

# PLC130 LAB 3.1: CONTROLLER ROUTINES

Student Name: \_\_\_\_\_

Student ID: \_\_\_\_\_

## LAB OUTCOMES:

1. Explain what types of Task's there are
2. Explain what the task's in a project file are
3. Explain how many Routines are in a project file
4. Demonstrate what the names of the Routines in a program are

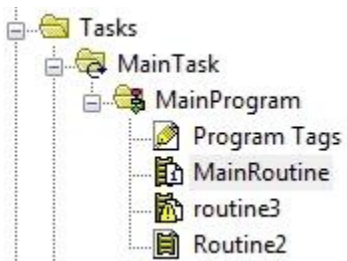
## LAB PROCESS:

Download the project "Compact\_Module\_6\_Routines.ACD" file, go online and put the CompactLogix into RUN mode.

### Part 1



1. View the Controller Organizer window.



How many Tasks are in the project file?

What are the names of the Task(s)?

What type(s) of Tasks are included in the project file?

How many Programs are in the project file?

What are the names of the Programs(s)?

The Program(s) are included in which Tasks in the project file?

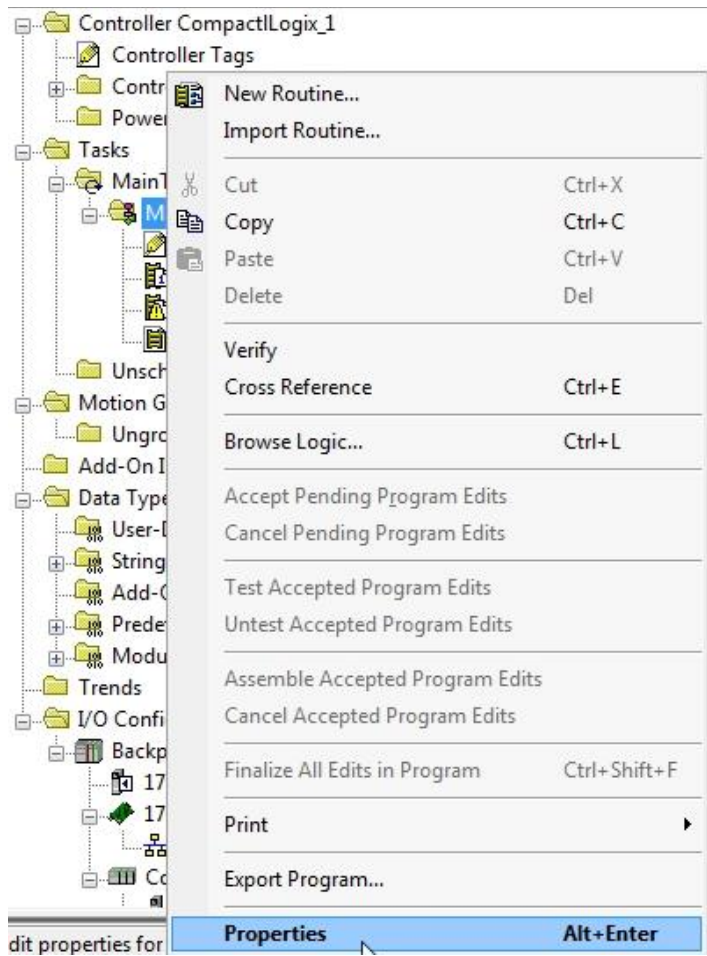
How many Routines are in the project file?

What are the names of the Routine(s) in the MainProgram?

