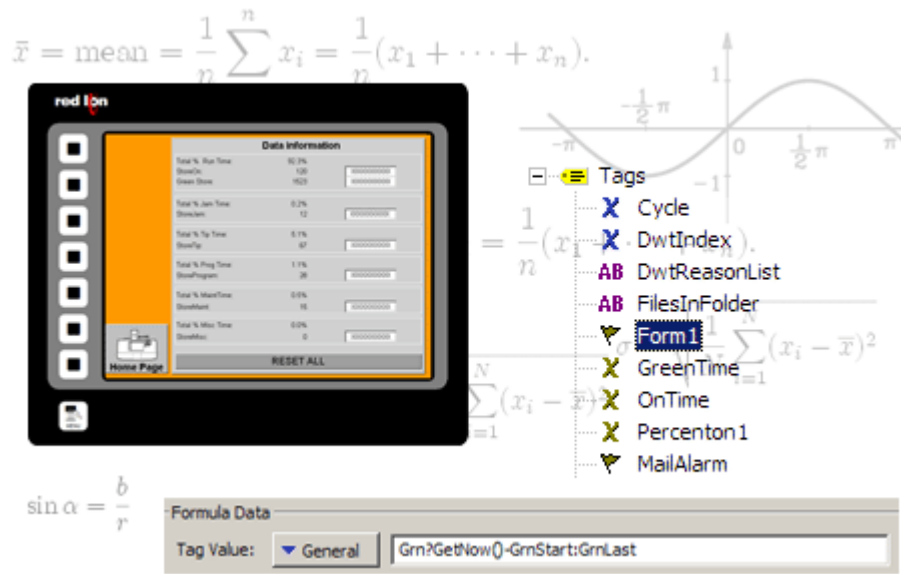


# CRIMSON 2 TUTORIAL

TU0019

## Title: Math and Formulas

### DESCRIPTION



The image shows a screenshot of the red lion HMI interface. On the left, there is a 'Data Information' panel with a table of statistics:

Data Information	
Total % Run Time	92.3%
RunCn	120
RunCn	400
Total % Run Time	0.2%
RunCn	12
Total % Up Time	0.1%
RunCn	37
Total % Prog Time	1.1%
RunCn	38
Total % MsdCn	0.0%
RunCn	18
Total % MsdCn	0.0%
RunCn	0

Below the table is a 'RESET ALL' button. To the right, there is a 'Tags' list with various items like Cycle, DwtIndex, DwtReasonList, FilesInFolder, Form1, GreenTime, OnTime, Percenton1, and MailAlarm. A formula editor is visible, showing a tag value configuration: 'Grn?GetNow()-GrnStart:GrnLast'. In the background, there are mathematical formulas and a sine wave graph.

Using 32-bit floating point math, you can calculate downtime efficiency, production rates, process measurements for statistical analysis and operational equipment effectiveness (OEE).

### BENEFITS

- Manage your production by knowing its status,
- Easily calculate your system ratio, percentage and efficiency values,
- Control the G3 behavior from the HMI making PLC programming easier,

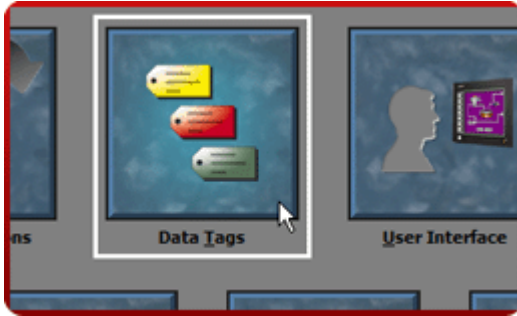
### EXAMPLE

A production manager is interested in the efficiency of his soldering robots. Each robot is linked to a G3 that logs the robot status and actions. Calculations are then possible to find total downtime, number of soldering done per minutes, robot efficiency, percentages on efficient usage, etc. An email is sent at the end of the day to the manager for review.

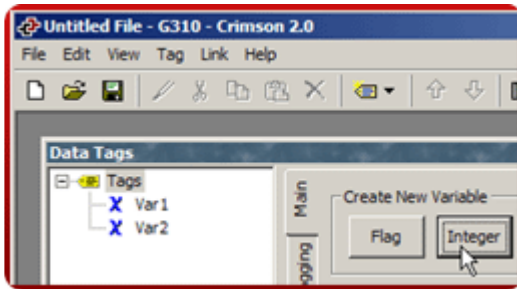
# CREATING AND USING FORMULAS

## Simple average calculation.

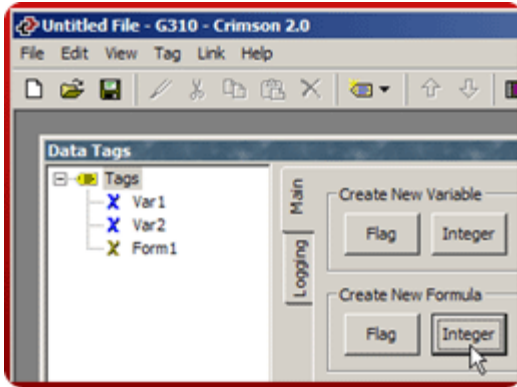
Step 1 Enter "Data Tags" module,



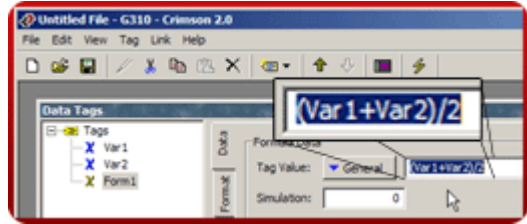
Step 2 Create two integer tags,



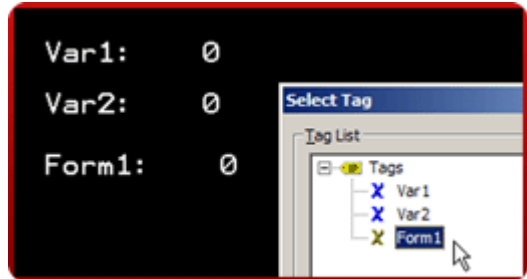
Step 3 Create a formula integer,



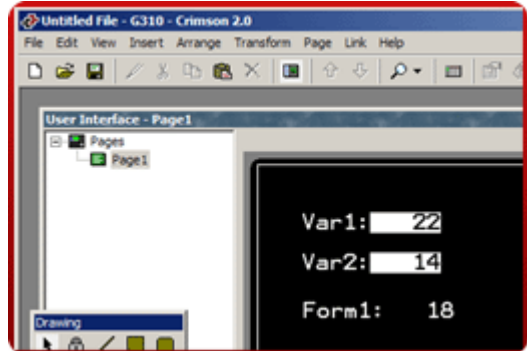
Step 4 Enter the equation,



Step 5 Insert tags and formulas on the user interface,



Step 6 Setup tags as Data Entry,



When the tags values change, the formula result follows.

Formula setup complete!

Reference: <http://www.redlion.net/g3features/G3 Feature - Math and Formula.html>

For more information on Crimson 2.0, refer to the manual.