Design Criteria

**Self Sustaining:** The hydroponic system is required to be self sufficient, in order for this to happen, it will be needed to collect water on its own and generate electricity. will need to be applied to the system for minimum care and maintenance.

**Electricity:** Due to the system being a hydroponic system, there needs to be a water pump which pumps water throughout the system. This requires electricity, which has to be generated using solar panels and a battery to store the electricity when there is no sunlight.

**Water Collection:** A system has to be designed and fitted for the greenhouse to collect water efficiently. Which means there needs to be a reservoir to store water when it is not being pumped through the system.

**Material:** Being a self sustained hydroponic system. Durable materials that can withstand extreme low temperatures, high winds, and large amounts of snow, will need to be used to build this. Due to having a fund of around $100, materials such as PVC and plastic will need to be used in the system.

**Size and Weight:** The hydroponic system is required to be built within the greenhouse itself, therefore it has to be small and lightweight. preferably less than 10kg combined together. This allows an average person to be able to set up and transport the system with ease.

**Cost:** With a maximum fund of around $100, we will need to find a cheap and reliable way to generate electricity, store water and actual structure. There will be an initial cost for electricity, because a solar panel and battery is required. Afterwards, electricity will be provided at no cost. Plastic Tubs will be used to store water, while PVC pipes will be used to build the actual structure.