Comp140 Assignment 2 Part A

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The main design for the controller will be a simple box. When the box is tilted (forwards, left, right or backwards), it will tilt the maze within my game (depending which direction it is tilted). The aim for the player is to tilt the maze to allow a ball to get from it's starting position to the finish. If the ball collides with a wall within the maze, a short haptic vibration will occur within the controller - notifying the player that the ball has collided. This haptic feedback will occur where the ball collided (front side, left, right and back).

Components Required:
Arduino Uno (68.6mm length × 53.4mm width)
MPU-6050 Accelerometer (21.2mm length × 16.4mm width × 3.3mm height)
Vibrating Disk Motor × 4 (3.4mm length × 10mm diameter)
HC-05 Bluetooth Module (26.9mm length × 13mm width × 2.2mm height)
9V Battery Connector
9V Battery (27mm length × 17mm width × 48mm height)
Solderless Breadboard (170mm length × 65mm width × 10mm height)
TIP120 Transistor × 4
2.2k Ohm Resistors × 4
1N4004 Diode × 4
AA × 2 Battery Holder (68mm length × 33mm width × 18.5mm height)
Jumper Wires

- As a user, I can control the pitch and roll of the maze by changing the pitch and roll on the controller.
- As a user, I want to have some sort of feedback when the ball in the maze has collided with an object.
- As a user, I want the controller to be bluetooth so that it can be wireless.