# Individual Progress Report

# <Insert Milestone Name here>

## Project Details

**INSTRUCTIONS: Each member of your team needs to individually complete the following form reporting on the progress of his/her/ze component of the design. Please remove all highlighted text and examples before submission.**

|  |  |
| --- | --- |
| Project name | <Insert title of project> |
| Group Number | <Insert Group Number> |
| Author, discipline | <Insert author name followed by discipline. Example: Joe Smith, ME> |
| Reporting period | <Insert the time period covered by the report, e.g. January – June 2017> |
| Date Due | <Insert date> |

## Summary

**INSTRUCTIONS: In 1-2 paragraphs, summaries the progress you made during the reporting period, your primary results, and design recommendations to be shared with your peers and stakeholders. If needed, include tables, diagrams, or other figures to clarify progress.**

<Insert text here>

## Activities

**INSTRUCTIONS: Complete the following table for each activity you have completed in the project (see example below). Describe your progress with the activity and the outputs generated. Choose a status for each activity (achieved, in progress, challenges, or not started).**

### *EXAMPLE: Electrical Stepper Motor Functionality Test*

|  |  |
| --- | --- |
| Status | Achieved |
| Objective | After demonstrating previously that the Arduino Uno can effectively control two 28BYJ-48 stepper motors, I am now exploring more efficient coding options and wiring options using a stepper driver board. |
| My time on this task | 2 hours |
| Support team member(s) time on task | N/A |
| Visual Progress Update | https://attachment.outlook.office.net/owa/bigwallbrad@hotmail.com/service.svc/s/GetFileAttachment?id=AQMkADAwATE2ZjMxLTNkN2EtZjg1Ni0wMAItMDAKAEYAAANWzVu97jHxRIopK0Mb4VumBwDkNqZ36pnvRIskvDKlZ2u0AAACAQkAAADkNqZ36pnvRIskvDKlZ2u0AAGpQlGGAAAAARIAEAAi%2BT5p8EAtR40%2Fqszkv04Z&X-OWA-CANARY=rPx2kwYqUkGfhMYTcpuJsHD--bNI49QYuPmaFdz_MlbPBd3dZ-8Iif-Tf0Dbfm_tMlnhtpsSXGc.&token=eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiIsIng1dCI6ImVuaDlCSnJWUFU1aWpWMXFqWmpWLWZMMmJjbyJ9..GmUwDom6_5UTEQgckhRUtT3wHVPJojqtaS-rC5mGuXFqioKhP7pwo3L-0vz3tmWHjEV4Kz9alha6uZlSKDProSzeVikYR3PBk4Dtj_Ogl2dtb3-bhXP5Py4mAX925V9b-7uDByZf3edVgCPTkwtAVMkj4egwcJR8Lx557phDcofLAkKmzdbJSegzdHMdeI7QxXFp1ZJCCiU8YDCTOP6il2VzfXFwSFtwyBI4Df0pxdkYPu_-ox6B1uG1d9qqpcVTU4QoB5Gt1iSameKcDtk5c8GVtpKkqtPIeF7nyppNAG8e2We5852OuA-FsgyUJWsvtsvAbB1ylI2ZxQpxhkmFdg&owa=outlook.live.com&isc=1&isImagePreview=True  In the previous milestone (left), I simply wired the stepper motor directly to the arduino. While this worked, it required too many pins. For the current milestone, I am using two stepper motor driver boards soldered directly to the Arduino Nano. Below I test various methods for driving the motor and demonstrate wiring for an external power supply. |
| Current Progress | Functional analysis indicated it was necessary to propel the vehicle (see functional diagram) and initial calculations indicate a motor with x ft\*lb of torque is required. I am testing the 28BYJ-48 stepper motor. Initial research indicates stepper motors can be driven via 3 modes: wave drive (maximum precision and less torque), full step (maximum torque and minimum power need), and half step (combines wave and full step method). Initial efforts to control the stepper motor via Arduino found limited success and required extensive coding. Further research revealed a UN2003 driver board and accelstepper library, which greatly speed progress by providing easy commands. It was observed each stepper motor requires at least 4 pins from the Arduino board and the motor must be powered separately using 5-12 V. External power must share a common ground with Arduino. Observation of gear indicates adequate torque but extremely low speed. Future work includes considering additional gearing needs. Note internal gear of stepper motor is 1:65. |
| Outputs created | Sketch of wiring diagram necessary to drive stepper motor (note I use a Arduino Nano in my design).    Syntax for code library found at: link  Two useful tutorials found at: link 1 and link 2 |
| System Integration Considerations | It is important that any electrical components I select interface effectively with the mechanical body. Currently, at the end of Prototype 1, we have narrowed the selection of electrical components to those indicated in the section above. I have provided Sarah (the ME) with part diagrams indicating size and likely layout of parts. We discussed possible construction methods for Prototype 2’s mechanical body that would allow for flexibility in component layout and settled on creating an electrical box 2” x 2” x 1”with screw holes in the bottom. As long as I can fit my electronics in this space, Sarah can integrate it into the mechanical design. |
| Challenges/Lessons learned | It is important that any electrical components I select interface effectively with the mechanical body. Currently, at the end of Prototype 1, we have narrowed the selection of electrical components to those indicated in the section above. I have provided Sarah (the ME) with part diagrams indicating size and likely layout of parts. We discussed possible construction methods for Prototype 2’s mechanical body that would allow for flexibility in component layout and settled on creating an electrical box 2” x 2” x 1”with screw holes in the bottom. As long as I can fit my electronics in this space, Sarah can integrate it into the mechanical design. |

