

1809802

by Mason Morgan

Submission date: 19-May-2023 11:25PM (UTC+0100)

Submission ID: 207004019

File name: 13695_Mason_Morgan_1809802_181749_1225683940.pptx (3.36M)

Word count: 336

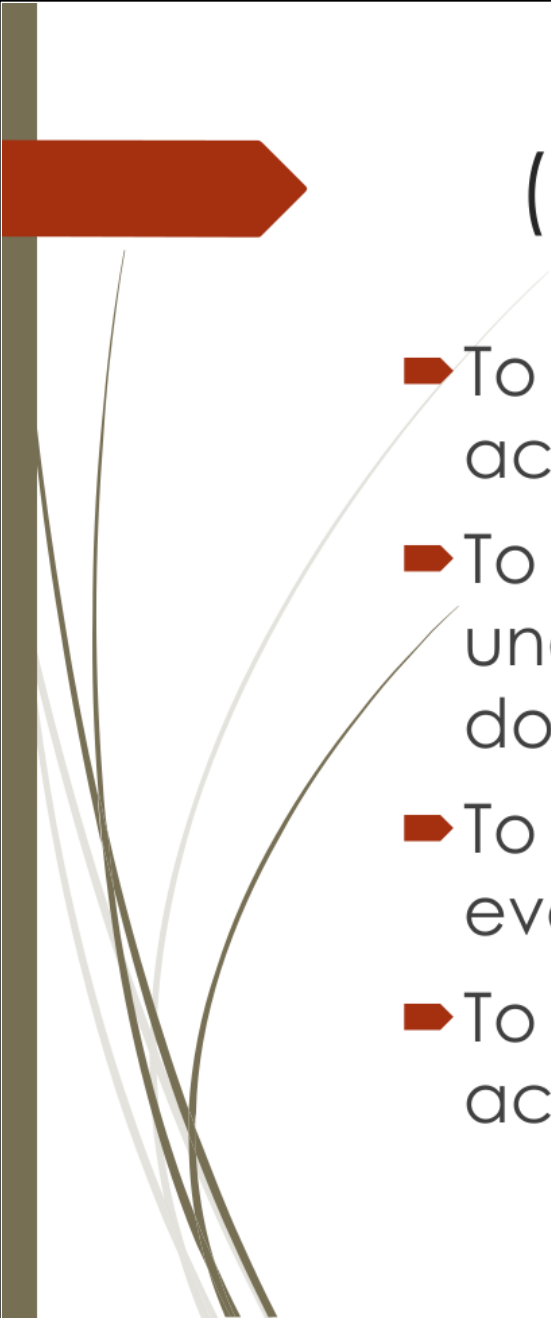
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LINE 2 GLASS BOTTLE DOWNTIME MONITORING SYSTEM

