P2 Code Review Document

Introduction

This code review is for the Wallaby, Little Guy Jr. This robot will focus on collecting food supplies and medical supplies, and if possible water poms, using the claw mechanism. All items will be deposited into the scoring zone. The code for Little Guy Jr was written by Essraa and Ahmed, and the review is being done by Sofiia (Building the Wallaby) and Essraa. The review was conducted on 16 January 2019.

Best Practices Checklist

	Best Practise statement	**Yes/No**
1	Code must be commented, especially functions:	Yes
a	Comments document the *purpose* of the function;	Yes
b	Comments document the *arguments* for each function;	No
c	Comments document the *return value* for each function.	No
2	Functions are clearly identified.	Yes
3	All variable names in code review are descriptive and covey use.	Yes
4	All numeric constants are named 0, 1 or 2.	No
5	Code shows flow of control.	Yes

6	No blocks of old code in comments	Yes

Our code has several *integers* to make it easier for everyone to understand the code instead of many numbers; also we added a lot of comments explaining the job of the lines, thus making it easier to understand. (The comments do not yet address clearly the arguments for each function or the values.)

General Code Analysis

Reliability

The code that has been written is just as an outline, measurements are not accurate but may still give us an outcome. We also checked our code by allowing different members of the team to re-read it and giving us feedback on how efficient it is. (It still needs to be checked on the gameboard with the other robot (Roomba) to ensure they can stay out of each other's way.)

This code is acceptable as an outline, although we would prefer to make it as accurate as possible by taking more accurate measurements on the game board with a tape measure. We will retest the code after each change to increase the chances of success. (After alterations, the code will be reliable as it moves the robot forward, makes it turn to push the collectibles, then it turns and comes back.)

Maintainability

Essraa wrote the code but made sure other members (Sofiia, Yayah) read the code and made sure it is easy for them to understand it. We added a lot of comments to explain what each group of lines is meant to execute in order to simplify the understanding of the code while making error detection easier and more organized.

This code is not far from being reliable, although we can increase effectiveness by timing each run of the robot to fit in the allotted time frame. We are currently trying to find an online website to work on the code anywhere, anytime.

Effectiveness

Theoretically, our code currently appears to perform its task. We do kind of struggle to finish some tasks effectively especially with the servo on the arm and the touch sensor so will focus our efforts on that part of the code next. Essraa learned programming skills to add variables, use loops and make the code simple to understand. The code will be further refined using a While-loop to reduce repeated code and we will add code to record exactly how far the robot needs to go.

The following example shows our code;

```
/*Collect supplies function by Essraa 17 January 2019
 ----------------------------------------------------
 This code is written to direct the robot to collect
 the supplies. First it will Turn and exit the star-
 ing box, then it will turn and move towards the
 supplies then turns and moves in a straight line
 collecting the supplies. When finished it will turn
 and return to the starting box.*/

 int main() //This is the main function and start of the program
 {
     int right = 0; //variables to identify the left and right motor values
     int left = 3;
         motor(right,0); //To turn right
         motor(left,90);
         msleep(1000);
         motor(right,100); //To exit the starting box
         motor(left,100);
         msleep(2500);
         motor(right,90); //To turn left
         motor(left,0);
         msleep(1000);
         motor(right,100); //This is for the wallaby to go forward
         motor(left,100);
         msleep(4000);
         motor(right,90); //This is for the wallaby to turn left
         motor(left,0);
         msleep(1000);
         motor(right,100); //This line is for the bot to collect the material—how??
         motor(left,100);
         msleep(6000);
         motor(right,90); //To turn left
         motor(left,0);
         msleep(1000);
         motor(right,100); //To go back
         motor(left,100);
         msleep(4000);
         motor(right,90); //To turn left
         motor(left,0);
         msleep(1000);
         motor(right,100); //To return to the start box
         motor(left,100);
         msleep(5000);
     int backwards = 2000;
     cmpc(0); //clear_motor_position_counter

while (gmpc (0) < backwards) //get_motor_position_counter
{ //For the while command
         motor (right, -15);
         motor (left, 0);
         msleep (1500);
         motor (right, 0);
         motor (left, -15);
         msleep (1500);
}
             printf ("Collected"); //This tells us that the robot finished its job
ao();
return 0;
} //to finish code overall
```