**Scope and Limits**

Let’s begin by first acknowledging the fact that this project is by no means a simple undertaking. The fact alone that we are going to be incorporating Machine Learning, a new technology that is still in development, should speak volumes of the level of ambition we have for this project. As a direct result of this, it is essential that we establish realistic expectations of what we will be able to achieve with the amount of time we have available. As mentioned in our progress report, our group is still in the conceptualization phase as that is what is helping our members come to understand the goals at hand. The issue with this, however, is the fact that it hinders our collective foresight. As we are still in the early stages of learning about the various technologies necessary for making this project possible, this makes it difficult to then establish an estimation of how long it will take us to complete certain tasks. This is especially a problem when you consider the fact that said tasks may come to evolve as we move forward with the project, requiring different areas of expertise for completion.

At the core of this project, the two main areas of focus are databases and security measures. Let’s start by considering the database. All else aside, we actually need to obtain one. If we can find a reliable source, this part of the project should be relatively straight forward. The most difficult part of this would perhaps be obtaining the necessary funds to do so. It would be in each member’s best interest to make a contribution towards the cost however, so this shouldn’t be too much of a problem. Once that is done our focus will shift towards the creation of a self-learning anti-virus. This is the fundamental aspect of our project that will require the bulk of our time and energy so it is best that we get started on this as early as possible. If we require assistance in doing so, we should ensure that there is ample time to seek such assistance.

Taking the anti-virus aspect one step forward, it would be a good idea to interview experts in the field of anti-virus technology. One would expect them to possess valuable insights that could accelerate our progress and save time. We’d then need to consult with experts in the field of Machine Learning, gathering their inputs and seeing if they have any ideas on how to create a self-learning ant-virus. Again, successful interviews and consultations would save us a lot of time. We’d also need to obtain the necessary virus data for our anti-virus to experiment with and learn from. It would be entirely useless to us if it didn’t know how to combat current threats. Obtaining this kind of data has the potential to be time consuming. The experts we’d be in contact with would possibly be able to point us in the direction of where we would be able to find such data.

Given how difficult it can be to define the scope of a project in general, particularly in the early stages, we can still attempt to break objectives down into basic guidelines that we can refer to along the way. In theory, we can break all of this down into four phases:

* **Conceptualization** - The shortest of all the phases. Once completed, acts as a starting point from which we can then move forward with confidence.
* **Conduction of research** - Expected to be the longest of all the phases. We should expect that we’ll need to dedicate as much time as possible to the completion of this phase.
* **The gathering of necessary tools and resources** - In comparison to Phase 2, this phase shouldn’t take as long. At this stage we’d already know where to find the components we require.
* **Construction of a working prototype** - Potentially the second longest phase. Should ensure that there is a substantial amount of time remaining towards the deadline in order to successfully complete this phase.