- If there is no System Page currently displayed (normal OCS operational mode) register %SR3 holds the value of 0

Solution available on the next page, please attempt before looking
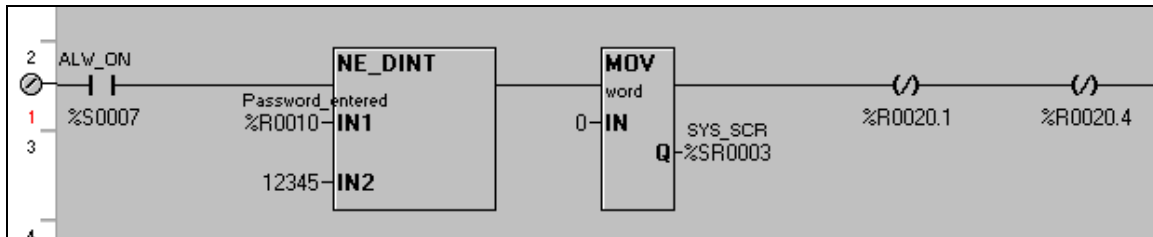
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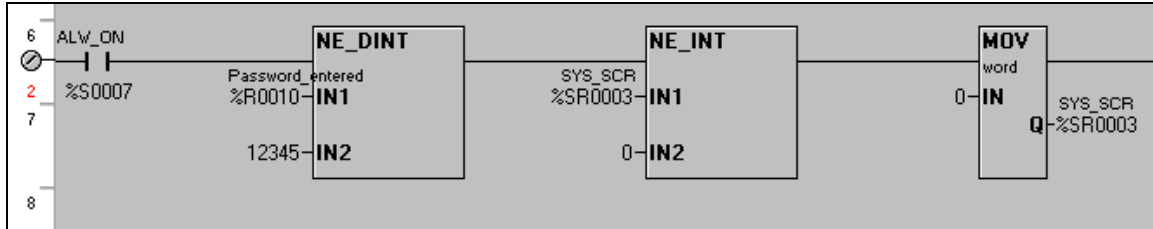
Solution:

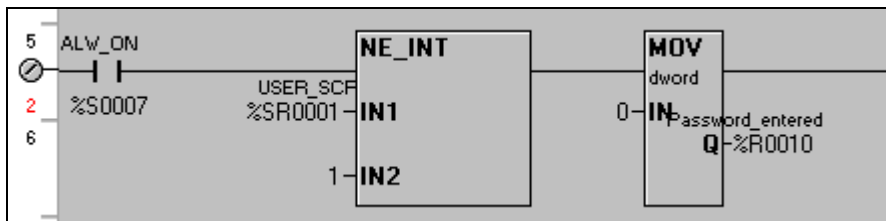This additional line of code forces 0 to register %SR3 (no System Screen displayed) unless the password is correct.

Alternative Solution:

Both tasks could be also done in just one line of code:

Extra Credit:

To make the application more functional we could zero the password when not looking at screen 1. One simple line of code would do that:

The number of current User Screen displayed is stored in register %SR1. If the value stored in %SR1 is different from 1 (screen 1) the entered password is reset.

End of LAB7