**Meeting Minutes – Spring 2015**

Documentation of formal meetings and advisor meetings: Formal meetings to discuss progress were held weekly on Sundays (usually), project work was broken up into small groups that worked throughout the week (not documented because I wasn’t always there).

**JANUARY**

**Thursday, 1/8 4:30 – 5 pm Group Meeting**

-Brief first meeting of the semester  
-Discussion of schedules, possible times to meet up and to meet advisors  
-Brief discussion of work over break, to be discussed further later  
-A lot of schedules not finalized, finalized schedules to be put in groupme ASAP  
-Official first meeting to be held Sunday morning, 1/11

**Sunday 1/11 9 -10:30 am Group Meeting**

-Meetings with Dr. Harvey will be every other Wednesday 1-2pm, meetings with Dr. Frank scheduled for Tuesdays 2-3pm, however this might be a conflict  
-Videos of basic arm movement from Louis over break  
-Need to find supports to hold the second level of the chassis  
-Need to order jumper wire cables, reflectance sensors, and a stronger servo for the main arm   
-Current expenses are around 400$  
-First presentation scheduled for 2/13  
-Need new caster wheel, probably ball caster  
 **Wednesday 1/14 – 1-2 pm Meeting with Dr. Harvey  
-**Discussion of current status  
-Discussion of last milestone presentation – a lot of improvement since the one prior to that  
-Discussion of the next milestone – detailed design review, what kind of things need to be in the paper and presentation  
-Clarification about internal competition date (syllabus said it was 2/25, should be closer to the end of March or early April)

**Sunday 1/18 10 am – 12 pm Group Meeting/Work**-Goals for the next two weeks:  
 -Continue working on Line Following (Evan)  
 -Test coding so far (Ivan and Evan)  
 -Work on Etch-A-Sketch(Louis)  
 -System integration: continue mounting things to the new chassis  
 -Order Microphone for Simon  
 -Work on Frequency detection (Chelsea)  
-Discussion of Milestone 4 Testing plans  
 -Line Following  
 -Drive system on new chassis  
 -Sound Detection

-Arm movement  
 -Arm gripping  
-Try to meet with Debrunner Tuesday the 22nd at 10 am  
-Need to solder new driver shield connections  
-Code running for line following on Due

**Tuesday 1/20 – 2 -2:30 pm Meeting with Dr.Frank (Chelsea unable to attend due to class)**

**-**Asked about Milestone 4 outlines  
-M4 outlines will be uploaded  
-Asked about internal competition – date is wrong on syllabus, not sure of actual date  
-Updated on current status of robot  
 -Currently working on integration  
 -new chassis  
 -debugging line following  
 -etc

**Thursday 1/22 – 10 am (brief meeting) with Dr. Debrunner  
  
-**Dr. Debrunner said we finished on a good note last semester, would like to see us continue the momentum  
- In the future we can just stop by his office hours for questions - no need for official meetings

**Friday 1/23 – Group work/meeting 11-12  
-**Discussion of placement of components on chassis  
-New caster wheel came in, need to make sure everything fits as planned  
-Caster should be fine, might need to have some plastic between it and the chassis to make it high enough and level out the chassis  
-began mounting  
  
**Sunday 1/25 Group Meeting/Work – 10 – 12 am**-Discussion of goals set last Sunday  
-Chassis integration in progress  
-Line following did not work as anticipated, Chelsea looking at header files, trying to figure out what we need to do to make the libraries suit our needs  
-Microphone came in, work to start on sound detection soon  
-Discussion of Milestone 4 report and presentation  
-Presentation to be held on 2/11 at 12:30 pm (if time works with reviewers)  
-Changed meeting times with Dr. Frank to 12:15 on Mondays  
-Example testing forms format on the google drive, everyone needs to make test plans for the system they are leading (Lorenzo – power, Ivan – MCU/chassis stuff, Louis – Arms, Evan – Sensors, Chelsea – Microphone, early line following/drive system)  
**Tuesday 1/27 Brief Group Meeting via Google hangouts – 9 pm**   
-Discussion of current status of chassis and line following  
-Discussion of current status of testing plans  
-Chassis really needs to be finalized so that testing may be done properly  
-Sorting out of scheduling – discussion of when milestone presentation will be   
-Discussion of any potential questions we may have for Dr. Harvey

