Spring 20 Project: Traffic Light Vs. Roundabout

Capstone Weekly Status Report
Alain Shekanino – ams49@hood.edu
Matt Blank – mb68@hood.edu
Dylan Blevins – deb9@hood.edu
https://github.com/AMDSENIORPROJECT/Traffic-Project

REPORT WEEK 13 (May 1st – May 8th)

A. Weekly Accomplishments
   a. We finished the raw collect data for the intersection.
   b. We finished the finals presentation slides and the final reports
B. Problems/Issues
   a. ..
C. Next week's planned work
   a. None.

shekanino: 20 hrs, Blank: 3 hrs ,Blevins: 3 hrs. Total: hrs.

REPORT WEEK 12 (April 24 – May 1st)

D. Weekly Accomplishments
   a. We finished the raw collect data for the intersection.
   b. Prep work for finals presentation slides
E. Problems/Issues
   a. ..
F. Next week's planned work
   a. We plan to finish the raw data collection for the round-a-bout.
   b. We plan to create a Java program that parses and interprets the raw data and produces averages/calculations because python is taking too long to parse large data.
   c. We plan to finish the final report/presentation.
G. Time log
shekanino: 10 hrs, Blank: 16 hrs ,Blevins: 13 hrs. Total: hrs.

REPORT WEEK 11 (April 17- April 24)

H. Weekly Accomplishments
   a. We finished the raw collect data for the intersection.
   b. Prep work for finals presentation slides
I. Problems/Issues
   a. ..
J. Next week's planned work
   a. We plan to finished the raw data collection for the round-a-bout.
   b. We plan to create a python program that parses and interprets the raw data and produces averages/calculations.
   c. We plan to start the final report/presentation
K. Time log
shekanino: 1 hrs, Blank: 3 hrs ,Blevins: 3 hrs. Total: hrs.

REPORT WEEK 11 (April 10 - April 17)
L. Weekly Accomplishments
- a. We finished the raw collect data for the intersection.

M. Problems/Issues
- a. Not all the tutorial sites listed all the programming code – had to use Youtube videos and email the sumo-user to get information.

N. Next week's planned work
- a. We plan to finished the raw data collection for the round-a-bout.
- b. We plan to create a python program that parses and interprets the raw data and produces averages/calculations.
- c. We plan to start the final report/presentation

O. Time log

shekanino: 4 hrs, Blank: 3 hrs ,Blevins: 8 hrs. Total: hrs.

REPORT WEEK 10 (April 3 - April 10)
A. Weekly Accomplishments
- a. We finished round-a-bout development
- b. We attempted to collect our first "hard" output data from the intersection.

B. Problems/Issues
- a. We tried a method in which we were to collect Floating Car Data through the command prompt but we were unable to load the simulation.

C. Next week's planned work
- a. We plan to continue research on how to record data about the traffic flow. This includes max car buildup, total amount of cars through intersection, and average wait time at intersection. We hope to also begin implementing this.
- b. We will finish collecting traffic data for both the round-a-bout and 4-way intersection and begin to analyze it.

D. Time log

Shekanino: 3 hrs, Blank: 2 hrs, ,Blevins: 2 hrs. Total: 7 hrs.

REPORT WEEK 9 (MAR 27 - April 3)
A. Weekly Accomplishments
- a. We did some research on the data collection methods that will be used in the simulations.
- b. Created voiceover for the midterm presentation slides
- c. Researched further on how to successfully convert 5 lanes intersection into a roundabout.

B. Problems/Issues
- d. There weren't any problems.

C. Next week's planned work
- e. We plan to finish development of the round-a-bout.
- f. We plan to continue research on how to record data about the traffic flow. This includes max car buildup, total amount of cars through intersection, and average wait time at intersection. We hope to also begin implementing this.
- g. We plan to start and finish collecting the data for the 4-way intersection and possibly start collecting data for the round-a-bout

D. Time log **(Does not include hours for Midterm Project)**

Shekanino: 3 hrs, Blank: .0 hrs, ,Blevins: 2 hrs. Total: 5 hrs.

REPORT WEEK 8 (MAR 6 - MAR 27)
A. Weekly Accomplishments
    a. Figured out what possible tools we may use to monitor the simulation
    b. Created Demonstration for Midterm Project
B. Problems/Issues
    a. There weren't any problems as we haven't really accomplished much this week.
C. Next week's planned work
    a. We plan to continue development of the round-a-bout.
    b. We plan to continue research on how to record data about the traffic flow. This includes max car buildup, total amount of cars through intersection, and average wait time at intersection. We hope to also begin implementing this.
    c. We plan to continue modifying the dimensions of the final four-way intersection design to better match that of the real intersection.
D. Time log **(Does not include hours for Midterm Project)**
Shekanino: 1 hrs, Blank: .25 hrs, ,Blevins: 0 hrs. Total: 1.25 hrs.

REPORT WEEK 7 (FEB 28- MAR 6)
A. Weekly Accomplishments
    a. Basic design of a round-a-bout was established. It still needs much work.
B. Problems/Issues
    b. We think the round-a-bout just holds its shape but isn't functioning properly with our large amount of lanes. Test and modification is probably necessary.
C. Next week's planned work
    c. We plan to continue development of the round-a-bout.
    d. We plan to continue research on how to record data about the traffic flow. This includes max car buildup, total amount of cars through intersection, and average wait time at intersection. We hope to also begin implementing this.
    e. We plan to continue modifying the dimensions of the final four-way intersection design to better match that of the real intersection.
D. Time log
Shekanino: 2 hrs, Blank: 1 hr, ,Blevins: 3 hrs. Total: 6 hrs.