*BSc Independent
Project Presentation 2*

MASON MORGAN



(1) Aims & objectives of the project

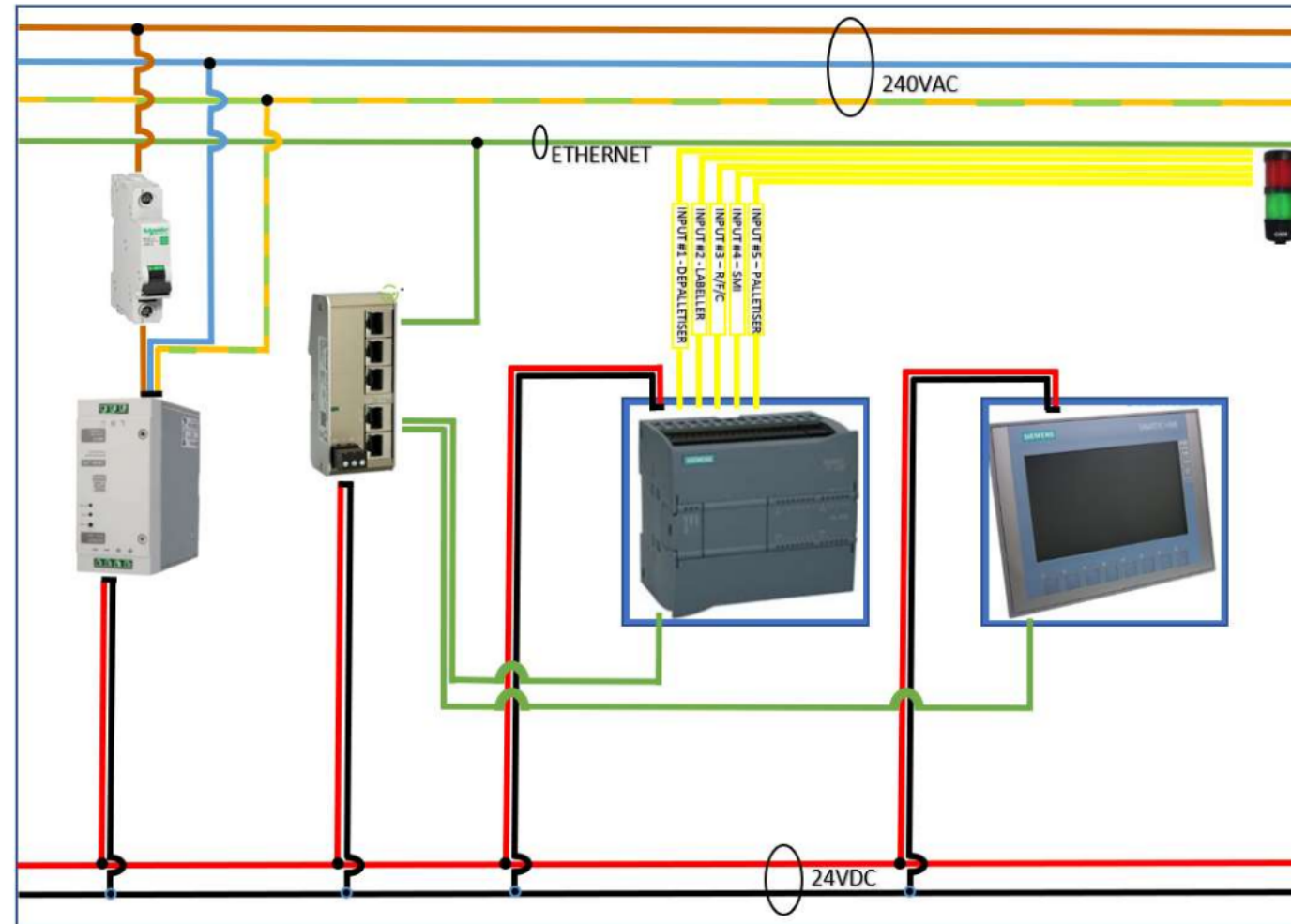
- To establish the amount of downtime the machines accumulate.
- To help meet stock targets more regularly by understanding which machines cause the most downtime.
- To Improve the efficiency of the machines & improve everyone's safety.
- To reduce the downtime that the machines accumulate.



(2) Function design specification & any changes made

- Capability to isolate the panel.
- To monitor statuses of all machines through a HMI or through means of simulation.
- To determine the amount of downtime from each machine through interactive technology.

