The Bosque School Parking Lot

Adventures in Supercomputing Challenge
Final Report
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Bosque School
Team #013

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Executive Summary

We are trying to conduct an easier or faster, but still efficient way to enter and exit the Bosque School parking lot. We chose this problem because we saw that it was taking a while for parents to pick up their children and leave the school. This is a major problem in our school because our roads are small and cannot accommodate large numbers of cars. It is also a risk to our community to have a large number of people all leaving or entering at the same time. In this problem we will simulate our school parking lot, and hopefully show how we can progress the traffic from entering and exiting Bosque School. We will also provide more than one simulation of our parking lot, and will show a couple different ways to exit the school.

Introduction

The Issue

The issue is that at 3:10pm every day our school parking lot becomes congested. We would like to find some way to make getting in and out of school faster. The way that we have found is to add other exits, and hopefully we can make sure that the parking lot flows better making it safer and more efficient. It is also a safety hazard for so many people to be crammed in a small area.

The Project

Background Information

- 95 cars came into the parking lot within eighteen min.
- creates backups every day
- traffic modelling is used to study traffic probs. In other places

Project Description

We are modeling our school parking lot at the busy time of the day. We would like to make it safer and quicker for people to get in and out of our parking lot. We started by counting the cars that came into the parking lot, we counted for twenty minutes, but after eighteen, cars stopped coming in. Then, using starlogo, we modeled our parking lot, and figured out that we needed more exits, or a bigger parking lot in general.

Results/ conclusions

The Project

Our results are that the parking lot could stand to be bigger. There are too many cars, and not enough exits or parking spots. With 95 cars coming in to the parking within eighteen minutes, and not a lot of cars leaving, we need moor exits, or waiting spots for the cars to stop so they don't cause back up. We do know that our head of school, Andrew Wooden, has recently purchased a piece of land to the west of the school. He is planning on expanding the parking lot so that this back up problem doesn't happen any more.

The Code

```
to start
fd 1
wiggle
if pc = blue
        [ lt 180]
fd 1
if pc = orange
        [die]
end

to wiggle
lt random 20
rt random 20
end

count-turtles

to double
if pc = red
        [hatch [setc 105]]
if pc = red [wiggle]
end
```

Our code is currently being worked on. This is what we have so far. .

Recommendations

Our recommendations are that we need to expand our parking lot so that there is more room for people to wait for their kids. We also recommend that the driveways are bigger and that there are more exits.

Most significant achievement:

Our most significant achievement is the fact that we chose a project that means so much to us. Our parking lot causes back up, and it's just a hassle for us, and everyone else to. This project is helping our school design a better parking lot for our new plot of land.

Acknowledgements

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Tom Allen, for sponsoring us and putting up with our nonsense. Greg Scantlen, for helping us with the computer junk. All our other supercomputing friends, because without them…..who knows?

References

Appendices:

Appendix A: Code

Appendix B: The Mathematical Model

Appendix C: Other Figures