How to Create a Flowchart in 5 Steps

Introduction

Flowcharts are one of the easiest set of instructions for a reader to follow and when creating them it is important that they 'flow' in the logical sequence of events. The If-and-Then principle is the basis for determining what action to take and under what conditions in order to resolve a particular problem or walk someone through a process. You can use colour to create a quick visual and shapes to make important steps stand out. Try to ensure that the boxes and arrows line up at consistent points and group questions together that have the same next step. You can opt to use a sans serif font such as Arial/Helvetica because you won't have a document that is simply volumes of text.

Instructions

Follow the Steps on Page 2 using this example taken from a Water Treatment Plant (WTP) - Communications Troubleshooting Document to see how the resulting flowchart was created.

TROUBLESHOOTING

~~The lights are very useful in finding out what is wrong with the system. It is probable that you are reading this because you have~~ **1.** received a communications fault alarm for Slave Panel 2, Slave Panel 3 or both. ~~Note that there is a separate alarm at each end of the links so that a failure of one link should generate two alarms, but only one call out. Also note that you will be looking at lots of blinking lights. Do not be concerned about the exact sequence of blinking. It is often so fast that it is hard to tell if the was RX TX Tx Rx or Rx Tx Rx Tx. This is not important, only if you get an RX or a TX or both.~~ **2.** During troubleshooting, be patient, watch carefully, and write down what you see s~~o you don't have to go back several times.~~ **3.** A form for this is in Appendix A. ~~Also, in many cases, the instructions will indicate that the component should be rebooted (remove power and return power).~~ **4.** Please do not do this indiscriminately as it does provide a shock to the system and can cause damage. ~~That is, when a person has a heart attack, a defibullator can save their lives, but if they are healthy, it can be fatal. The same is true for the communications system;~~ **5.** do not reboot the system without suspecting that the equipment needs rebooting.

6. Always start at the Master WTP ~~and review what is supposed to happen. Eventually you should come across an abnormality which means that the message has stopped at this point. It is wise to continue on at least one more point as a transmit message could be getting through but the receive is not coming back. If a station is transmitting, and the next station is not receiving, the problem is likely with one of those two devices. If it is transmitting and the next device is receiving and transmitting then you need to go down the line further. Eventually you will find out where the message is being received but not transmit. The following might further help your troubles.~~

WTP PLC (THE BEGINNING) S

If the MB+ light (3) isn't blinking rapidly (4 times per second or so), you have a problem with the PLC or the MB85+. If it is blinking at the PLC but not the MB85, first check the cable between the MB+ ports to ensure it has not come loose, then power off the MB85 and power it up again after 15 seconds. If it is not blinking at either end, then check that the PLC run light is on (see panel door). **7.** It is not recommended that you reboot the PLC without further advice.

MB85 S

Assume the MB+ light is blinking regularly but the Port 1 light is not. Check the cable between Port 1 and the Telebyte to ensure it has not come loose. Note if port 4 is blinking or not (it usually blinks twice per second). If Port 1 is not blinking and the cable is tight, power off the MB85, wait 15 seconds and power it on again. Note any changes.

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1. Remove excess verbiage, personalization, and descriptions that are discussed elsewhere in the document as you can make reference to them within the flowchart, i.e., Table 1, and ensure that the references match
2. Itemize the remaining statements and determine if they are **G**uidelines for the flowchart or **S**teps in the flowchart:
    1. received a communications fault alarm for Slave Panel 2, Slave Panel 3 or both **S**
    2. During troubleshooting, be patient, watch carefully, and write down what you see **G**
    3. A form for this is in Appendix A **G, S**
    4. Please do not do this indiscriminately as it does provide a shock to the system and can cause damage **G**
    5. do not reboot the system without suspecting that the equipment needs rebooting **G**
    6. Always start at the Master WTP **G**
    7. It is not recommended that you reboot the PLC without further advice **G**
3. Organize Guidelines (if applicable) in logical order
4. Highlight common Step phrases, i.e., check cables
5. Organize Steps in logical order – Yes & No questions are easiest to follow

Result

TROUBLESHOOTING: Fault Alarm

1. During troubleshooting, be patient, watch carefully, and write down what you see each time using the Troubleshooting Form in Appendix A.
2. Always start at the Master WTP.
3. Do not reboot the MB85 without ensuring that the equipment needs rebooting & do not reboot indiscriminately as it can cause damage.
4. Do not reboot the PLC without professional advice from a qualified technician.