Engineering Science @ Forfar Academy | Flowcharts

Challenge #6—Garage Door

An automatic door for a garage is operated by a microcontroller. The door is opened/closed by an electric motor with 2 limit switches to detect if the door is fully open or fully closed.

The user has a remote with an 'open' button and a 'close' button.

- When the 'open' button is pushed, the motor must rotate clockwise until the 'fully open' limit switch is pressed.
- When the 'close' button is pushed, the motor must rotate anti-clockwise until the 'fully closed' limit switch is pressed.
- Once the door has opened or closed, the program should restart.

Pin Out Diagram

Input connection	Pin	Output connection
	7	Motor Clockwise
	6	Motor Anti-clockwise
	5	
	4	
'Fully Closed' Limit Switch (=1 when door is fully closed)	3	
'Fully Open' Limit Switch (=1 when door fully open)	2	
Close Button (=1 when pressed)	1	
Open Button (=1 when pressed)	0	

Stick solution here:

Marks Gained: ____

Student comments:

Teacher comments: