Sprint 2 - Accuracy Design Document

October XX, 2019

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1. Executive Summary

1.1 Project Overview

This Project was made as a computer science project by Jenna Esposito (manager), Therese Racancoj (editor) and Anthony Pastorelli (Chart Maintenance). The purpose of the project is to test the robot and see if it will follow the commands we program into it, which is to follow the blue tape that has been on ground in the shape of a figure eight.

1.2 Purpose and Scope of this Specification

In scope

- **Figer 8 courses**

Out of Scope

- **Other courses**

2. Product/Service Description

2.1 Product Context

This is one of three parts of the Robotics Triathlon

2.2 User Characteristics

- **Team members**

2.3 Assumptions

The class room was assumed to be available when team members needed it

Team members were assumed to have similar schedules

This project was expected to take less time than the first one

2.4 Constraints

- **The tile in class room 208 is uneven**
- **The tape does not always stay down**
- **Teammates have conflicting schedules**
- **Class room 208 is not always available**

- **The two circles are not the same size**

2.5 Dependencies

- **This program must be run in class room 208**
- **Requirements must be finished before the coding process can begin**
- **Must be placed on the blue tape figure 8**

3. Requirements

- **Robot must travel along the figure 8 course the robot must travel along the figure 8 course**
- **Robot must go around the course 5 times the robot must travel along the figure 8 course 5 times**
- **Robot must say "I am the winner" when the code is run it should say I am the winner**
- **Flash multicolored lights for 5 seconds at the end the robot must change different colors for 5 seconds at the end**
- **Robot must start in the center the robot must be placed in the center of the two circles**
- **Robot must end in the center the robot must stop at the center of the two circles**

- **Functional Requirements**

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
ACCURACY_1	Robot must travel along the figure 8 course		Priority 1	11/16	11/17
ACCURACY_2	Robot must go around the course 5 times		Priority 1	11/16	11/17
ACCURACY_3	Robot must say "I am the winner"		Priority 2	11/16	11/17
ACCURACY_4	Flash multicolored lights for 5 seconds at the end		Priority 2	11/16	11/17
ACCURACY_5	Robot must start in the center		Priority 1	11/16	11/17
ACCURACY_6	Robot must end in the center		Priority 1	11/16	11/17

3.1 Security

3.1.1 Protection

NA

3.1.2 Authorization and Authentication

NA

3.2 Portability

- **Testing was limited to class room 208**
- **Recording the video can only be done in class room 208**
- **Code can be done any where**

4. Requirements Confirmation/Stakeholder sign-off

Meeting Date	Attendees (name and role)	Comments
11/17/21	**Anthony Pastorelli (Chart Maintenance), Jenna Esposito (manager), Therese Racancoj (editor)**	**All requirements approved**

5. System Design

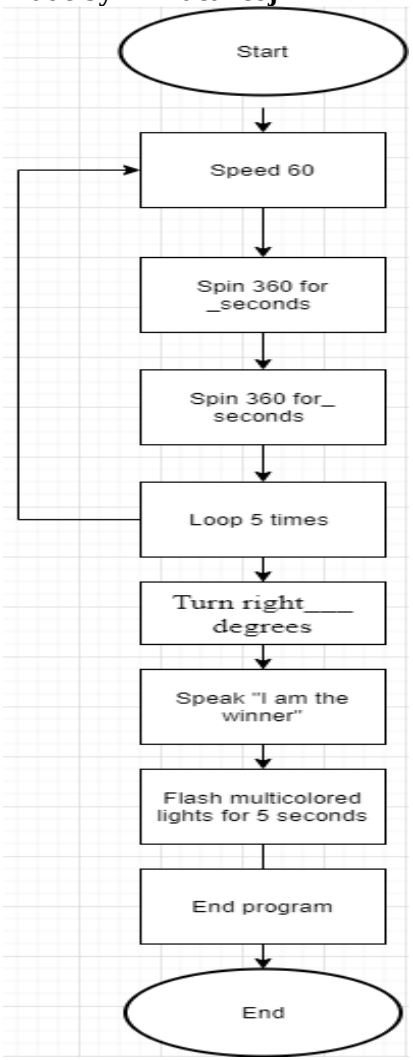
5.1 Algorithm

Sprint: Accuracy
made by: Jenna
1. Speed 60
2. Spin -360 for ___ seconds
3. Spin 360 for ____ seconds
4. Loop 5 times
5. Speak “I am the winner”

6. Flash multicolored lights for 5 seconds
7. End program

5.2 System Flow chart

Made by Ez Racancoj



5.3 Software

sphero.edu app

5.4 Hardware

Phone, computer and robot

5.5 Test Plan

Reason for Test Case	Test Date	Expected Output	Observed Output	Staff Name	Pass/Fail
Starting code	**11/12**	**To make a circle**	**Completed a small circle**	**Anthony**	**Pass**
Trying to figure out the right code to make a figure 8	**11/12**	**To complete figure 8**	**Completed figure 8**	**Anthony**	**Pass**
Fix circle size	**11/12**	**Make circle the right size**	**Still small**	**Anthony**	**Pass**
Fix circle size	**11/16**	**Make circle the right size**	**Finally, the right size**	**Anthony**	**Fail**
To get the right timing	**11/16**	**Complete the figure 8**	**All the times seems to be good**	**Anthony**	**Pass**
To complete the figure 8	**11/17**	**Complete the figure 8**	**Finally done!**	**Anthony**	**Pass**