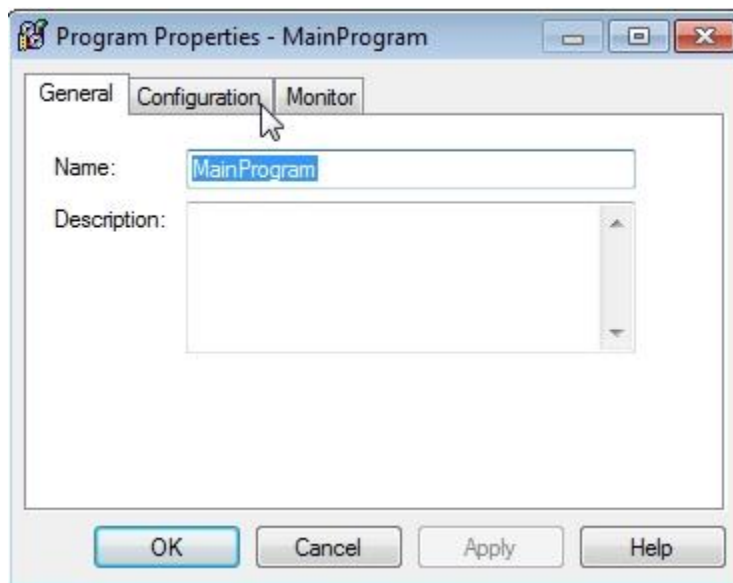
## 2. Monitor the MainRoutine

What category of routine is the MainRoutine?

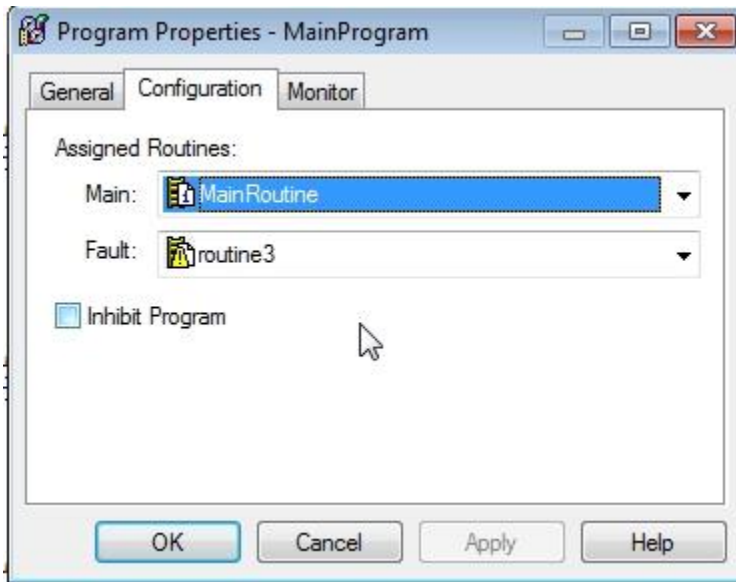
Hint: Right Mouse Click on the Properties selection for MainProgram.



Click the Configuration tab.



Is the MainRoutine one of the Assigned Routines?

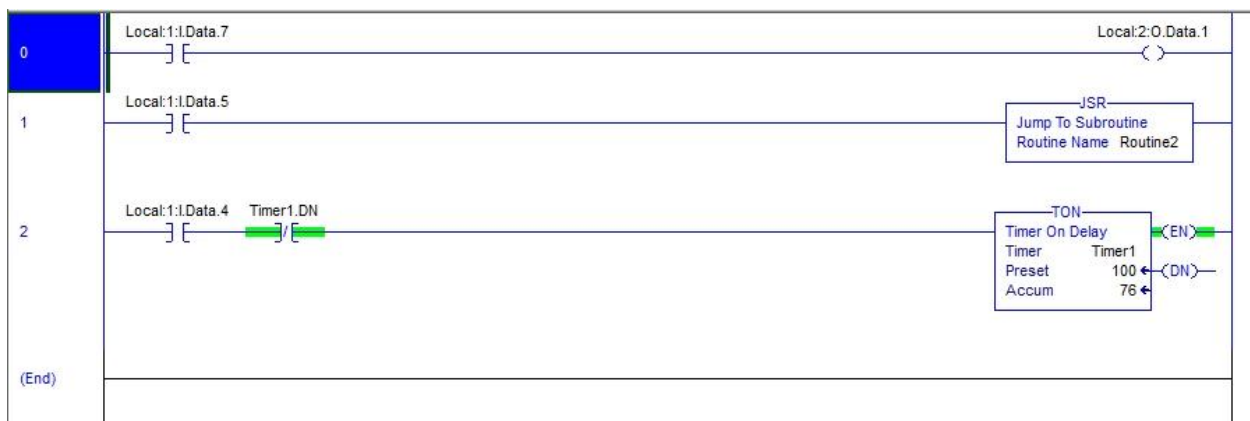


What style of routine is MainRoutine?

