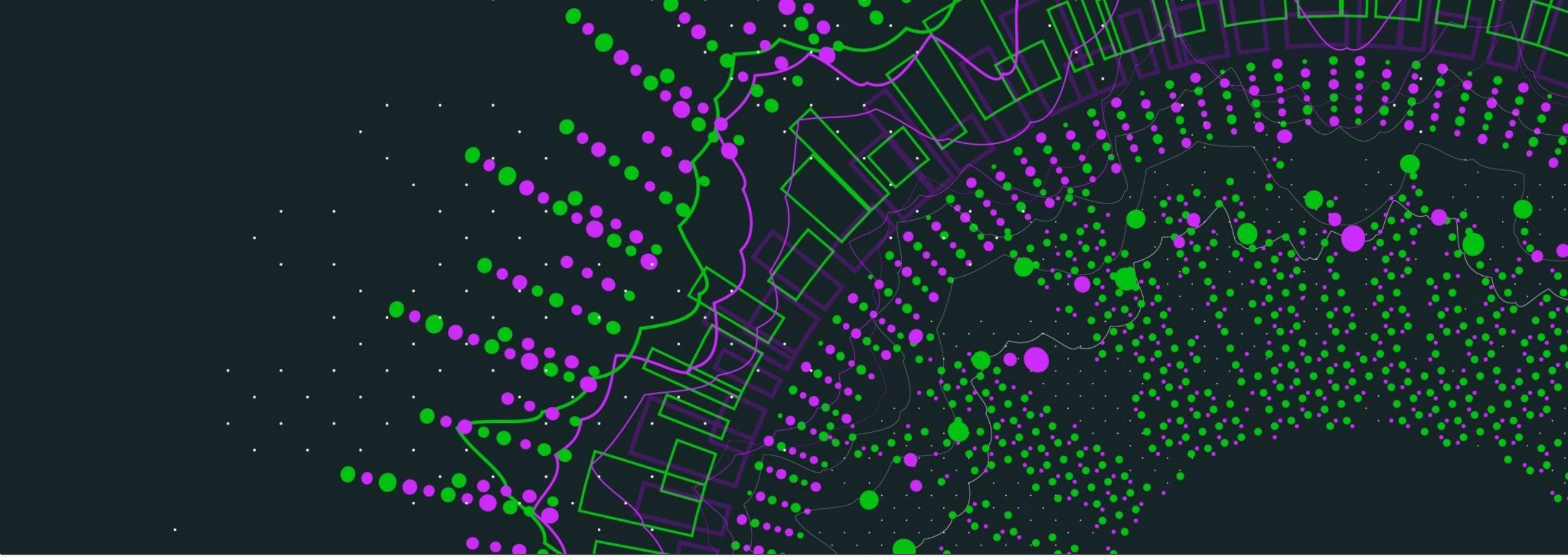


OPTIMIZING EFFICIENCY FOR MEMBER ASSISTANTS

Project by Reese Breeling

INTRODUCTION

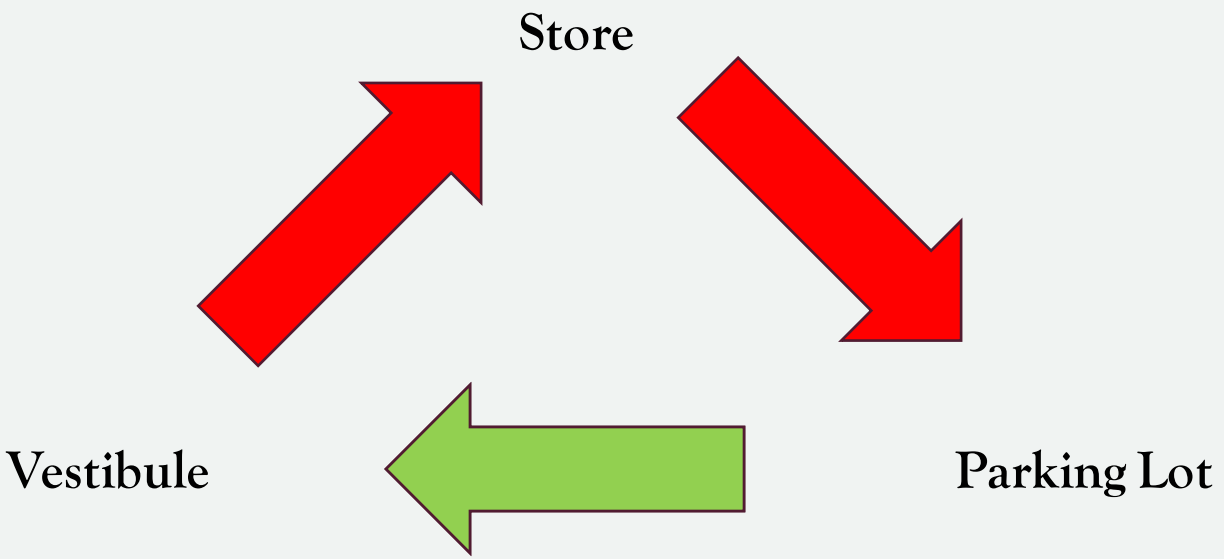
Member Assistants / Cart Attendants do the following tasks throughout the day:

- Keeping a well-organized parking lot
- Loading items into customer's vehicle
- Support members through their experience