REPORT WEEK 6 (FEB 21- FEB 28)
A. Weekly Accomplishments
    f. We completed the four way intersection traffic lights, routes, and vehicle spawning.
    g. We started to find the exact length requirements to implement into the simulation.
    h. We started to work on the roundabout version of the simulation for our tests.
B. Problems/Issues
    i. We were having some problems learning to spawn multiple vehicles using a loop or function in our .rou.xml route file. We decided to write a program that can calculate time intervals and write all the hard code for us that we can then copy and paste into the .rou.xml route file.
C. Next week's planned work
    j. We plan to start the testing of at least the original intersection.
    k. We plan to implement the google earth data into the simulations
    l. We plan to Finish the roundabout version of the simulation

D. Time log
Shekanino: 2 hrs, Blank: 6 hrs, ,Blevins: 4 hrs. Total: 12 hrs.

REPORT WEEK 5 (FEB 14- FEB 21)
A. Weekly Accomplishments
   a. We finished developing the final intersection format for the final traffic light simulation. This was done by figuring out how to switch the direction of single lanes.
   b. We figured out how we are going to implement all the vehicles (About 50,000). This will be done by writing a program that will printxml statements for us.
   c. We continued going through the SUMO tutorials and learning what is necessary to develop simulations.
   d. We learned how to manipulate traffic light colors and durations.
B. Problems/Issues
   a. We were having some problems learning to spawn multiple vehicles using a loop or function in our .rou.xml route file. We decided to write a program that can calculate time intervals and write all the hard code for us that we can then copy and paste into the .rou.xml route file.
C. Next week's planned work
   a. We plan to use python to create roughly 50,000 lines of xml code.
   b. We plan to use google earth to accurately measure the size of the traffic light junction so we can accurately mimic the turning distance in our simulation.
   c. We plan to learn more about traffic light rotations to figure out the traffic light rotations we may test.
   d. We plan to start thinking about the development of our round-a-bout.
D. Time log
Shekanino: 4 hrs, Blank: 5 hrs, ,Blevins: 4 hrs. Total: 13 hrs.

REPORT WEEK 4 (FEB 7- FEB 14)
A. Weekly Accomplishments
   a. We finished development of a basic two-lane intersection in SUMO.
   b. We began developing the simulation in SUMO that would be used for our testing of a four-way intersection.
   c. We continued going through the SUMO tutorials and learning what is necessary to develop simulations.
B. Problems/Issues
   d. We had trouble with the SUMO_HOME environmental variable. We found out that the bin directory for our SUMO development software, which is version 1.4, had to be added to our Path user variable, and a new user variable SUMO_HOME had to be added with the directory set as the parent of the bin folder.
   e. We are having trouble mimicking the lanes of the actual intersection the data was gathered from. The lanes are centered at the junction and I need the direction from one lane to be reversed, but can't find a way to do that given the lock centered on the junction.
C. Next week's planned work
   f. We plan to complete an automatic vehicle emitter for our intersection. Part of this is learning to understand the SUMO .rou file language.

g. We plan to have code to control the stoplight patterns as we please so that we can test different intervals.
h. We plan to finish converting the basic intersection into a replica of the intersection our data was gathered from.
D. Time log
Shekanino: 2 hrs, Blank: 9 hrs, ,Blevins: 3.75 hrs. Total: 14.75 hrs.

REPORT WEEK 3(JAN 31- FEB 7)
E. Weekly Accomplishments
    i. We began development of a basic two-lane four-way intersection. We were able to establish 8 lanes all connected to a single junction, and create 12 routes to travel across these lanes.
    j. We continued reading through the tutorials.
F. Problems/Issues
    k. We had some trouble creating the intersection.
G. Next week's planned work
    l. We plan to finish development of our basic two-lane four-way intersection.
    m. We plan to being development of our final simulation that mimics the data we found online that was gathered from a four-way intersection. Our simulation will also mimic the shape of the intersection.
H. Time log
Shekanino: 1.25 hrs, Blank: .5 hrs, Blevins 3hrs. Total: 4.75 hrs.

REPORT WEEK 2 (JAN 24- JAN 31)
A. Weekly Accomplishments
    n. We were able to download and install SUMO on the devices we plan to construct and run the simulations on.
    o. We went through some of the tutorials to get to know SUMO better.
    p. The proposal was finished and turned in.
B. Problems/Issues
    q. Originally we had problems following SUMO tutorials. We found out we were using an older version that Google had prioritized for the search.
C. Next week's planned work
    r. We will continue to learn more on how to use sumo and GitHub.
    s. We plan to being construction of our intersection in SUMO and to get a feel for how run our simulation.
D. Time log
Shekanino: 2 hrs, Blank: 1 hr, Blevins: 3hrs. Total: 6 hrs.

REPORT WEEK 1 (JAN 17- JAN 24)
A. Weekly Accomplishments
    t. We were able to work on team proposal
    u. We found research data for an intersection that we will optimize.
    v. Starting research in sumo; get familiarize with how it works.
B. Problems/Issues
    w. One of our team member got sick. So we had to cover his part.
    x. We need to have certain facts and requirements of the proposal clarified
C. Next week's planned work
    y. We will continue to learn more on how to use sumo and GitHub.
    z. We plan to finish the proposal by Tuesday afternoon.

D. Time log

Shekanino: 4 hrs, Blank: 3.25 hrs, Blevins 4hrs. Total: 11.25 hrs.