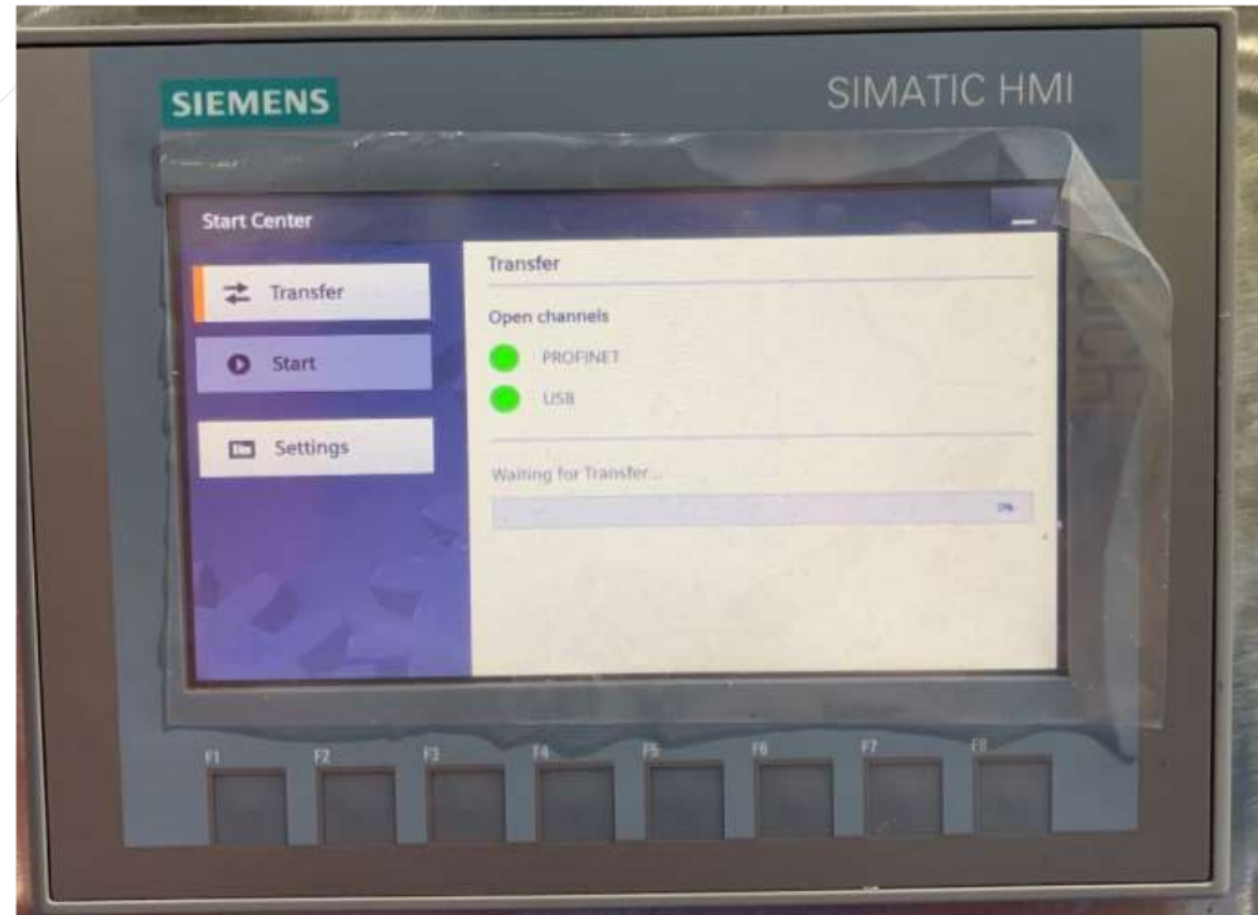
(3) Design details of the solution to meet requirements of the FDS.