Note: Icon for MainRoutine

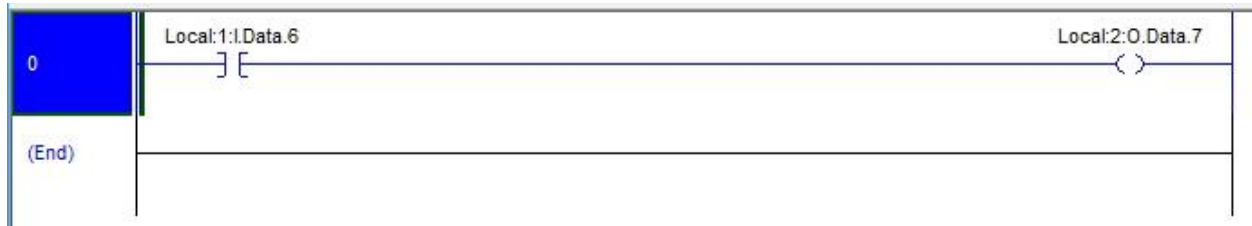
Toggle SS7 – does PL1 turn ON?

Toggle SS4 – does Timer1 start?



Is the processor scanning logic in the MainRoutine?

### 3. Monitor the Routine2.



Toggle SS6 – does PL7 turn ON?

Is the processor scanning logic in the Routine2?

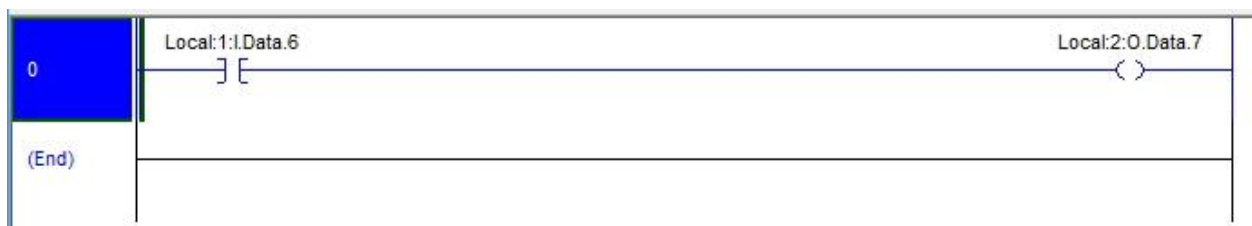
### Monitor MainRoutine



Toggle SS5 to the right – ON position - Rung 1

What is the output instruction on Rung 1 of MainRoutine?

### Monitor the Routine2.



Toggle SS6 ON – right position – does PL7 turn ON?

Is the processor scanning logic in the Routine2?

Is the processor scanning logic in the MainRoutine?

With PL7 ON – Toggle SS5 to the OFF position - Left

Toggle SS6 OFF – left position – does PL7 turn OFF?

Is the processor scanning logic in the Routine2?

Is the processor scanning logic in the MainRoutine?

Toggle SS5 to the ON position - Right

Toggle SS6 ON / Off – does PL7 turn ON / OFF?

Is the processor scanning logic in the Routine2?

