Sprint 1 - Endurance Design Document

October 29, 2019

Use this Requirements Specification template to document the requirements for your product or service, including priority and approval (Must do).

This document will also serve as a System Design Document (How to) and will include sections detailing system flow, algorithms, staffing plan, software/hardware, and Test Plan

This document contains instructions and examples which are for the benefit of the person writing the document and should be removed before the document is finalized.

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# Executive Summary

## Project Overview

We will make a robot complete a full lap around the room, while changing colors at each 90 degree turns.

## Purpose and Scope of this Specification

The purpose of the project is to complete the robotics triathlon and display our grasp on basic programming.

# Product/Service Description

## Product Context

This is a self-contained project that isn’t affected by other projects

## User Characteristics

## Assumptions

We have to use the sphero app to program the robot

## Constraints

The robot we are using is very simple which limits what we can do with it

## Dependencies

# Requirements

| Req# | Requirement | Comments | Priority | Date Rvwd | SME Reviewed / Approved |
| --- | --- | --- | --- | --- | --- |
| ENDUR\_01 | Complete a full lap around the room |  | High | 08/22 | 08/22 |
| ENDUR\_02 | Do not hit any objects |  | High | 08/22 | 08/22 |
| ENDUR\_03 | Changes Color |  | Moderate | 08/22 | 08/22 |
| ENDUR\_04 | Says ready set go |  | Moderate | 08/22 | 08/22 |
| ENDUR\_05 | Talks when finished and start |  | Low | 08/22 | 08/22 |

## Security

n/a

### Protection

n/a

### Authorization and Authentication

n/a

## Portability

n/a

# Requirements Confirmation/Stakeholder sign-off

Include documentation of the approval or confirmation of the requirements here. For example:

|  |  |  |
| --- | --- | --- |
| Meeting Date | Attendees (name and role) | Comments |
| 10/28/2019 | Christian, Awn, Jaden | confirmed all |

# System Design

This section will provide all details concerning the technical design, staffing, coding, and testing the system

## Algorithm

The robot will go straight then turn right, change color, and repeat the process until it has completed the course

## System Flow

https://docs.google.com/document/d/1OFgj-Tmk7qxU29Ta61lSdFMj2XqRlOPZ8qDiOYRQLwc/edit?usp=sharing

## Software

Program was written using Javascript on the sphero edu app

## Hardware

The hardware that we used were both the sphero robot as well as a computer

## Test Plan

| **Reason for Test Case** | **Test Date** | **Expected Output** | **Observed Output** | **Staff Name** | **Pass/Fail** |
| --- | --- | --- | --- | --- | --- |
| Goes straight and correct distances | 10/29 | Goes straight and correct distances | Goes straight and correct distances | Christian | pass |
| Turns properly | 10/29 | Turns a full 90 degrees | Turns a full 90 degrees | Jaden | pass |
| Lights work properly | 10/29 | Changes to correct colors | Changes to correct colors | Jaden | pass |
| Speaks at appropriate time | 10/29 | Speaks at appropriate time | Speaks at appropriate time | Christian | pass |

## Task List/Gantt Chart

https://live365monmouth-my.sharepoint.com/:x:/g/personal/s1287151\_monmouth\_edu/EUf0D0\_NHKZEqC9v6uH3ouIB95eNYlH7uDRaDSFP69l0gw?e=s5Qglp

## Staffing Plan

Insert a chart/table that depicts the roles and responsibilities of each team member that worked on this project

| Name | Role | Responsibility | Reports To |
| --- | --- | --- | --- |
| Christian Ramos | Programmer, Tester | Write code, test robot |  |
| Awn Rizvi | Documentator | Track and record progress |  |
| Jaden Rodriguez | Project Manager, Tester | Keeps project on track |  |