

CS1701

GROUP PROJECT

**ASSIGNMENT 2 SOFTWARE DESIGN AND
IMPLEMENTATION**

ROBOT TASK NUMBER 5

FOLLOW OBJECT

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Requirements specification

My code omits all of the specifications listed below;

- Finch robot follows an object
- Finch robot starts after the user places an object in front of it and finch is tapped once
- When object is not moving the finch will not move and the beak LED colour will be RED
- When the object is moving the finch will follow and finch beak colour will switch from RED to GREEN.
- When the finch is moving it omits a sound whilst moving
- Every time the object stops moving the sound being omitted stops
- The program terminates once the object is stopped and the finch is tapped twice
- Before terminating the program asks the user whether they want to see a statistical report or not.
- The program outputs statistical reports like average speed, total travel time, total stop time.
- The statistical report displayed is easy to read

Algorithm and user interface design

I believe that my code follows the algorithm design and user interface design I have created, the program follows each step of the design including the flowchart with the decisions being IF/Else statements in the program. I also believe that it follows the pseudocode pretty thoroughly and pretty much all of the statements used in steps have been incorporated into the program. One of the differences I have in the program code is for the If (**MyF.IsTapped == True && TappedCount = 2**) I listed that has (**MyF.IsTapped == True && MyF.IsTapped == True**) since when I tried the TappedCount I didn't really have an idea on how to store user input and make it into a variable being constantly updated so I just added in MyF.IsTapped twice meaning of it is tapped twice follow the code below.

Also, what else is different is that I created variables **VelocityLeft** and **VelocityRight** representing integers being 255 each so it can be used as if object is being detected on the left sensor VelocityRight meaning the right wheel would have a speed of 255. In my design, I set it as (**MyF.SetWheelVelocities 255, 255;**), when I gave that a go for some reason my finch wouldn't move however when I created and stored those values in integers it moved and it visually tells you what the value 255 means.

Testing

Class Name: FollowObject
Title/Description: Testing the Finch robot

Action	Expected output	Actual output	Pass/Fail	Reason for failure
Finch following object (forward movement)	I expect it to follow the object with a forward movement	The finch did follow the object with a forward movement	Pass	N/A
Finch following object (left movement)	I expect it to follow the object with a left movement	The finch did follow the object with a left movement	Pass	N/A
Finch following object (right movement)	I expect it to follow the object with a right movement	The finch did follow the object with a right movement	Pass	N/A
Buzz sounds	I'm hoping for the buzz sounds to work and to work continuously throughout its movement	It worked, the buzzing was continuous as long as it was moving	Pass	N/A
LED RED	I expect the LED colour to be RED whilst it's not moving.	The LED colour is indeed red whilst it's not moving.	Pass	N/A
LED GREEN	I'm hoping that the LED colour is Green whilst its moving.	The LED colour is Green whilst it is moving.		

Buzzing and LED Green at the same time	Expecting there to be buzzing sounds whilst the LED colour is green continuously whilst moving.	The finch is moving and the buzzing sounds are working as well as the LED colour is continuously green.	Pass	N/A
Statistical report option being displayed after being tapped twice	I'm hoping that the scanner option displays after the finch is tapped twice whilst not moving.	The scanner option is displayed and asks the user for a report output	Pass	N/A
Average Speed	I expect it to display the average speed of that program being ran for that time period	The program did display the average speed and it displayed it correctly	Pass	N/A
Total Travel Time	The program should display for how long it's been traveling for in micro seconds.	The program did display the total travel time correctly in the correct output.	Pass	N/A
Total stop time	The program should display the total stop time but I don't expect the numbers to be correct or accurate.	The program displayed the total stop time correctly and it was accurate!	Pass	N/A