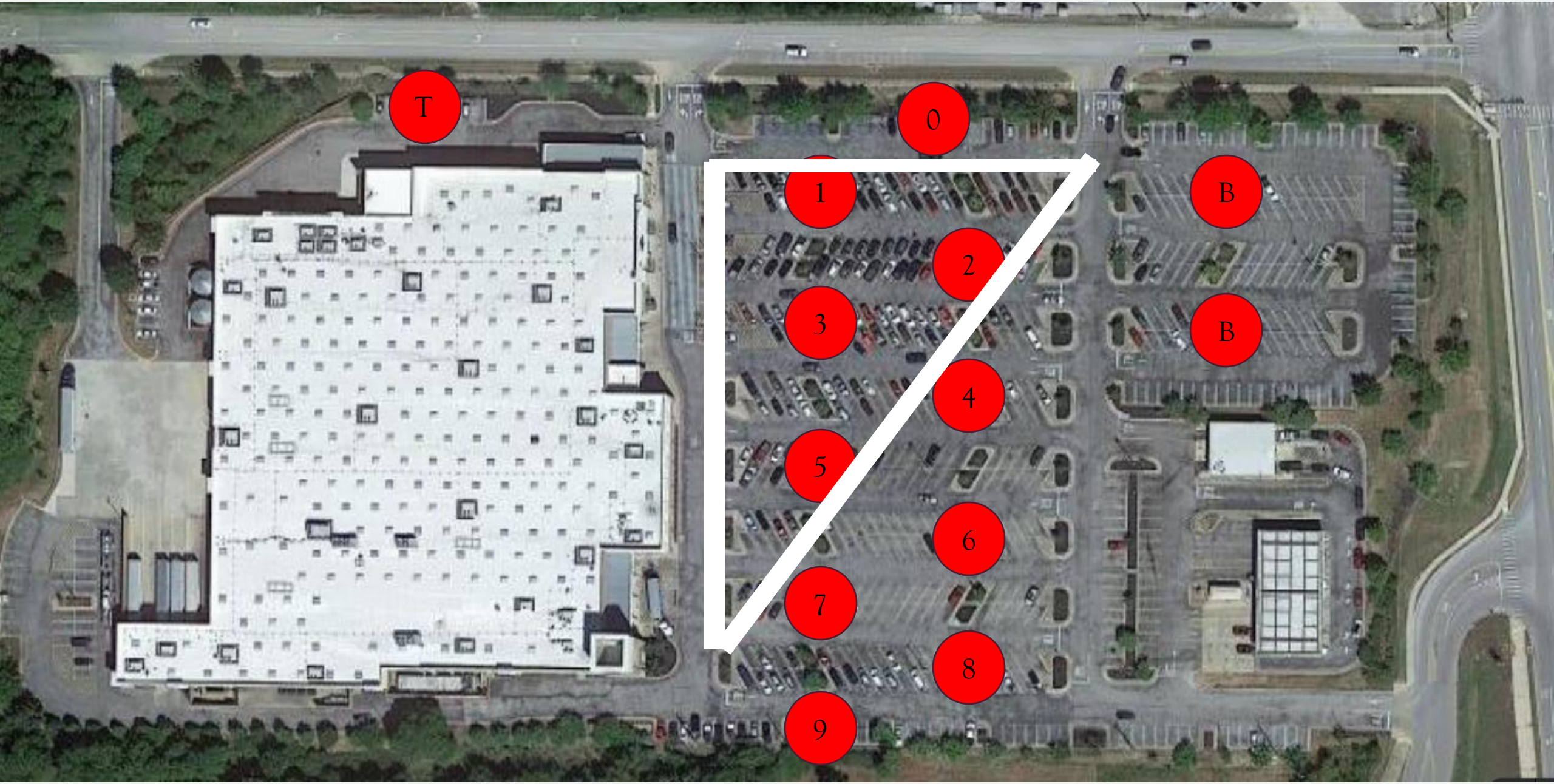
The goal is simple: **find the optimal method to maximize efficiency within pushing carts.**

