

Distracted Driving

Team Number: Jackson Team 5

School Name: Jackson Middle School

Area of Science: Computer Science

Computer Language: NetLogo

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We have investigated the problem of distracted driving and car collisions. We find that drivers who are distracted while they are driving can be a hazard because which it can cause injury to themselves and others around them. Through our research, we found that it is not just drivers, but others in the vehicle who can cause the driver to be distracted. From the results of our project we hope to make people aware of the problem and to give others more information about what might happen if you were to drive distracted.

Using Netlogo we represented two conditions in our models. One model is for the average of main street traffic in which collisions of cars are monitored, and the second model is where cars meet at an intersection. Both models represent distracted drivers in yellow cars,

non-distracted drivers in green cars, and red cars represent the cars that have crashed. In the Main street model, the crash will be detected when one of the car's speed is set to zero. The amount of cars will be controlled by a slider. The second model was created as a comparison of distracted drivers and focused drivers between the two models. We graphed the number of collisions that each car was involved. Once the cars crash, they will turn red and will have to roll a die to get out of the crash the number of crashes are monitored.

The data that our models produced, through research, were very surprising. We gathered anecdotal data by watching for cars who are distracted and noted the street and distractions. We stood on the corner of a street and observed for 20-30 minutes after school, or whenever we could. We also went out on the weekends because we had more time to gather our own information. We also got data from different streets to increase our data sample size and data points. We watched from the car as our parent or adult was driving. Our results showed, from the minimum to the maximum: Lead St. and Virginia St. both bring a number of one driver, I-40 west got a total of two, Lomas and Indian School had a total of five, San Mateo St. totaled 11, Eubank totaled 22, and Montgomery had a total of 39 drivers who were distracted. The numbers that we gathered came from speaking with Mark McCracken and his team at Safer New Mexico. From the notes we gathered, showed us that people would most likely use their devices on the calmer streets rather than the busier streets. We theorized that the drivers believed that there was less to worry about and therefore: believe that drivers felt they did not need to be cautious. The information from Safer New Mexico helped us conclude that in the year 2013-2015 we have had the most accidents of distracted driving.

References and observations:

Distracted Driving

Streets	Number of People
Montgomery St	39
San Mateo St	11
Eubank St	22
Lead St	1
Virginia St	1
I-40 W	2
Indian School	5
Lomas	5

This is information we gathered during our observations.

Most Significant Achievements of Members:

- *“ I was surprised at how much information we were able to accumulate. The best accomplishment that I have reached during this year of Supercomputing Challenge was being able to progress in my coding. Another of my achievements is that I understood our coding and am pleased we were able to explain our code. I was able to find people that have dealt with distracted driving and speak*

to them to get more information for our project. I was able to reach my goal to be able to make presentations to be ready and become accustomed to public speaking. Finding enough information to give to our team and writing all of our reports in time was a goal that my team and I have reached. Recording our own observations and working as a team to combine our data, has advanced our project and has become an achievement that my team and I had worked to reach.” -Nancy Avila

- *“The greatest accomplishment that I have reached this year is getting closer to and being able to work with my team. We were able to talk with people who work with the problem we are trying to solve. I have learned how to program and code. I was given the opportunity to talk and to learn from the people at New Mexico Tech. I built up my ability to present in front of judges. I have also made friends from other schools. I am able to research and review using more resources than just the internet. I can now ask for help if needed and be more interactive with other people. I’ve become closer with not only students but teachers and adults as well. I have also been put in several complicated situations, and with the help of my team, I was able to find a way to get through them.” -Caitlin Woods*
- *“ My most important achievements are learning how to code and creating a stronger bond with my peers to be able to program a model for our project. Being able to code at home has helped me to progress in my coding skills and achieve my goal. Another achievement that I'm proud of, is being able to remember code with NetLogo technology. Also, being in this program with my*

friends has helped me a lot with my confidence to develop coding. Another of my greatest achievements is being able to go to New Mexico Tech. My last achievement is learning to contribute with my team to develop this project .”

-Laisbiel Garcia

- *“I have accomplished many things performing this project. I feel that my greatest achievements has been advancing my coding skills, my writing skills, and my public speaking skills. My public speaking skills have been greatly improved, and I feel like I am ready for the real world. I also enjoyed going to New Mexico Tech and learning to code. Another achievement is being able to work with my teammates every Monday. Also, being in this program has helped me with socializing. My final achievement was being able to help to add to the awareness of distracted driving”.- Robbie Garner*

We thank everyone who has helped us in this project. We thank Mrs. Glennon for taking time off from her daily life to come every Monday to help each of us develop and improve our projects. She gave us suggestions on collecting data and contacting Safer New Mexico to schedule a meeting to give us more information for our project. Mrs. Glennon has helped us a lot and we thank her more than words can express. We thank Mrs. Lunsford, Neil, and Jane for coming every Monday to come help us and give us suggestions whenever we struggled in our project. Our team appreciates Nick Bennett for coming whenever he was free to help our team members who needed help with coding. We improved our code and learn more ways to make our demonstration better. We also thank Safer New Mexico and Sonia Montgomery for talking with us about distracted driving and giving us more information for our project.

Resources

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