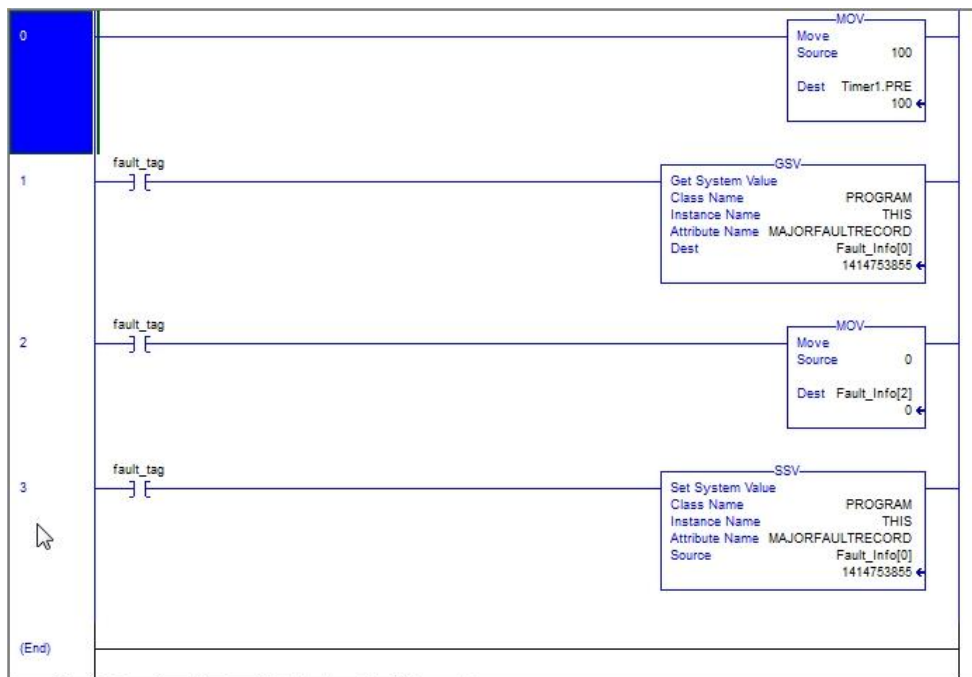
Is the processor scanning logic in the MainRoutine? Explain:

What category of routine is Routine2?

