

German University in Cairo

Mechatronics Lab (MCTR704)

PUT HERE YOUR PROJECT NAME

Project No. []

Name: **I.D. #:**..... **Group:**

Name: **I.D. #:**..... **Group:**

Table of Contents

Mile Stone No.	Content	Page
1	Project Description	
1	Solid works Design: 3D Schematic Diagram.....	
2	Mechanical Components 2D projections with Dimensions.....	
2	Project Components list and PDF Description.....	
2	Pneumatic Circuit.....	
3	Hardware Model.....	
4	Pneumatic Step Diagram and Description.....	
4	Controller Sequential Chart.....	
4	Controller Operating Panel Classic Control implementation.....	
4	PLC Control Program	

Project Description

Note

Before starting your project, you have to identify your object size (dimensions) to ensure that your project size will be suitable for the object size you selected.

Generally explain your project idea and objectives. Please note that the project should have a seated frame structure to assemble all the components on.

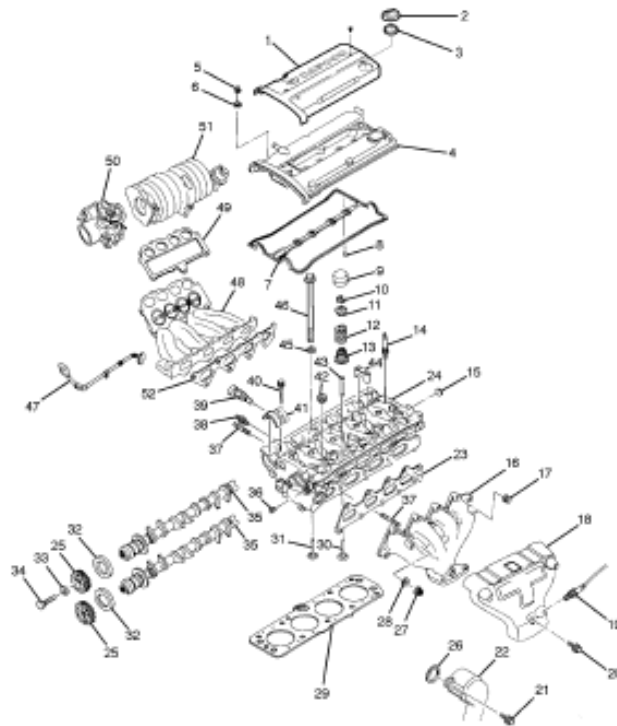
Explain your project operation according to your mechanical design and operating process.

Solid works Design: 3D Schematic Diagram

- draw the project in 3D with solidworks tool
- explode the mechanical 3D and give a number for each mechanical part
- Fill in the table showing the part number and its name

Part number	Name

EXAMPLE:



Mechanical Components 2D Projections with Dimensions

Each part in the project is considered a component, even the nut and screw. Each component will be presented in a separate row in the table shown below.

Fill in with the Part Name and number as given in the 3D Area for Drawing in in 2D (with dimensions)
Fill in with the Part Name and number as given in the 3D Area for Drawing in in 2D (with dimensions)

Fill in with the Part Name and number as given in the 3D
Area for Drawing in in 2D (with dimensions)

Fill in with the Part Name and number as given in the 3D
Area for Drawing in in 2D (with dimensions)

Extend the table for your entire components list

Project Components list and PDF Description

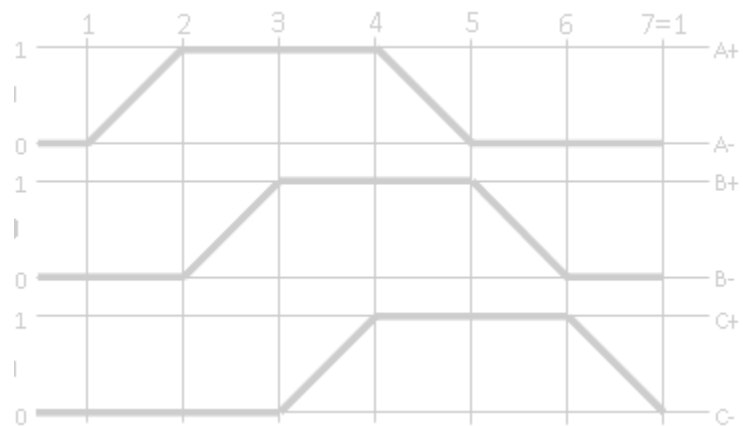
- Create a table with all the components needed in your project, and describe every components function and need.
- Attach with the project documentation the PDF datasheets of the selected components.

Pneumatic Circuit

- Draw and simulate the pneumatic circuit by using the fluidSim software application (download this software from the internet)
- The pneumatic circuit should include all components and should be fully functional and running.