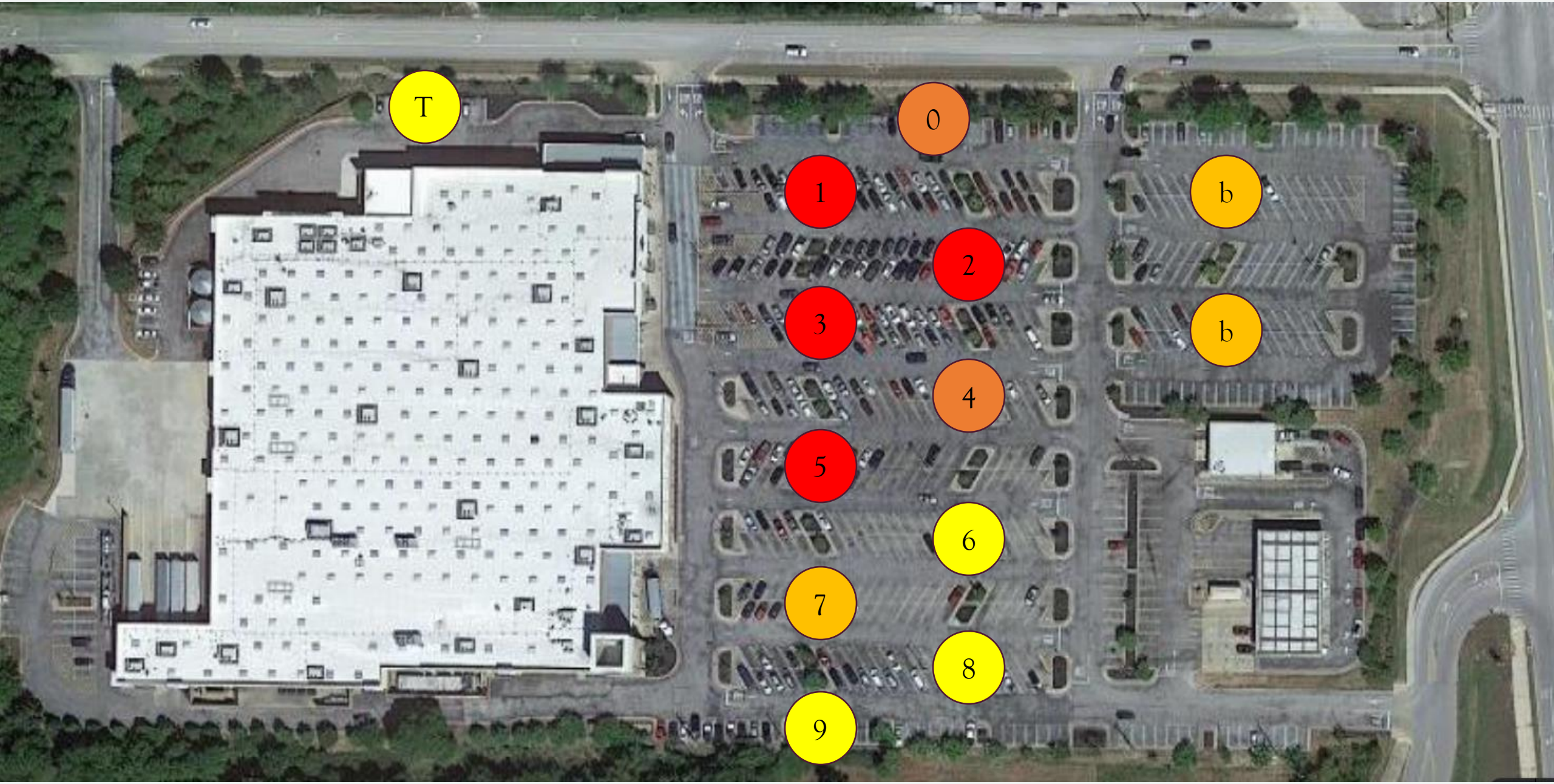
THE LIFE-CYCLE OF A CART

A cart has a simple routine throughout its day



This last arrow is primarily what member assistants deal with.


T
0
1
2
3
4
5
6
7
8
9
B
B


T
0
1
2
3
4
5
6
7
8
9
b
b

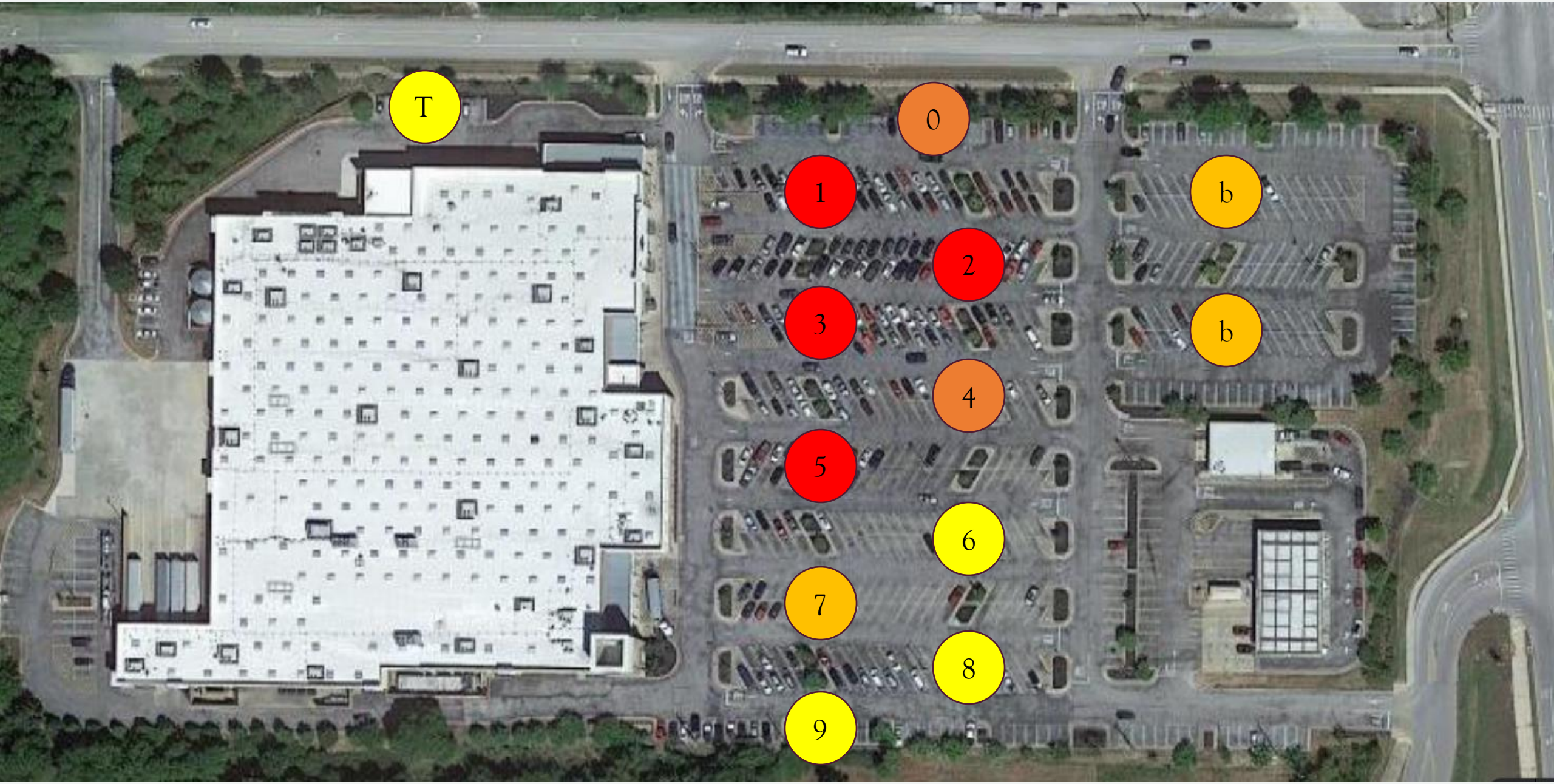
CURRENT METHOD AND EFFICIENCY

The current method is to roam the parking lot and search for carts in corrals

This is inefficient due to the following:

- Gives employees a chance to work together and, therefore, talk to one another
- Time is wasted roaming
- Encourages laziness to due coworker dependency

But what does this method look like on the parking lot?


T
0
1
2
3
4
5
6
7
8
9
b
b

SOFTWARE AND DATA COLLECTION

Factors in simulator:

- Time it takes to get to each corral
- Efficiency of each worker
- Manager (Mule)
- Time of day
- What day
- Amount of workers

input

```
Vestibule starting with: 250 carts
Alan Visited One
Wesley Visited Four
Alan Visited Two
Alan Visited Zero
Wesley Visited Seven
Alan Visited Three
Wesley Visited Five
Alan Visited Four
Wesley Visited One
Alan Visited Two
Wesley Visited Three
Alan Visited Two
Wesley Visited Three
Wesley Visited One
Alan Visited Five
Alan Visited Six
Vestibule currently has: 110 carts
Wesley Visited Two
Alan Visited One
Wesley Visited Three
Alan Visited Zero
Alan Visited Four
Wesley Visited Three
Alan Visited One
Alan Visited Two
Alan Visited Five
Wesley Visited Seven
```

input

```
Braydon Visited Three
Braydon Visited One
K Visited Seven
Braydon Visited Four
K Visited Six
CONGRATULATIONS!! You withstood the customers, good job!
Corral Zero: 7
Corral One: 2
Corral Two: 8
Corral Three: 11
Corral Four: 2
Corral Five: 18
Corral Six: 0
Corral Seven: 3
Corral Eight: 4
Corral Nine: 18
Vestibule finishing with: 127 carts
Total carts on parking lot: 73 carts
Total customers within experiment: 4893 customers


Pusher Statistics:
Reese visits: 37
Alan visits: 61
Braydon visits: 72
K visits: 81
Wesley visits: 54
Total Wasted Time due to Roaming: 6H 48M 42S

...Program finished with exit code 0
```

Input

```
Braydon Visited Five
K Visited Zero
K Visited One
Braydon Visited Three
K Visited Two
Vestibule empty. Failed at 7H 51M 1S
Corral Zero: 10
Corral One: 11
Corral Two: 2
Corral Three: 12
Corral Four: 16
Corral Five: 18
Corral Six: 23
Corral Seven: 21
Corral Eight: 12
Corral Nine: 15
Vestibule finishing with: 0 carts
Total carts on parking lot: 140 carts
Total customers within experiment: 3312 customers


Pusher Statistics:
Reese visits: 36
Alan visits: 63
Braydon visits: 25
K visits: 27
Wesley visits: 51
Total Wasted Time due to Roaming: 5H 15M 29S

...Program finished with exit code 0
Press ENTER to exit console.
```

RESULTS

During a busy day, the following would happen

- Vestibule would be empty over 50% of the time
- Wasted time roaming would range 5 - 6 hours

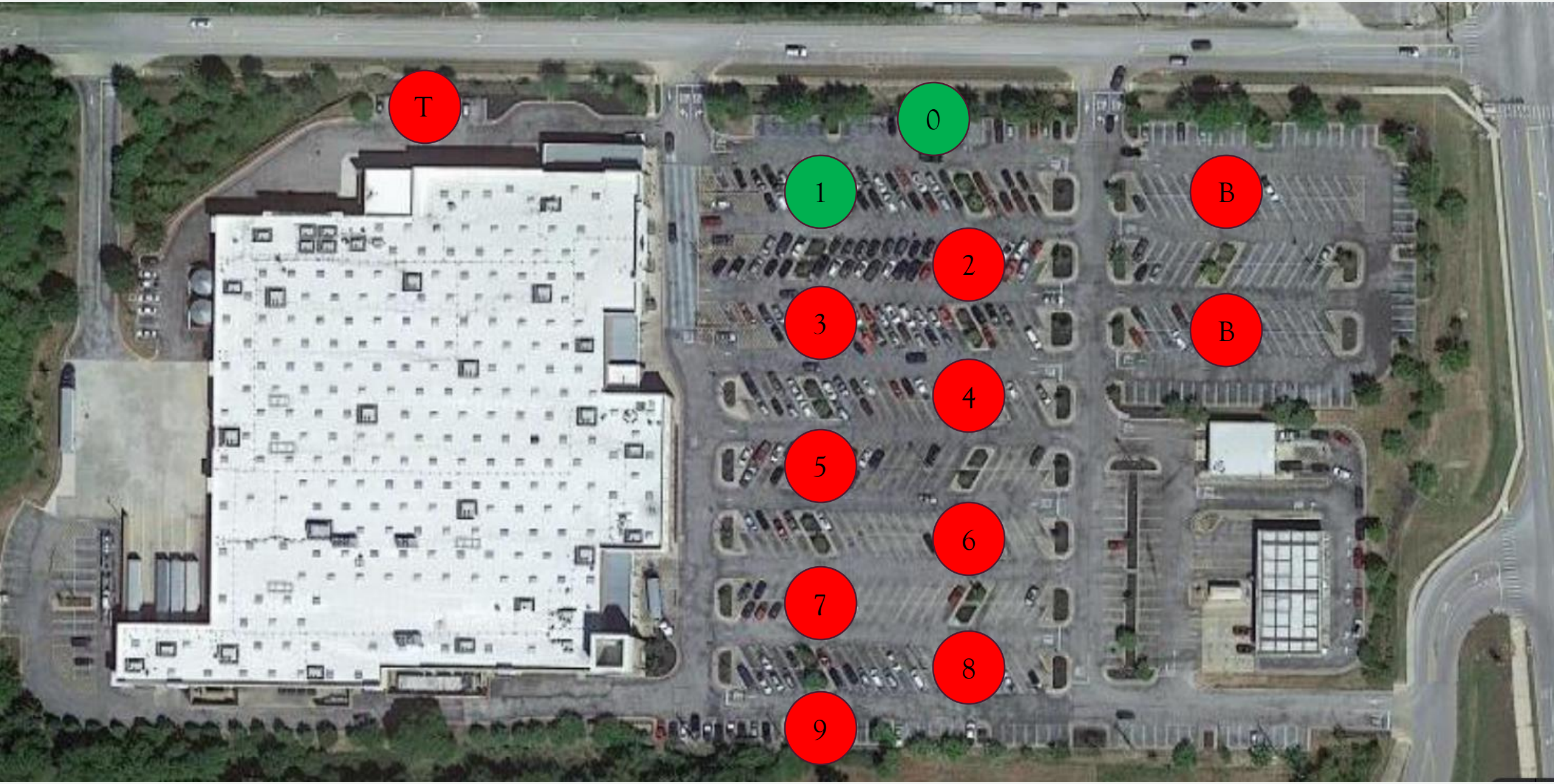
What is one method to improve our efficiency?

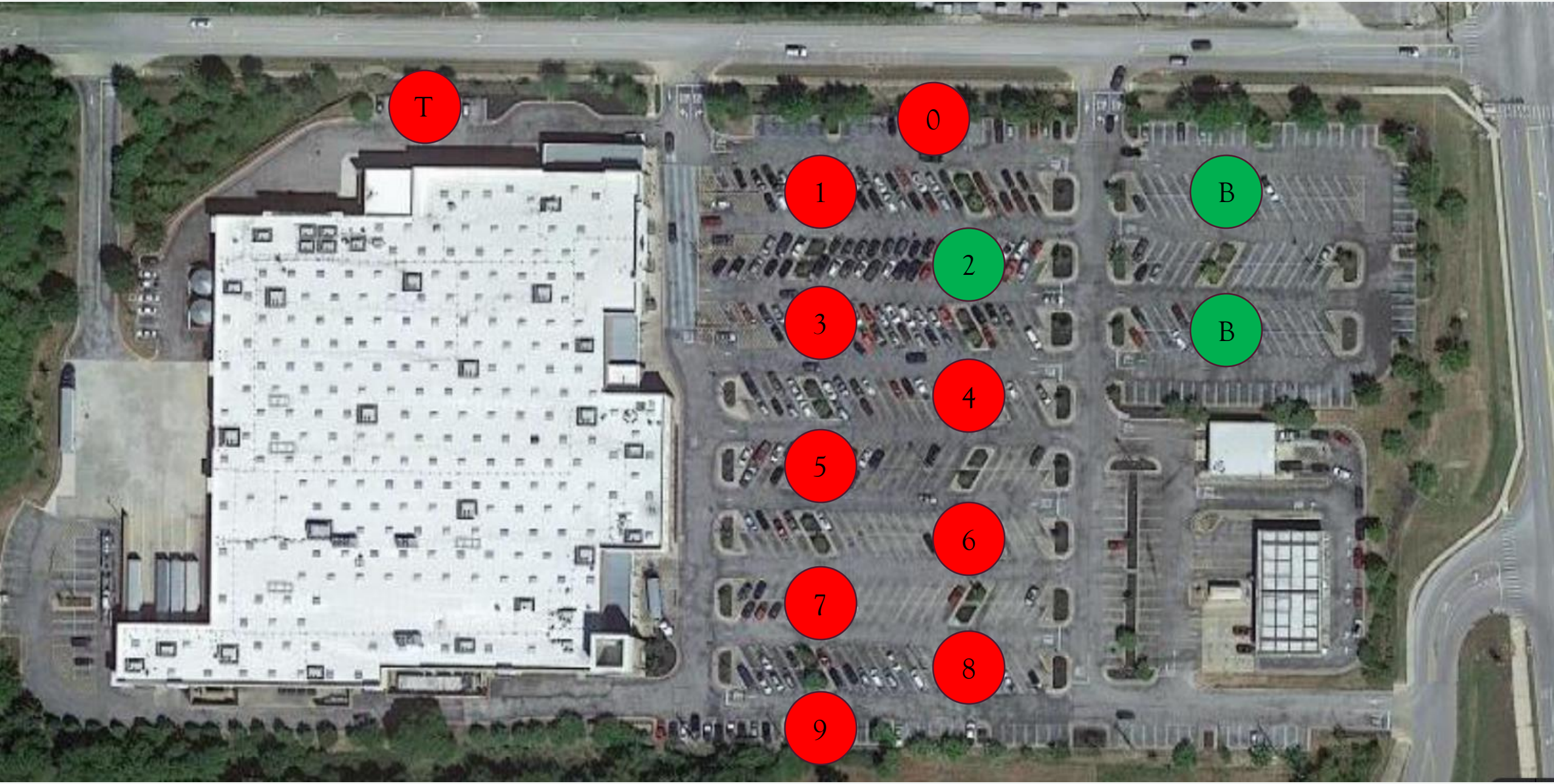
PUSH, STACK, MANAGER (PSM) METHOD

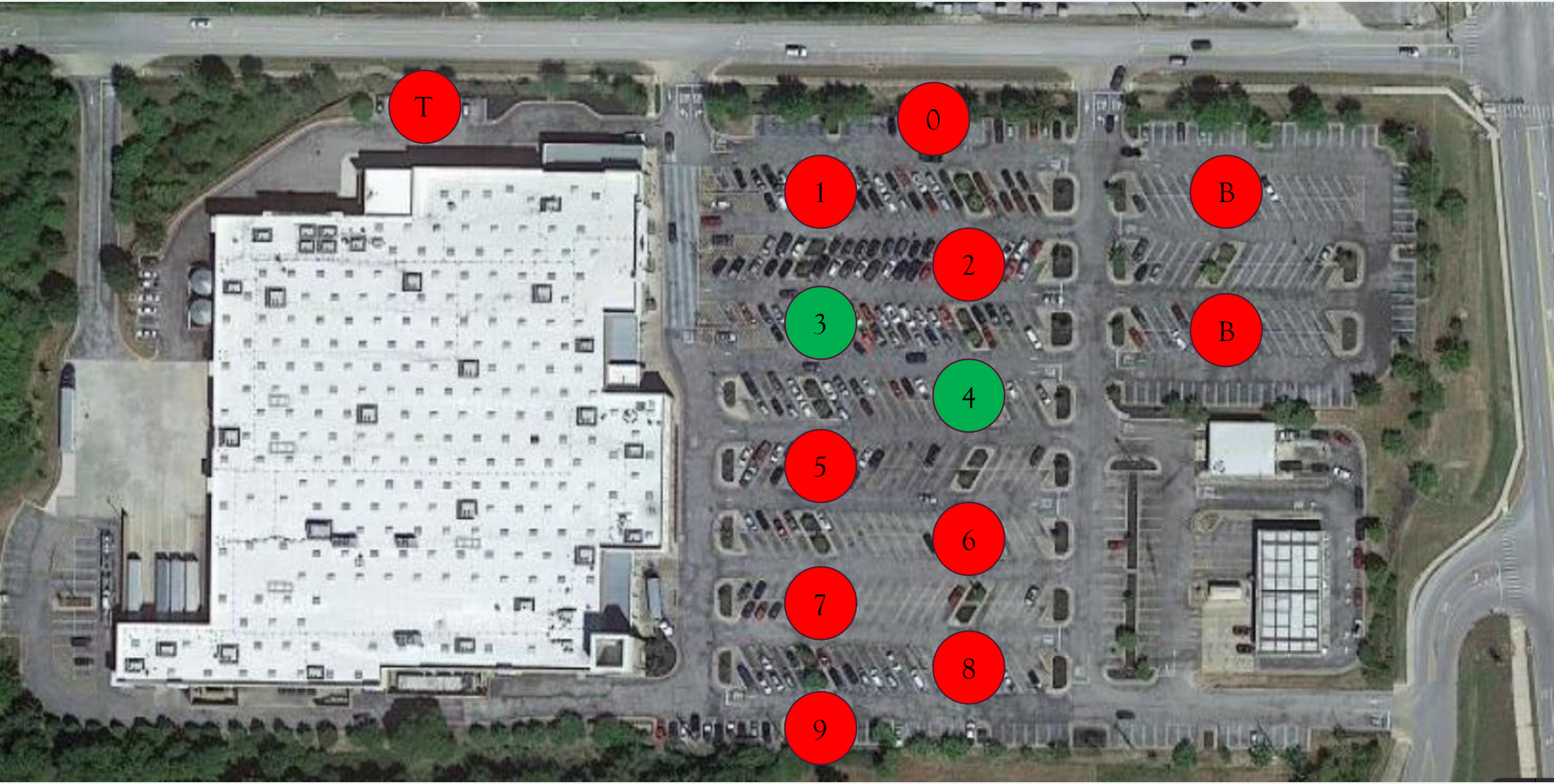
This method is a slight improvement from the original one.

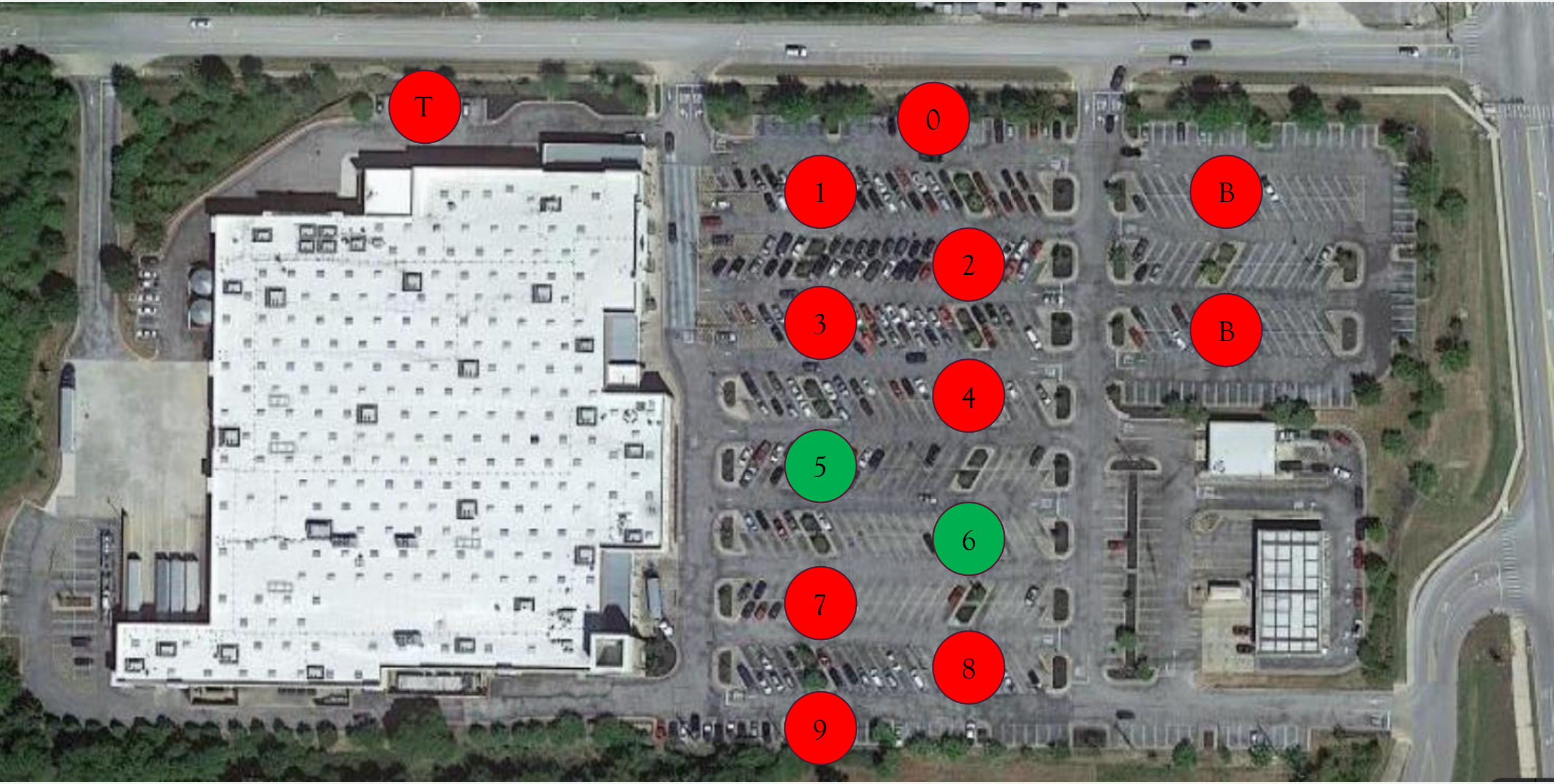
It includes one employee stacking, one employee operating the cart manager, and one or more employees regularly roaming and pushing.