(4) Construction phase of solution



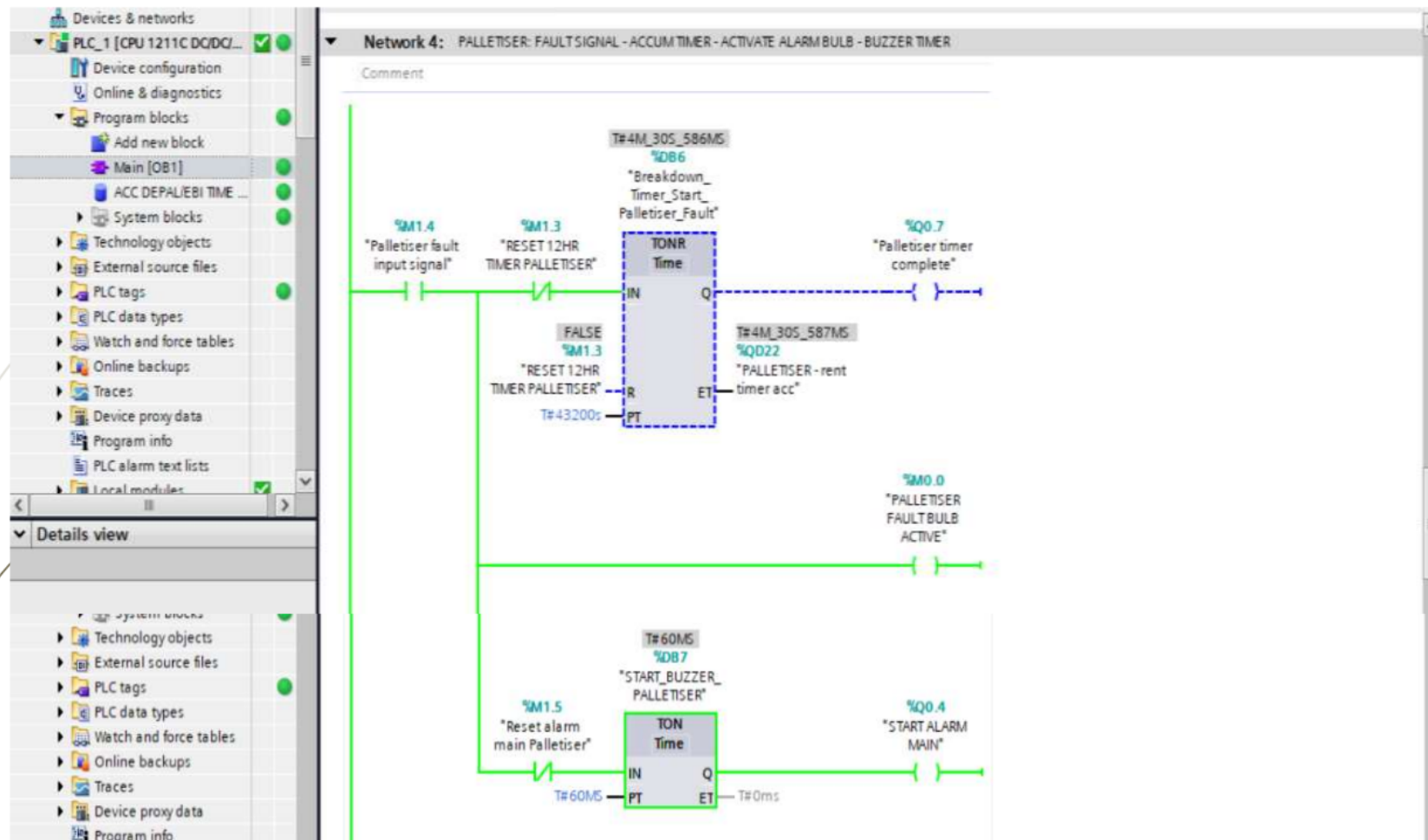
(5) Testing of the solution, analysis of results