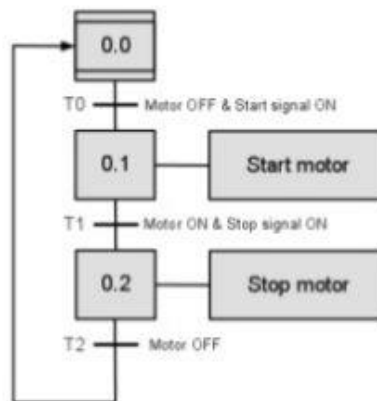
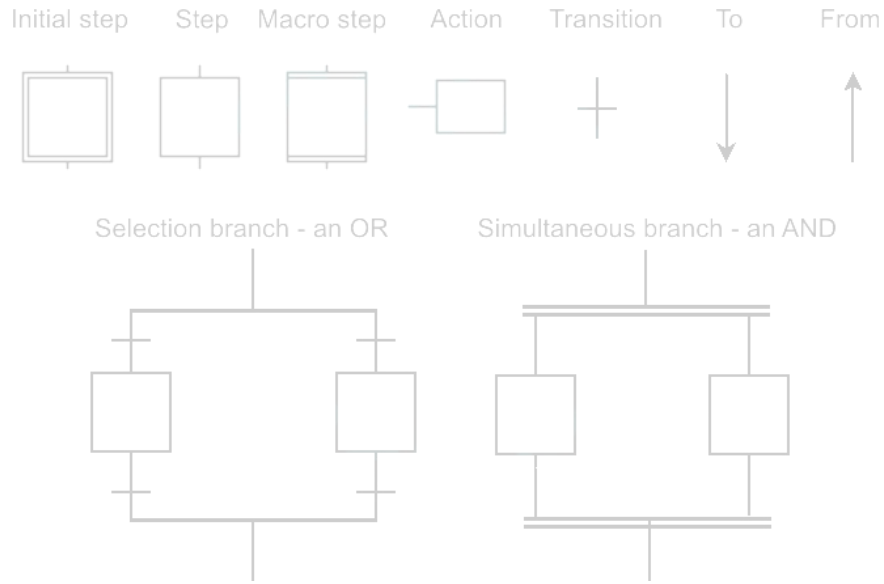
Pneumatic Step Diagram and Description

- Draw the pneumatic step diagram based on your project's operation, as shown in the example below.
- Explain your provided pneumatic step diagram; the sequence and the project's operation.
- Example for the pneumatic step diagram



Controller Sequential Chart

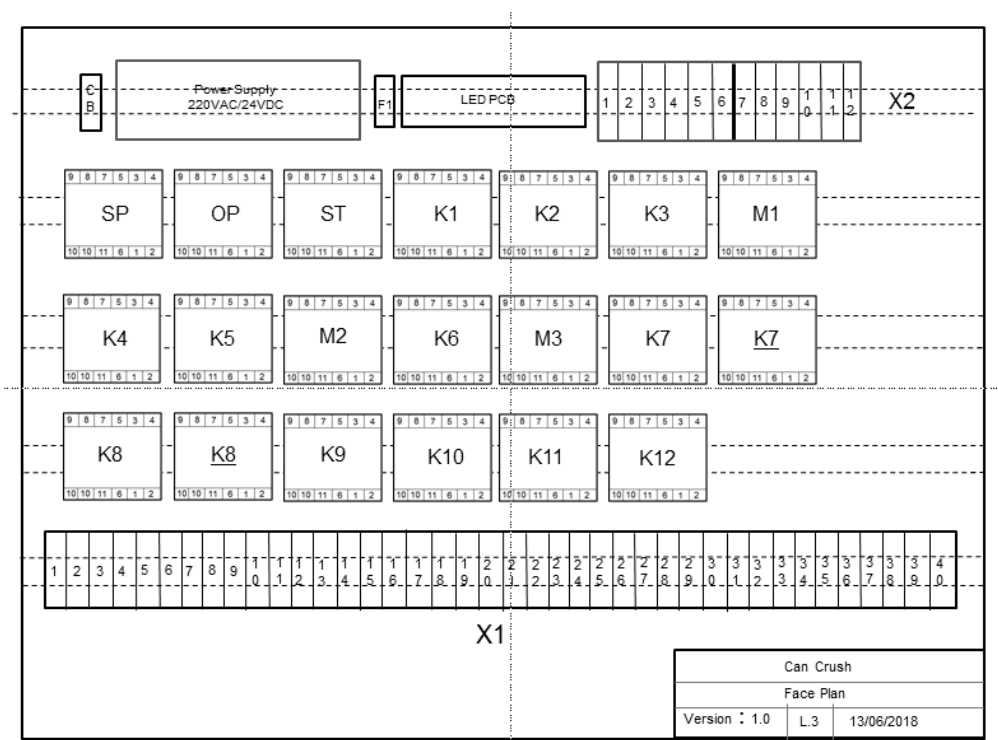
Draw your controller sequential chart based on your project's operation, as shown in the example below.



Controller Operating Panel/ Classic Control Implementation

As you already have the information for each component (power supply, solenoids, relays, I/O terminals...), you can configure the size of the panel you need for your project.
Implement the classic control by using the fluidSim software

An example for a panel configuration is shown below:



PLC Control Program

After specifying your project's operation, designing your hardware, and specifying all you inputs and outputs, program your controller using FBD coding. Provide you program networks below: