During the day I noticed a severe problem, we had many empty lanes opened and not enough customers going through. I set out to solve this problem by creating a computer algorithm to represent our store. My original prediction was that if we closed 4 lanes, had 4 regular lanes, and 4 express lanes it would maximize profits. Using a group of 450 - 2000 potential customers all with different number of items, different arrival times, and a different rate of finding and grabbing any item. I used an algorithm to calculate with any number of lanes and any type of lanes what the average wait time per customer would be. I have come to the conclusion that using 6-8 regular lanes, using 2 express lanes, and having 2-4 lanes closed would maximize profits and customer satisfaction. Using this combination it would give the lowest average wait time. This would also allow less employees to be needed per day, therefore it would let the company increase the profit at a lower cost. The difference between using 6 or 8 regular lanes and having 2 or 4 lanes closed is negligible, thus my assessment of 6-8 regular lanes, 2 express lanes, and 2-4 closed lanes. My original hypothesis was wrong, however through rigorous testing and many different variables I can give my assessment to help save the company money and continue giving the customers a pleasant time.