5.6 Task List/Gantt Chart

Made by Anthony Pastorelli

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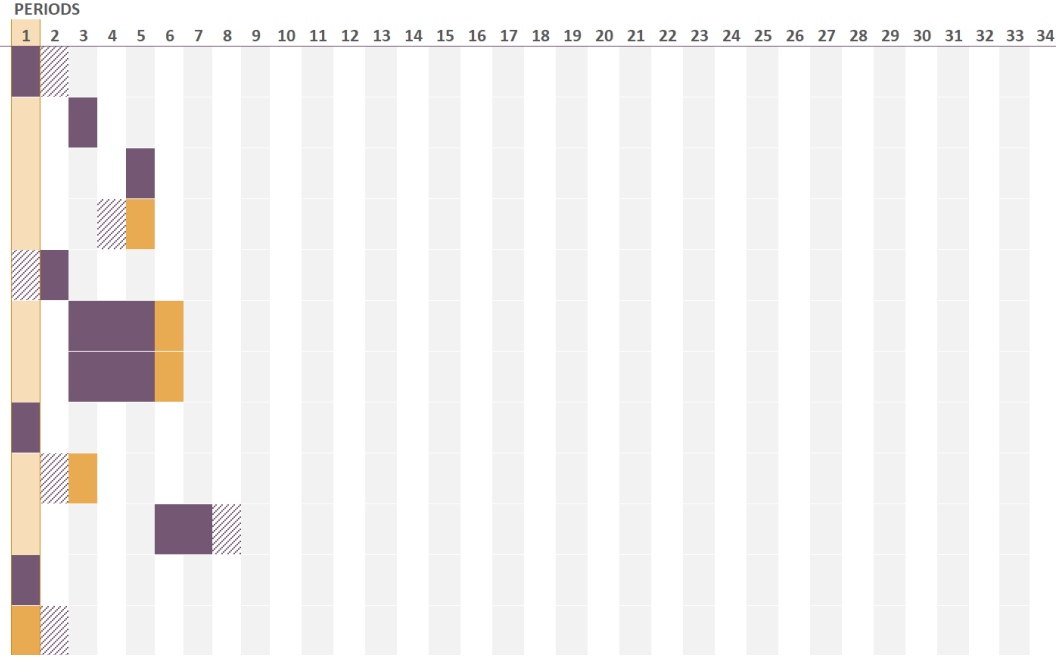
Select a period to highlight at right. A legend describing the charting follows.

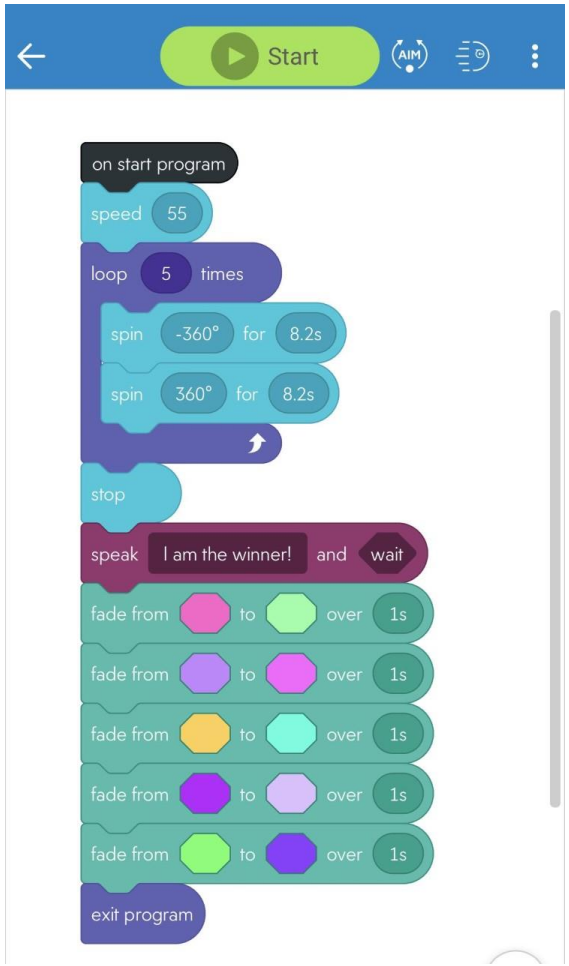
Period Highlight: 1 | Plan Duration | Actual Start | % Complete | Actual (beyond plan) | % Complete (beyond plan

ACTIVITY	STAFF MEMBER(S)	PLAN START (Hours)	PLAN DURATION (Hours)	ACTUAL START (Hours)	ACTUAL DURATION (Hours)	PERCENT COMPLETE
Develop a plan (Gantt chart)	Anthony	1	2	1	1	100%
requirments table	Ez	3	1	3	1	100%
requirments sign-off	All team members	5	1	5	1	100%
algorithm	Jenna	4	1	5	1	100%
flowchart	Ez	1	2	2	1	100%
block code	Jenna	3	3	3	4	100%
sensor data diagram	Jenna	3	3	3	4	100%
test table	Anthony	1	1	1	1	100%
staffing plan	Jenna	2	1	3	1	100%
System design document	Ez	6	3	6	2	100%
robot video	Anthony	1	1	1	1	100%
github repository	Jenna	2	1	1	1	100%



5.7 Block code

made by: Jenna



5.8 Staffing Plan

Name	Role	Responsibility	Reports To
Jenna Esposito	**Manager**	**Team management, organize staffing plan and deadlines, write algorithm, work with block code, and manage GitHub repository**	**Team**
Ez Racancoj	**editor**	**Editing and finalizing and filling out the doc fill out requirements table, create flowchart**	**Jenna Esposito**
Anthony Pastorelli	**Chart Maintenance**	**Maintain requirements sign-off, test table, and Gantt chart and record robot video**	**Jenna Esposito**