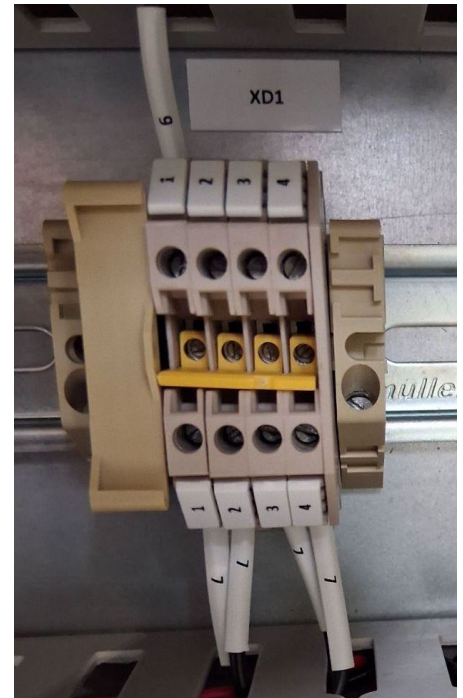


Proeon project report:

What i learned:

I learned about the software and hardware used to create the automated systems in their works. I learned about how different they would label each and every cable and piece of hardware with a number or identifier so they can easily track it down in their Bill of Materials (BOMs). Examples of this would be XD1 for a terminal block or each cable being labelled from 1-whatever is needed depending on how many labels there are. I also learned how to program said software and the struggles that come with it.



How PLCs work:

A PLC or programmable logic controller is an industrial computer used to automate machines by reading inputs from sensors, processing that data and giving outputs in relation to what the input told it to do. This is one of the 2 main components that are used to make their systems work

How HMIs work:

HMI or human-machine interface is a screen that allows people to interact with the processes inside the machine. A simple example of this could be our phones as the touch screen we use daily is a HMI. This is the second of the 2 main components that are used to make their systems work.

How PLCs and HMIs work together:

The PLC is like the brain of a machine while the HMI is the face that shows what the brain is doing in real time. Using the train simulator as an example. Once a button is pressed (the input) the PLC will tell the HMI to indicate it is pressed by flashing one of the corresponding lights on the screen (the output), if the PLC and HMI are programmed correctly and all the buttons were pressed in the right order, it would give us a simulated sequence of train light flashing and the door closing with a train going past. Then the doors would open and the lights would stop flashing.

Challenges encountered:

We faced many issues while programming the software. For one there was a timer that would not calibrate to what we wanted. This means we had to recreate the tag and the timer to finally get them to sync up. Another issue we faced was the flashing of the lights. We needed to add another layer to the light with a different colour and get the software to flash between the two thus simulating the lights flashing.

Proeon project report:

How we ensured the software was structured and maintainable:

We made sure that all the software was easily readable for anyone to look into it. This means that even if someone were to open it up without any prior knowledge of what was placed, they could find out what does what and when it happens.

What i would improve of the project continued:

I would have developed the animation on the software more as it looked very simplistic and unfinished. Sadly there wasn't enough time to do that so it was left in that slightly unfinished look.