➡ Powering the system

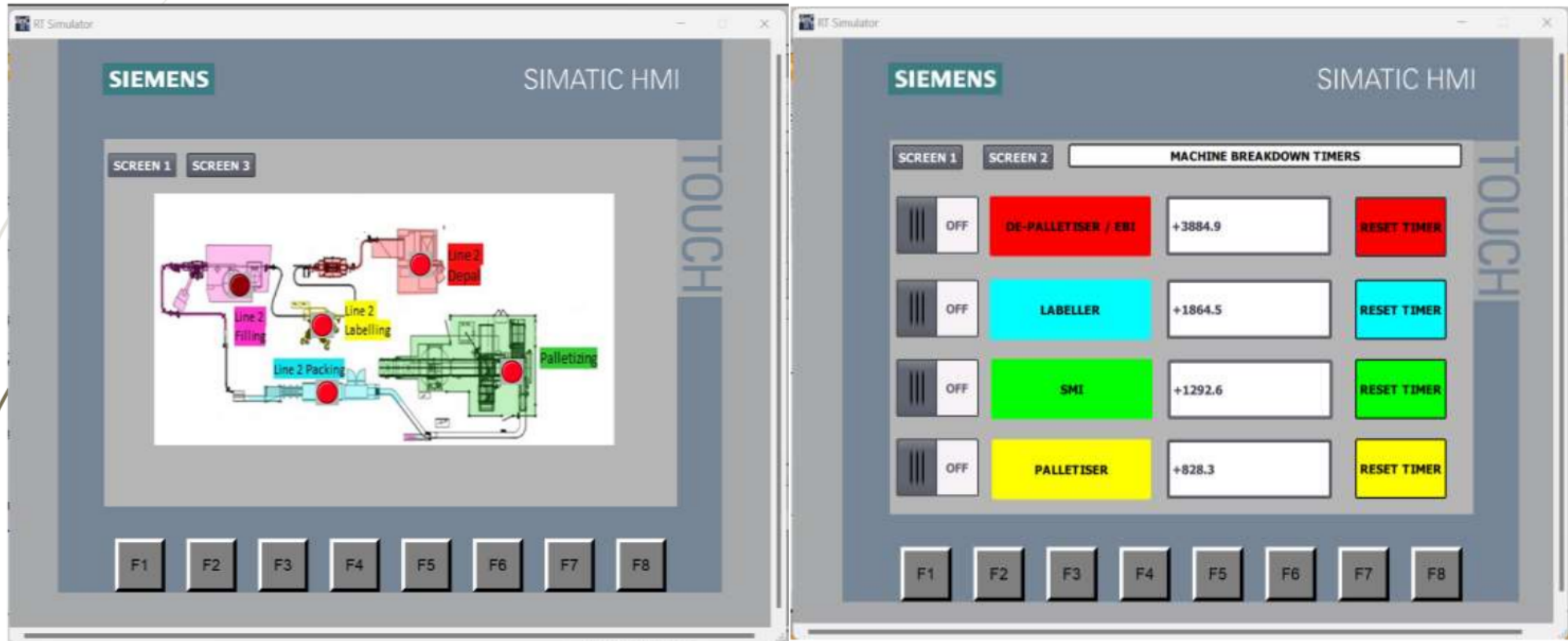


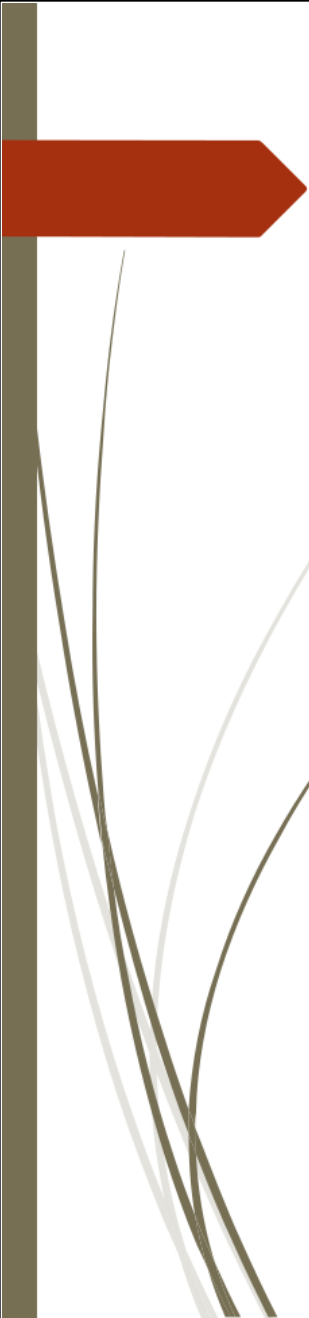
- Using the circuit breaker to energise the system.



➤ Using Ladder logic to simulate the project

► Simulating the hmi screens





(6) Critical evaluation of the project solution & outcomes, comparison with the FDS.

FDS POINT 1

- The panel could be isolated by using an air isolator located on the side of the panel.

FDS POINT 2

- The machine statuses could not be monitored through the HMI.
- The machine statuses could be monitored through TIA Portal using Simulation mode.