Hint: view output instruction on Rung1 MainRoutine

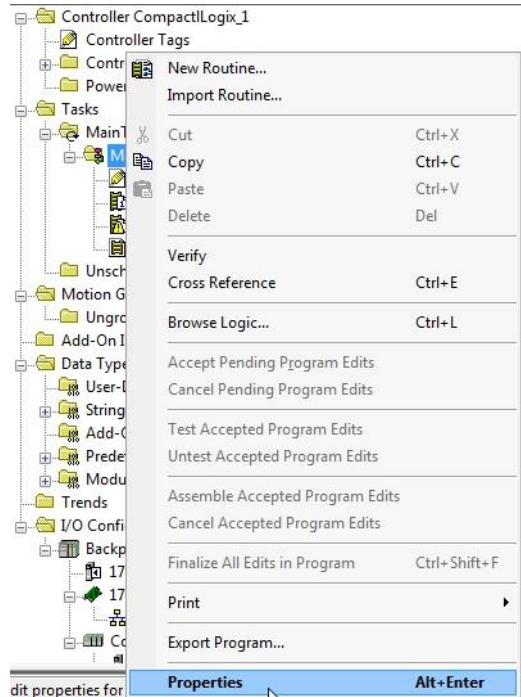
Note: Icon for Routine2

#### 4. Monitor Routine3

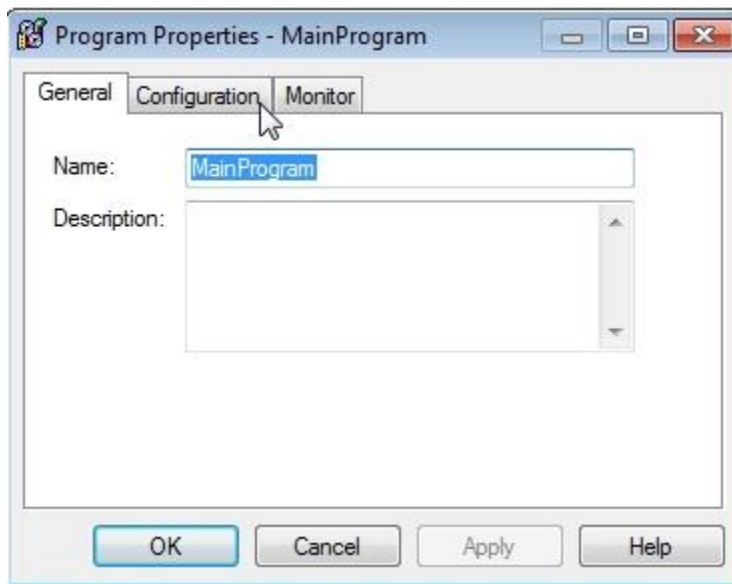


What category of routine is the Routine3?

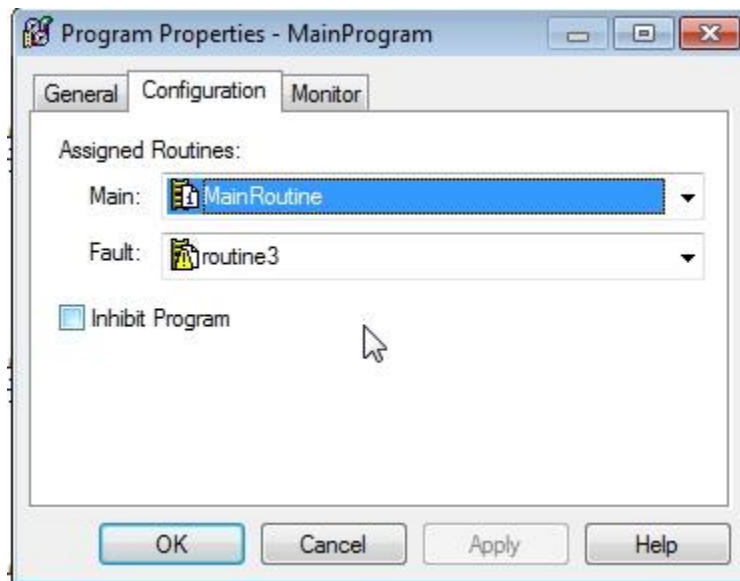
Hint: Right Mouse Click on the Properties selection for MainProgram.



Click the Configuration tab.



Is Routine3 one of the Assigned Routines?



What style of routine is Routine3?

Note: Icon for Routine3

Ensure fault\_tag in Routine3 is false.

Monitor MainRoutine

Ensure SS4 is OFF – left position

What is the Timer1.PRE tag value?



Change the Timer1 Preset value to -1.

Toggle SS4 to ON – Right position

What happens to the processor?

Hint: View OK indicator on the processor

View Online Toolbar in Logix5000 software.

What is the Timer1.PRE tag value?

How did the tag value of Timer1.PRE change from -1 to 100?

Hint: Monitor Routine3 – Rung 0.