### <Activity 1>

|  |  |
| --- | --- |
| Status | Achieved In progress Challenges Not started |
| Objective | <Insert the objective of the activity> |
| My time on this task | <Insert duration in hours> |
| Support team member(s) time on task | <Insert names of support team members and duration in hours> |
| Visual Progress Update | <Provide side-by-side visual evidence of your progress from the previous milestone if applicable.> |
| Current Progress | <Describe your progress with the activity in 1 paragraph> |
| Outputs created | <List the outputs that have been created from the activity> |
| System Integration Considerations | <Describe any system integration issues/considerations/concerns raised by this activity> |
| Challenges/Lessons learned | <Describe any challenges/lessons learned here> |

### <Activity 2>

|  |  |
| --- | --- |
| Status | Achieved In progress Challenges Not started |
| Objective | <Insert the objective of the activity> |
| My time on this task | <Insert duration in hours> |
| Support team member(s) time on task | <Insert names of support team members and duration in hours> |
| Visual Progress Update | <Provide side-by-side visual evidence of your progress from the previous milestone if applicable.> |
| Current Progress | <Describe your progress with the activity in 1 paragraph> |
| Outputs created | <List the outputs that have been created from the activity> |
| System Integration Considerations | <Describe any system integration issues/considerations/concerns raised by this activity> |
| Challenges/Lessons learned | <Describe any challenges/lessons learned here> |

### <Activity 3>

|  |  |
| --- | --- |
| Status | Achieved In progress Challenges Not started |
| Objective | <Insert the objective of the activity> |
| My time on this task | <Insert duration in hours> |
| Support team member(s) time on task | <Insert names of support team members and duration in hours> |
| Visual Progress Update | <Provide side-by-side visual evidence of your progress from the previous milestone if applicable.> |
| Current Progress | <Describe your progress with the activity in 1 paragraph> |
| Outputs created | <List the outputs that have been created from the activity> |
| System Integration Considerations | <Describe any system integration issues/considerations/concerns raised by this activity> |
| Challenges/Lessons learned | <Describe any challenges/lessons learned here> |

### <Activity 4>

|  |  |
| --- | --- |
| Status | Achieved In progress Challenges Not started |
| Objective | <Insert the objective of the activity> |
| My time on this task | <Insert duration in hours> |
| Support team member(s) time on task | <Insert names of support team members and duration in hours> |
| Visual Progress Update | <Provide side-by-side visual evidence of your progress from the previous milestone if applicable.> |
| Progress | <Describe your progress with the activity in 1 paragraph> |
| Outputs created | <List the outputs that have been created from the activity> |
| System Integration Considerations | <Describe any system integration issues/considerations/concerns raised by this activity> |
| Challenges/Lessons learned | <Describe any challenges/lessons learned here> |

## Total Time On Task for this Milestone

|  |  |
| --- | --- |
| Total time spent by me | <sum of all “my time on task” hours> |
| Total time spent by support team members | <sum of all “support team member(s) time on task”> |

## Next Steps

**INSTRUCTIONS: In paragraph form, summaries next steps for your part of the design project.**

<Insert text here>

## Archived Activities

**INSTRUCTIONS: Use this space to archive completed activities. Cut and paste the entire activity table that is complete. If something is still in progress, keep in the above sections.**