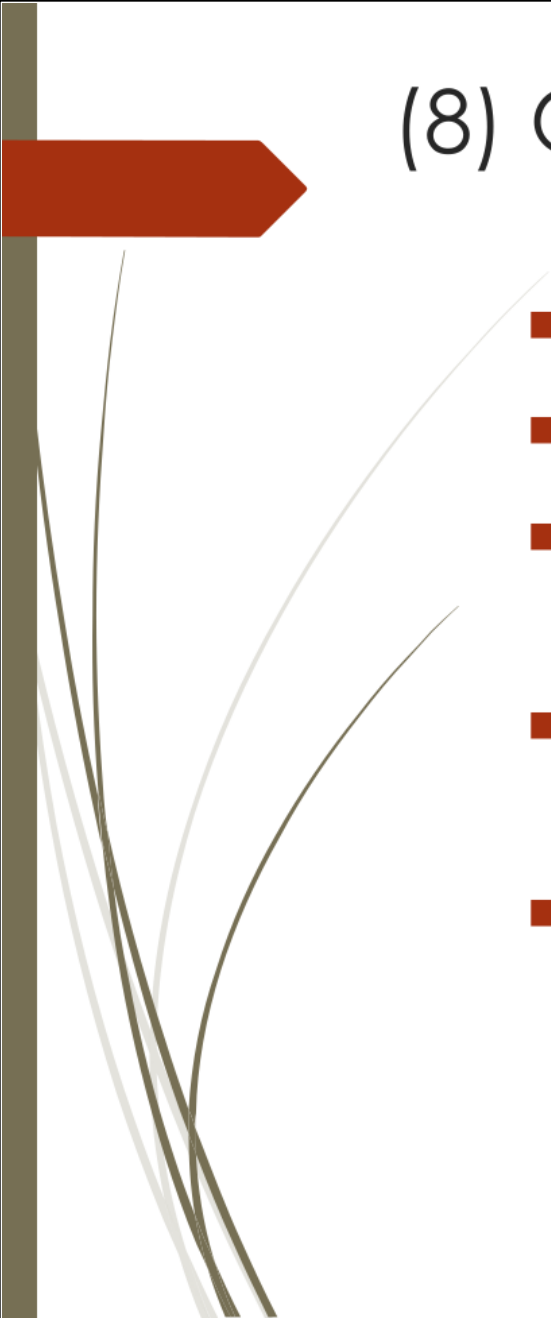
FDS POINT 3

- The amount of downtime from each machine could not be monitored through the HMI.
- The amount of downtime could be monitored using TIA Portal using Simulation mode.



(7) Review of management techniques & planning, comparison with initial plan

- It is important that everyone is accountable for their actions.
- Seek alternative systems perspective.
- Understand the organisations objectives & constraints when determining the optimal solution.
- Meeting activities to a certain time scale.
- Creating a Gantt chart to monitor & track all tasks through the project period.



(8) Overall conclusion & recommendations

- Does the system work in the workplace. NO
- Can the system be safely isolated. YES
- Can the HMI screens be displayed. YES (Using simulation mode)
- Was the project completed within the time constraint. NO
- Can the machine downtimes be accumulated. YES (Using simulation mode)

FINAL GRADE

GENERAL COMMENTS

Instructor

55/100

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GRADING FORM: NEW CSG-RUBRIC

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1. ENGAGEMENT WITH LITERATURE

 N/A

2. KNOWLEDGE AND UNDERSTANDING

 Project design
Briefly stated with changes from original solution (6/10)
Project implementation.
Panel was built and software written for the PLC and HMI (5/10)
Response to questions
Satisfactory (4/10)

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3. COGNITIVE AND INTELLECTUAL

-  Testing and analysis of results
Some evidence of simulation but not panel testing other than switching it on (5/10)
Critical evaluation of the project outcomes relating to FDS and constraints
Good references made to the FDS and evaluation (5/10)
Conclusions and recommendations
Briefly stated (5/10)

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4. PRACTICAL APPLICATION

-  Deployment method, use of material, tools, equipment and techniques in the construction of the project
A well-constructed panel, PLC program and HMI screens (6/10)
Quality of the final product or system
Good quality product (6/10)
Management of the design process including use of plans, costing spreadsheet
Good evidence presented (6/10)

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5. TRANSFERABLE SKILLS

-  Quality of the presentation slides (4/5)
Quality of the delivery style (3/5)

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