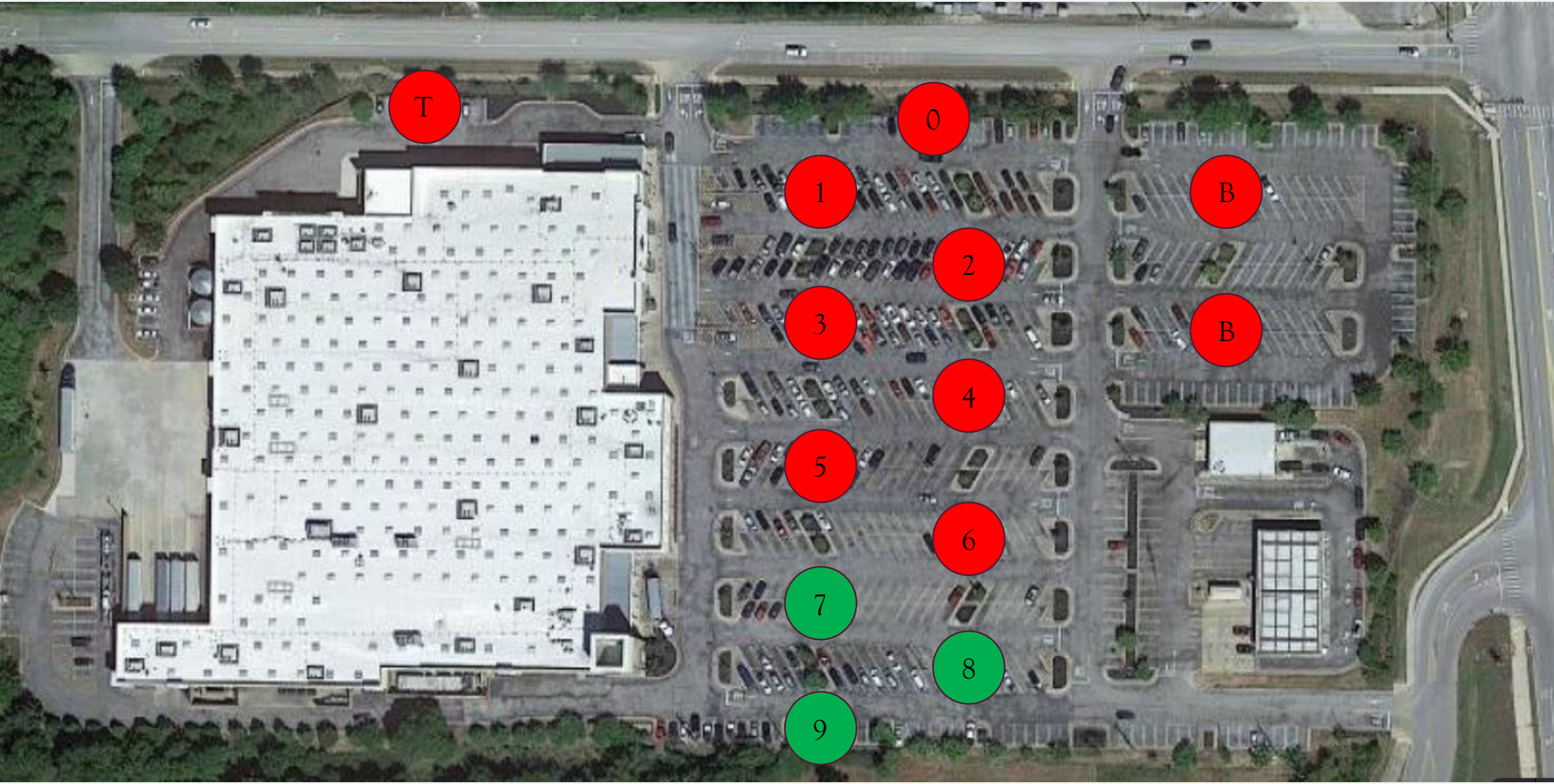
Enables the ability to combine multiple corrals.