**Wednesday 1/28 Meeting with Dr. Harvey 1 pm – 2pm**

-Update on progress – discussed current status of chassis construction (first layer good, need to mount the second layer, discussed current line following and arm progress  
-Helped with soldering LEDs for test track  
 -Soldering tips from Dr. Harvey  
-For testing plans, the test category should have some sort of Test ID/numbering scheme  
-Add steps to replicate test plan  
-Treat test plans like a mini-lab report  
-Available until 4 on Wednesday for presentation, also on Thursday

**FEBRUARY  
  
Sunday 2/1 – 10 am – 11 am**-Presentation will be on 2/12 at 2 pm  
-Discussion of Milestone 4 draft – official draft on drive, everyone should start editing  
-Look through Dr. Harvey’s comments, make sure we don’t make the same mistakes   
-Everyone submitted individual test forms to the google drive to be added to the draft  
-Everyone will update their corresponding sections in the milestone, Chelsea will finalize the formatting of the draft once everyone has finished editing.   
-Microphone delivered, Chelsea start focusing on Simon Says  
- Evan and Ivan on line following, Louis on arms, everyone on Chassis  
-Discussion of top layer of chassis – sketch is ready so it can be cut out, pillar positions plotted  
  
**Tuesday 2/3 - Meeting with Dr. Frank  
-**Confusion about official meeting times, everyone forgot we changed it to Monday  
-Meetings OFFICIALLY on Mondays  
-Milestone 4 is due Thursday at 3:30 pm, but may get pushed back to Friday  
-Presentation time for next week is officially reserved.

**Thursday 2/5 – 3 – 4 pm Group Meeting, another after 8 pm**-Milestone 4 Discussion  
 -Add 9V battery to design  
 -Add analysis for Maestro Servo Controller and it to appropriate section  
 -Make sure risk assessment is according to rubric  
 -Add in updated 3D renders  
 -Louis to add pictures of Servos and such  
-Chassis gripper mounted on chassis  
-EaS arms too high, need to be lowered  
-Pillars to hold second layer officially added to first  
-Should cut 1-2 inches off front of chassis  
-Chelsea & Louis on final formatting of M4

**Sunday 2/8 9:30 am – 10:30 am Group Meeting (group work later in the day)**-Ivan and Lorenzo to finish constructing chassis later today – adding the second layer on top of the new pillars, cutting off appropriate amount  
-Need to move the wheels up a little bit (both caster and motored wheels) to compensate for chassis changes  
-Update on status of arms – Etch-A-Sketch arms still need work, chassis gripper looking good  
-Main arm can’t properly be tested until chassis complete  
-Line following can’t properly be tested until chassis complete  
-… so we need to complete the chassis.  
-Chelsea continuing to explore FFT and FHT solutions for Simon, internet mostly has assembly code examples which are just super  
-Everyone needs to update their powerpoint slides for the presentation and upload them, need to go over them as a group before the presentation

**Wednesday 2/11 1-2 pm Meeting with Dr. Harvey**

-Updated Dr. Harvey on current design choices  
 -Discussion of new chassis with wheel placement  
 -Arm placement/function  
- For the presentation show our progress – update risks  
- Also, outline the subsections of the testing plans, and show one good example of a testing plan  
-Add videos to end of presentation to more easily show progress  
-Address problems in presentation, explain plans to fix them   
-As of right now, the robot should be mostly assembled, we should be working on the more complex details of our design, we should be software focused, and we should have a list of priorities  
**-The internal competition will be held March 20th at 10 am**   
 - 3 runs per team, winner determined based on total points

