Hardware Blocks

For this project we have multiple hardware components that we are going to utilize to complete and implement this project. To start we have the Basys 3 board which is the brains of the operations. Pretty much every additional circuit component and or hardware block is going to interact with the Basys 3 in some way. This is the tool that we are going to utilize to connect the hardware and software components together. The next components are the sensor components, one to detect the target and another one to follow the track by detecting the reflective tape, red tape and green tape. Each of these sensor components will have their respective additional circuit blocks. Next we have the power supply component which we have chosen the Tenergy 9.6v 2000mAh rechargeable battery due to its rechargeable nature and suitability for powering the rover. A crucial component of this project is the firing mechanism. Our initial idea is similar to an airsoft gun when it comes to the barrel but we want to try and use a gravity loaded magazine that way the plastic bbs just drop in after each shot. The primary issue that we have to flesh out with this mechanism if how we are actually going to fire it; we can do it either mechanically or electrically. As a group we need to decide which would be more ideal and realistic to implement. The main base of this project is the Rover5 chassis. This is where everything is going to go on when it is complete and also be the primary moving component since the rover is going to run the course. Lastly we have the servo motor components. There are primarily going to be used to move the firing mechanism.