Hardware Report  
Week 3  
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With considerations to the amount of components needing to be held, this week we have widened the base of our bot by using a different 3d printed plate. This will allow us to hold our battery, attach IR sensors, and make use of any further components, while still holding the camera in the same place so our code does not require changing relatively.

The initial case printed for our bot did not quite meet our needs, as we had forgotten to account for several necessary features.  
We have therefore improved the design of and reprinted the case, adding the features we require (such as a hole to turn the bot on/off on the side, and sections on the left side and front below the camera where IR sensors can be attached).  
The case will fit over the majority of our bot, keeping the wiring and pi safe from damage or accidental short circuiting – as well as giving our bot a sleek aesthetic overtone. The base will be screwed onto the bot via the new baseplate – we have added 3mm holes into the bottom of the case’s walls for this purpose.  
The tolerance of error we used for our printed case was approximately 0.05mm – as this small of a fault will not prevent the case from fitting over our components, and screws being driven through the holes will not significantly deteriorate the structural integrity of the case if a fault this small is struck.

We have also finalised a concept for our back wheel that seems to work with what we want to achieve.  
We have made use of 4 small rods screwed underneath the baseplate, with screws in the ends, to hold a marble between. This marble acts as a semi-free-rolling ball that reduces friction to an insignificant amount (and therefore the effect of the drag on our bot’s movement). The marble is approximately 2cm in diameter.

Next week we will be attaching the case to our bot, as well as working through the final stages of keeping the components inside the case while it moves.  
We will also be discussing the logistics of, and likely installing the IR sensors. This will allow the software side of our bot to progress much further, as we will require those IR sensors to make it through the maze.  
The IR sensors will be attached on the left and front sides of the bot respectively, with the forward facing sensor being held underneath the camera (without obstructing either’s field of vision).