Resistor sorting robotic arm

We could have an image of our arm here maybe?

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|  |  |
| --- | --- |
| Abbreviation | Meaning |
| V&V | Verification and Validation |
| MVP | Minimum Viable Product |
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# Project management

## Risks and Management

'- Risk awareness and how we managed these risks

Table

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Figure 1 - Risk Characterisation Table

Text

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Figure 2 - Risk Key

Graphical user interface, application

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Figure 3 - Risk's and Mitigation Plans

Pick a Risk from each Section and Write more in-depth about it

The Verification and Validation (V&V) plan (covered later in this report) was vital to the success of the project. V&V allowed the confirmation that all sections accomplished were traceable to the system and high-level design, and also completed their intended outcome, without adding bloat to the project. As V&V was so vital to the project the robust plan was formed early on and rigidly maintained throughout the venture.

The Design risks heavily rely on a vigorous V&V plan, through this the likelihood of a project delaying/cancellation issue is extremely unlikely. This is further evidence of the need for a competent V&V plan. Legal and contractual issues would be a greater issue past this project’s scope and after the production of the minimum viable product (MVP) but designing the arm from scratch will minimise these issues. Economic issues are largely out of the control of the start-up, however suitable mitigation in the case of an issue is still needed and provided. Through continued discussion with the stakeholders, described in the High-level design section, there is an undersaturated market for this product and minimal competition. However, if the market decreased/becomes oversaturated this could financially cripple the company so continued talks are necessary. As with any product, a suitable look into health and safety in the manufacture and use of the product is necessary and the necessary documentation will be provided for both.

## Team allocation

At the start of any project, it is vital to determine and define the team structure and roles, making sure everyone in the team understands their responsibility and roles. This breakdown is detailed in Figure XX 4). To further emphasise each team members roles and responsibility a responsibility matrix was created (Figure XX 5). This level of planning allowed team members to know what they needed to complete and who had the information to help them, also allowing individual members to make sure everyone else had completed their section.

Diagram

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Figure 4 – Team structure

A screenshot of a computer

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Figure 5 - Responsibility matrix

## Planning and Scheduling

- Planning and scheduling

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Figure 6 - Work Breakdown Structure

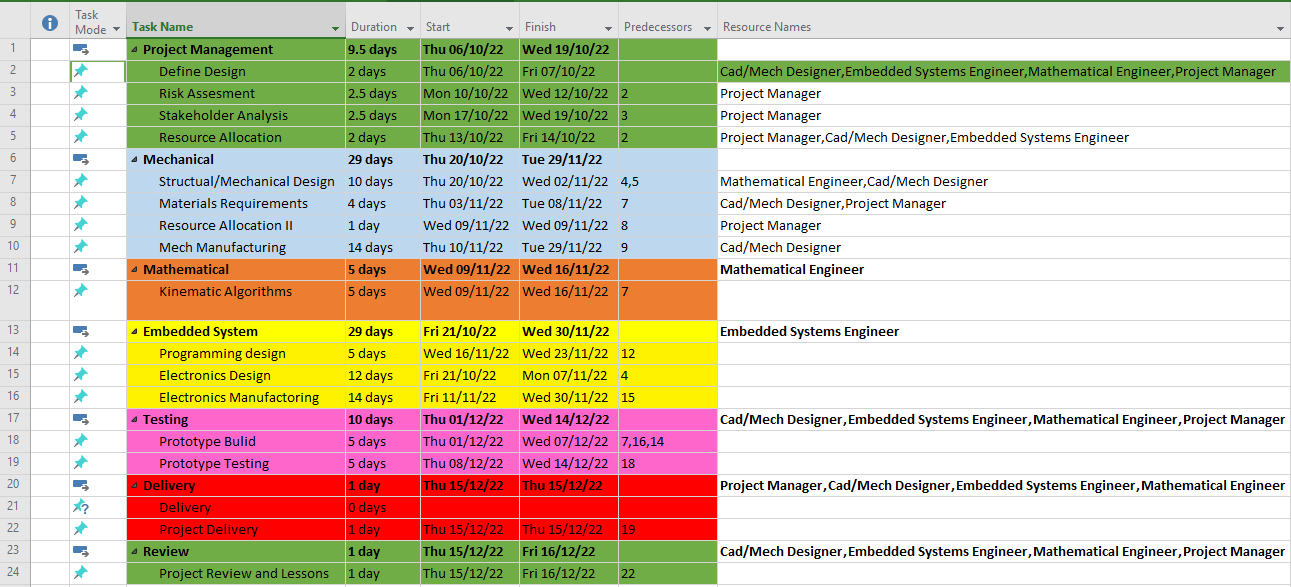


Figure 7 - Project Gant Chart 1

Timeline

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Figure 8 - Project Gant Chart 2

## Progress monitoring and Coordination

- Progress monitoring and coordination

# High-level design

## Top-Level System Design

## - Presentation of top-level system design.

## High-Level Mechanical Design

- Presentation of high-level design of the main subsystems (e.g. software, electronics).

## High-Level Software Design

- Presentation of high-level design of the main subsystems (e.g. software, electronics).

## High-Level Electrical Design

- Presentation of high-level design of the main subsystems (e.g. software, electronics).

## Requirement Analysis

'- Requirements analysis

## Traceability

The High Level design requirements were specified from user requirements, as is corroborated by the Requirements list. This list was form in collaboration with various stakeholders to produce a comprehensive idea of what the robot was required to complete.

# Low-Level Design

## Implementation

'- Lower-level specifications and implementations to address the requirements.

Have a sequence diagram of how the outside world interacts with our robot and how it interacts with the world

## Low-Level Documentation

- Clear and accessible documentation of low-level designs.

## Traceability

Diagram

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Figure 9 - High -> Low level design with traceability

# Verification and Validation (V&V)

## V&V Plan

'- V&V plan to evidence that requirements are satisfied, with consideration for traceability.

## Evidence

- Evidence of completed V&V exercises.

V&V matrix

# Reflection and Evaluation

## Strengths of our project

- Thoughtful and accurate assessment of strengths and weaknesses in your group's design process.

## Weaknesses of our project

- Thoughtful and accurate assessment of strengths and weaknesses in your group's design process.

## Next steps in our start-up

What we would do to make the product more viable

- Identification of key lessons in generalised terms that can be applied to future projects.

## What we would do differently next time

- Identification of key lessons in generalised terms that can be applied to future projects.