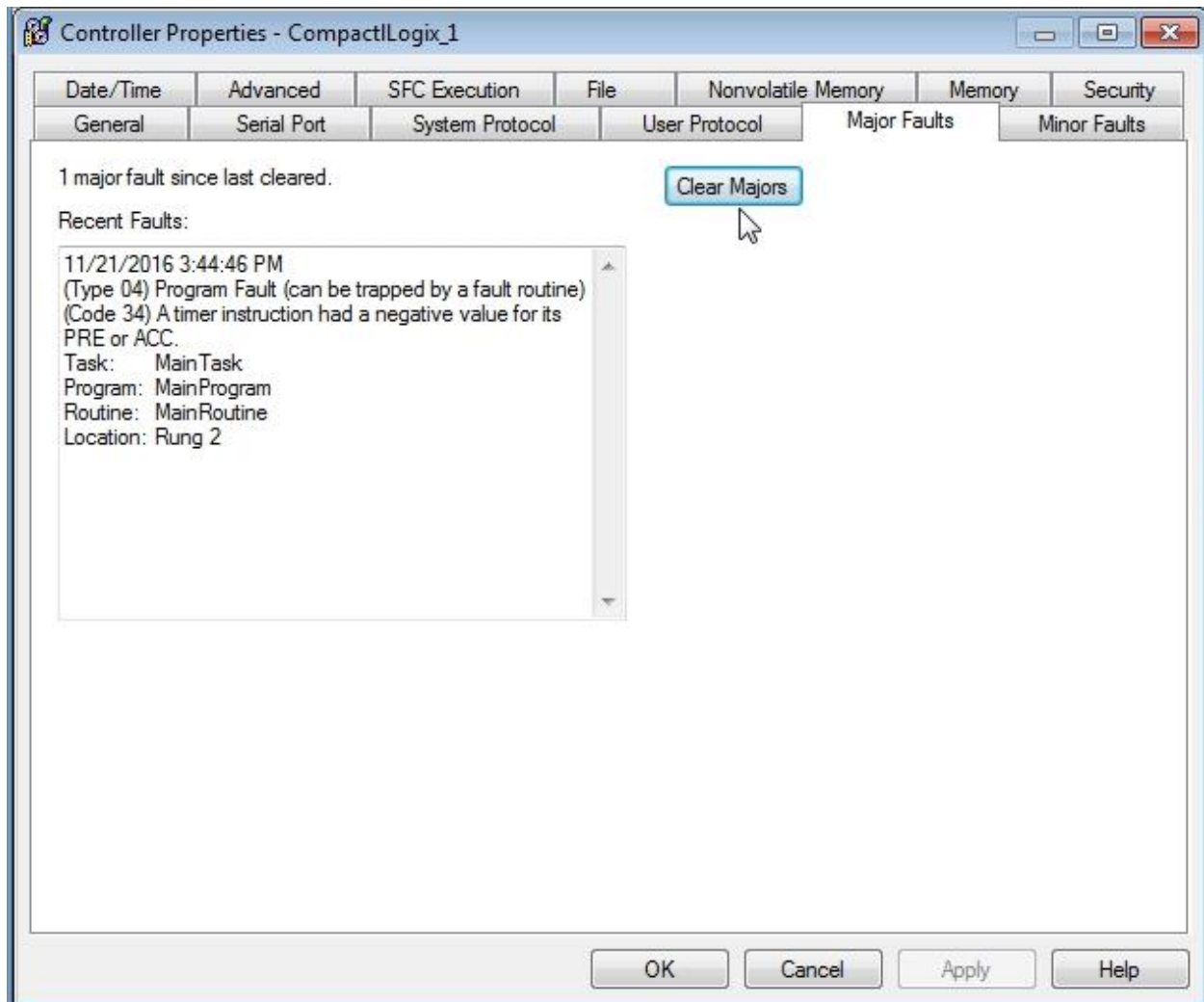
Reset processor fault

Click the Controller Properties button on the Online Toolbar.



Since the processor is faulted, the Major Fault tab will open.

If not click the Major Fault tab on the Controller Properties window.



What caused the processor to fault?

Where is the instruction that caused the fault located in the project file?

Clear the fault by clicking the Clear Majors button.

What mode is the processor in?

Monitor MainRoutine

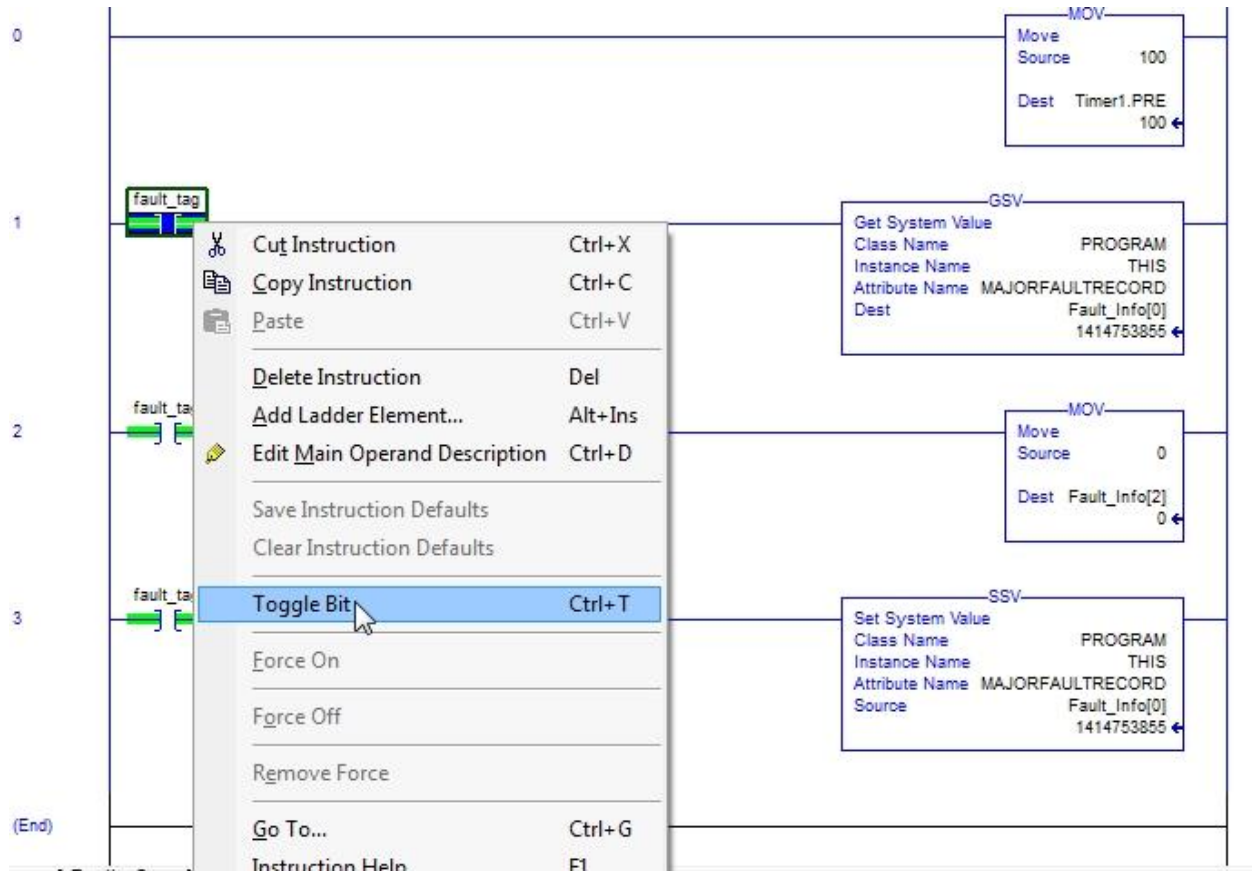
Change the Timer1 Preset value to 5000.

Put the processor in REM RUN mode

Toggle SS4 to ON – Right position

Does Timer1 run?

Monitor Routine3 – Toggle fault\_tag True.



Monitor MainRoutine.

Change the Timer1 Preset value to -1.

If Timer1 is not running Toggle SS4 to ON – Right position

What is the processor mode?

Hint: View RUN indicator on the processor

View Online Toolbar in Logix5000 software.

What is the Timer1.PRE tag value?

How did the tag value of Timer1.PRE change from -1 to 100?

Why did the processor not fault? Explain.

When does a ControlLogix / CompactLogix PLC scan Fault Routines?

*The outcomes of this exercise (listed on page 1) specifies the skills that the Student must demonstrate to the Instructor. Once the Instructor is satisfied with the demonstration of Knowledge & Skills by the individual student, they will sign this document (for the student), then enter a 100% into the Hands-On Lab grade in Sakai.*

I verify that this student has completed all of the requirements of this Hands-On Assessment:

Student Name: \_\_\_\_\_

Faculty Signature: \_\_\_\_\_ Date: \_\_\_\_\_

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