**Friday 2/13 8-9 pm Group Meeting**-Milestone 5 is in two weeks, oh cool.  
-Need to come up with a plan for what we plan to demonstrate hardware and software wise  
-We should include  
 - definitely follow a line to a game zone  
 -play a game (rubik’s or playing card or both)  
 -detect start LED  
 -make sure batteries mounted  
 -need to be able to control servos with Due not Uno  
-Need to order F/M wires

**Monday 2/16 Meeting with Dr. Debrunner (Ivan & Chelsea)**-Meeting was about Simon Says  
-Should not do the method we were working on  
-Should do a smaller sampling rate  
-1 filter per button, 1 control  
-Calculate energy of filter outputs & compare  
-Control filter should help with noise

**Sunday 2/22 10:30 am – 1:30 pm Group Meeting & Work**-M5 Demo will be on Wednesday at 1 pm  
-Power budget has been updated and placed in the M5 folder, everyone fill in what they can  
-All arms mounted to chassis  
-Chassis gripper holds EaS  
-Decided to get new driver shield  
-New shield has higher current to take care of stall current issue, old driver shield shorted  
-Can’t show line following for hardware demo without driver shield and new one won’t be there in time  
-Testing for hardware demo  
-Implementation of Dr. Debrunner’s idea for Simon not working out – need to talk to him again  
  
**Tuesday 2/24 10 pm – Testing for HW/SW demo**-Code working for entire course  
-Skipping EaS and Simon Says  
-Will just have to use the white line on a black box method to show them the code responding to the line following sensors since the motors can’t run right now

**MARCH**

**Sunday 3/1 10 am – 11 am Group Meeting (Chelsea out of town, will be updated)**

-Discussion of week’s progress

**-**New batteries work with servos  
**-**New idea for EaS - turn HDPE cutouts sideways so the servos are lower  
-Logic shifter for servos to be delivered next week so we can use the Due with them  
-New driver shield works fine with the motors & Arduino, chassis is up and running  
-Simon code is compiled, needs testing  
-Motors respond as desired to T-shaped lines

**Monday 3/2 1 – 1:15 pm Meeting with Dr. Frank (Chelsea still out of town, updated)**-Discussion of current progress on robot, and internal competition  
-Discussion of M5 performance  
-No m4/m5 grades up yet, expect them after spring break

**Wednesday 3/4 – 1-2 pm Meeting with Dr. Harvey**-Discussion of M5 performance – everything seems to be coming together  
-Rule changes? Asked about current rule changes, as on the SECon facebook page it said lines could be 2” away from the edge and cross-shaped intersections are allowed  
-2” thing was taken down  
-Focus on the track we have now  
-Wants to discuss filters

-Discussion of internal competition

-Still 3 rounds, there will be a test run  
-We can have test runs in between rounds  
-Will be out in the atrium

**Sunday 3/8 – 9 – 10 am Group Meeting (group work throughout the day)**

-No one showed up on time because of the time change except for me.   
-Discussed stuff later  
-Everyone to work on individual subsystems during spring break  
-Robot navigated first half of the course, successfully saw rubik’s cube and played it  
-Going to add more cases to the line following, definitely should work on Harvey’s track  
- Need to focus on line following and Simon  
-EaS also needs to be smoothed out, Louis to work on that during Spring break  
-Evan to work on smoothing out line following  
-Chelsea to work on Simon

**~~~~ Spring Break ~~~~**

**Saturday 3/14 – 11 am - Group Meeting**-Discussion of progress  
-Arms can currently play EaS, Rubik’s cube, and Playing Card. It can press the button on Simon, need to integrate code in  
-Simon filters are done and mostly functional, Chelsea needs help with integration  
- Competition is in a week, need to make sure we can do everything consistently  
-Simon is dying…. Need new batteries  
- Some last minute changes need to be made  
-Mostly need to work on consistently following track   
-Team worked on test runs throughout the day

**Monday 3/16 – Meeting with Dr. Frank for like 5 minutes**-We weren’t actually supposed to meet this week, spring break threw everyone off  
-Discussion of internal competition  
-Told him we’re almost ready  
-Etc