T
0
1
B
2
3
B
4
5
6
7
8
9


T
0
1
2
3
4
5
6
7
8
9
B
B


T
0
1
B
2
3
B
4
5
6
7
8
9


T
0
1
B
2
3
B
4
5
6
7
8
9


T
0
1
B
2
3
B
4
5
6
7
8
9

BENEFITS OF THIS METHOD

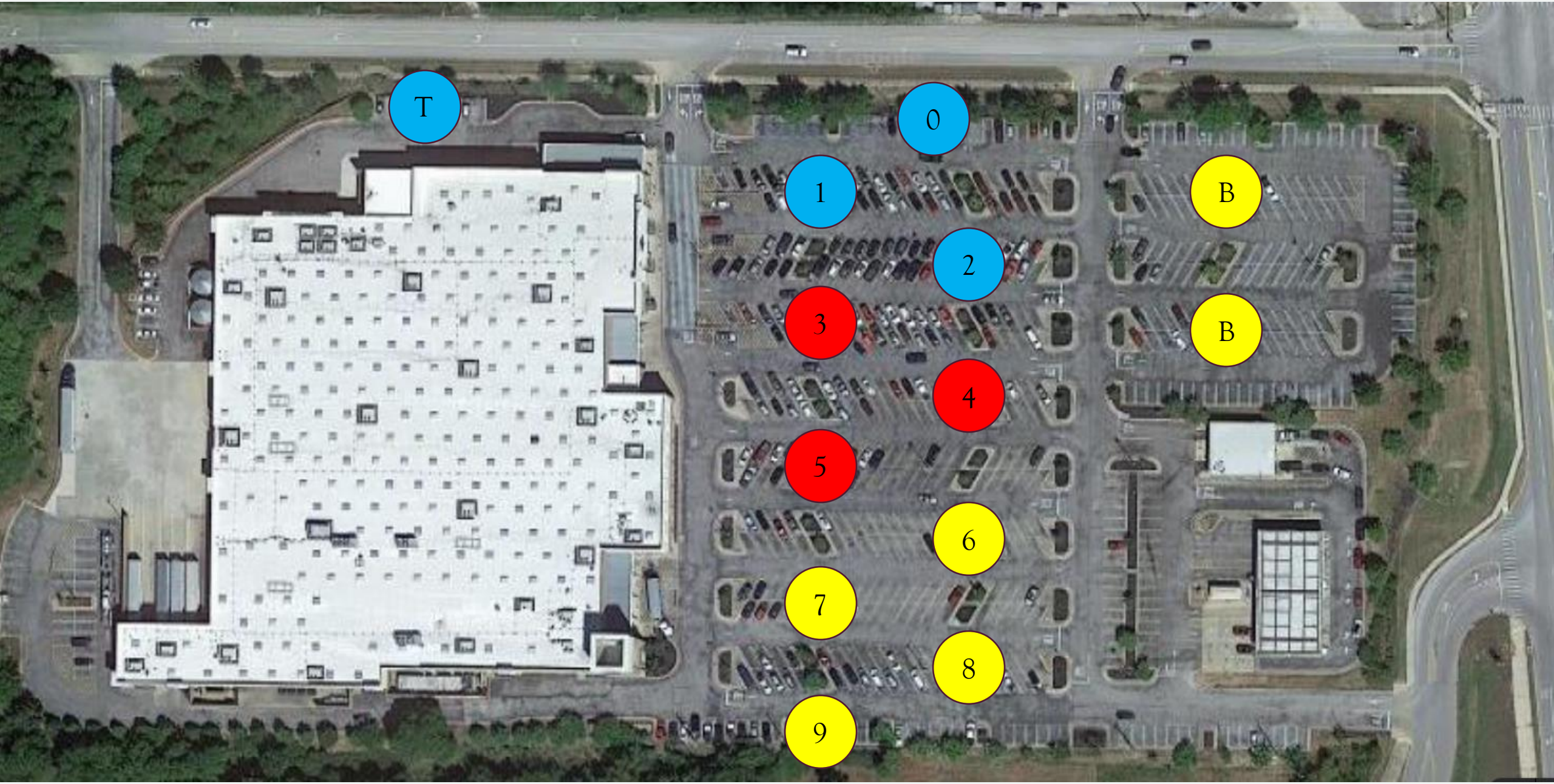
- A corral is visited more often
- Combining multiple rows cuts down time going back and forth from the vestibule
- The stacker would increase the number of carts within each load of the manager
- Employees are separated, so less slacking off

But can we improve efficiency even more?

ZONING METHOD (OPTIMAL)

Evenly assigns corrals to employees

- Corrals are visited multiple times every ten minutes


T
0
1
2
3
4
5
6
7
8
9
B
B

WHY DOES THIS WORK?

- Cuts time down from roaming
- Instils competitiveness
- Promotes a focused environment
- Less stressful
- Less energy consumption

BACK TO ROAMING METHOD...

This is inefficient due to the following:

- Gives employees a chance to work together and, therefore, talk to one another
- Time is wasted roaming
- Encourages laziness to due coworker dependency

BENEFITS OF OPTIMIZATION

- Ensure customer satisfaction
- Schedule less cart pushers
- Happier cart pushers

Implementing this method at Club 8209 has been quite the success. All cart pushers have expressed appreciation for this new method.

CONCLUSION

Implementing the "zoning method" into the cart pusher team will optimize efficiency for the entire Sam's Club store. Cart pushers will be working more while using less energy, the store will never run out of carts, and, most importantly, the customer will have a better overall shopping experience.