***Later that day… several hours of testing very late at night***- Occasionally misses turns on the track, need to make sure this doesn’t happen  
-Need to work on aligning the robot for EaS  
-EaS not really working due to alignment  
-Hits center button of Simon, code not integrated because Simon died and apparently none are for sale anywhere  
-Rubik’s & playing card best games  
-need to work on finish line

**Tuesday 3/17 5 pm - ??? sometime very late Group Meeting/Work  
-**Test runs, test runs, test runs  
-Basically running, recording what went wrong on the run on a whiteboard, tweaking, running again  
-… for hours  
-Game alignment and missing turns worst problems  
-Can’t do Simon if you don’t have a working Simon….  
  
**Wednesday 3/18 Meeting with Dr. Harvey**- I actually missed this meeting so I have no notes for it, except for what I heard at the end  
- General structure of competition discussed  
-If we were to win they’d have to get me a separate hotel room because I’m a girl  
-Told him which parts of the system were most unreliable  
-Asked that we help to set up   
-Etc

***Later that evening…***- MORE TESTING.   
-Test run, tweak. Repeat.   
  
**Thursday 3/19 7 pm – Friday 3/20 – 5 am probably Group Work**-Redid target positions for Simon Says buttons  
-Can’t put Simon code in, going to press center button and skip  
-Spent hours smoothing everything out, debugging code  
-Made sure batteries were charged  
-Testing, testing, testing

**Friday 3/20 9 am – 12 pm – Internal Competition**-Could play games well  
-Line following killed us, different lighting  
-Will need to fix that.  
-Team A won

**Tuesday 3/31 Discussions online**

-For the rest of March we honestly didn’t really meet.   
-Evan plans to make slight changes to the line following set up   
-Break up the sensor array & have the middle to line following, edges check for turns

**APRIL**

**Wednesday 4/1 Meeting with Dr. Harvey**-No need to continue biweekly meetings  
-Just need to do runs at the Sr Design Fair  
-Meet with Dr. Harvey by appointment if needed.

**Friday 4/3 1-1:30 pm Group Meeting**-Brief discussion of plans for Senior Design Fair  
-Poster draft is on drive  
-Going to do some testing on the robot this weekend to make sure it is good to go for the Senior Design Fair, line following is basically fixed so the whole track should be completed which is a massive improvement from the Internal Competition

**Sunday 4/5 12 – 3? pm Group Work**-Worked on new line following arrangement  
-Bunch of tests runs to make sure it could handle all of the turns  
-Finish line is still a little weird  
-Need to make sure EaS have enough cotton/tape to be consistent  
-Can’t test Simon because Team A needs theirs and we don’t have one  
-Ordered the wrong Simon Size, small one doesn’t’ seem to exist anymore

**Wednesday 4/8 9 – 11 pm Group Work**

-Everyone randomly decided they didn’t like the poster  
-Time was spent making a new poster  
-Discussion of Senior Design Fair, we’ll do runs every hour or so, need plently of charged 9Vs to make sure we don’t run out of power  
-Need to record a run for Dr. Harvey to be our final HW/SW grade  
  
**Thursday 4/9 – 10 – 5 pm Prep for Senior Design Fair and Senior Design Fair**-We finally blew a microcontroller  
-Evan, Chelsea and Louis fixed this problem   
-Tried to make Simon work with the Simon Team A left behind, still just is too quiet and not working with code  
- Test runs to make sure we were good for the Senior Design Fair  
-Robot did full track successfully at fair  
-Everything was fairly consistent and went well

**The rest of April**-Project completed so no more formal meetings  
-Discussions about M7 paper  
-Everyone worked on the paper individually on Google Docs, Chelsea finalized paper and handed in   
-Discussions about powerpoint slides  
-Again everyone worked on the separately online

**Wednesday 4/22 11:30 – 1:30 Presentation Prep & Presentation**-Group met before presentation to go over slides  
-Then presented

**ROBOT IS DONE, THE END**