University of Phoenix

INFORMATION VISUALIZATION

WHITNEY BASS

INTRODUCTION

I am aware of the difficulties we have because of a lack of parking spots and growing traffic congestion since I am the city manager of a medium-sized city. We should expect a further rise in population and traffic as a result of the new industries relocating to the downtown region. Instead of building new parking spots, we might adopt a smart parking software to make better use of the ones we already have.

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Cite Manager

Rationale and Goals

Rationale

Smart parking apps update citywide availability. The software uses precise parking lot sensors. Drivers will rapidly understand each lot's parking capacity, reducing frustration. Real-time data helps park.

Optimizing parking infrastructure may save expensive expansions or new facilities. Smart parking software will spread demand among parking lots, maximizing space and decreasing stress. Downtown parking minimizes traffic. Parking reduction boosts urban development.

Municipal planners will get demand and trend data from the smart parking app. This data illustrates parking trends, peak hours, and issues. This data may help communities change parking rates, improve public transit, and find parking infrastructure investment areas. Data-driven parking improves the app.

Goals

Smart parking software maximizes parking resources. Drivers may easily discover city parking spots using the software's real-time display. This device reduces search time and unused parking spaces. Thus, it will optimize parking and decrease resident, employee, and visitor discomfort.

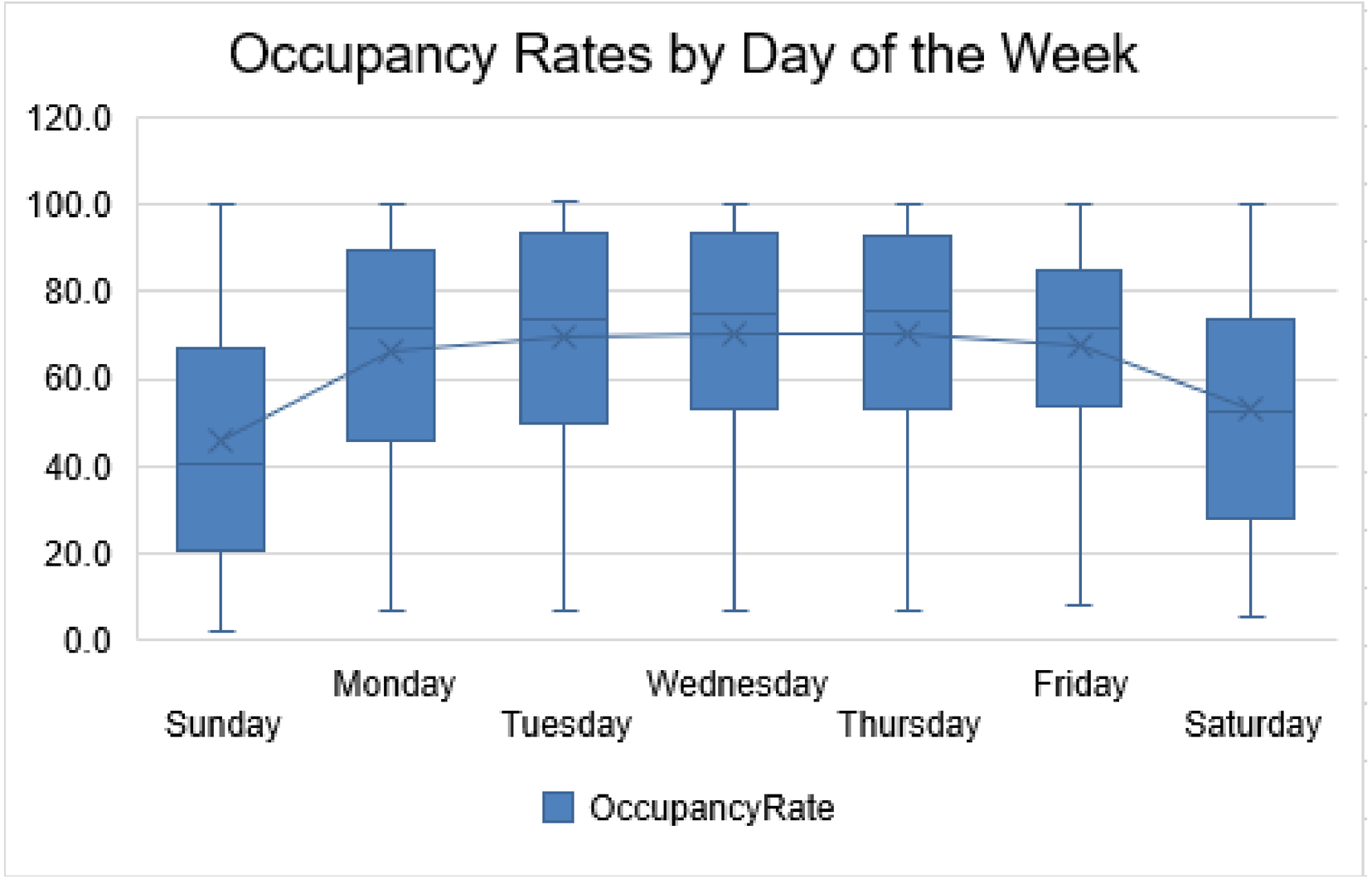
Traffic impacts our city's economics and livability. Smart parking software reduces parking search time and traffic. Before their travel, drivers may check real-time parking availability. When aimless driving lessens, traffic flow and travel times improve. Traffic flow improvements lower greenhouse gas emissions, benefiting the environment and public health.

Occupancy Rates for Each WeekDay

According to the box plots, the median value is much greater during the weekdays than it is on the weekends.

Because the occupancy rates are at their maximum during the weekdays, drivers should either search for alternate modes of transportation or choose to avoid traveling into the city during the times of day when commuter traffic is at its height.

Occupancy Rates for Each WeekDay



Occupancy Rates for Each Parking Lot

Highest Occupancy Rates:

The box plots show that of the observed parking lots, lots 2, 4, and 8 had the greatest occupancy rates. With a median occupancy rate of over 100%, Lot 2 stands out. This implies that lot 2 has consistently high parking demand every day of the week.

Trends in Occupancy Rates:

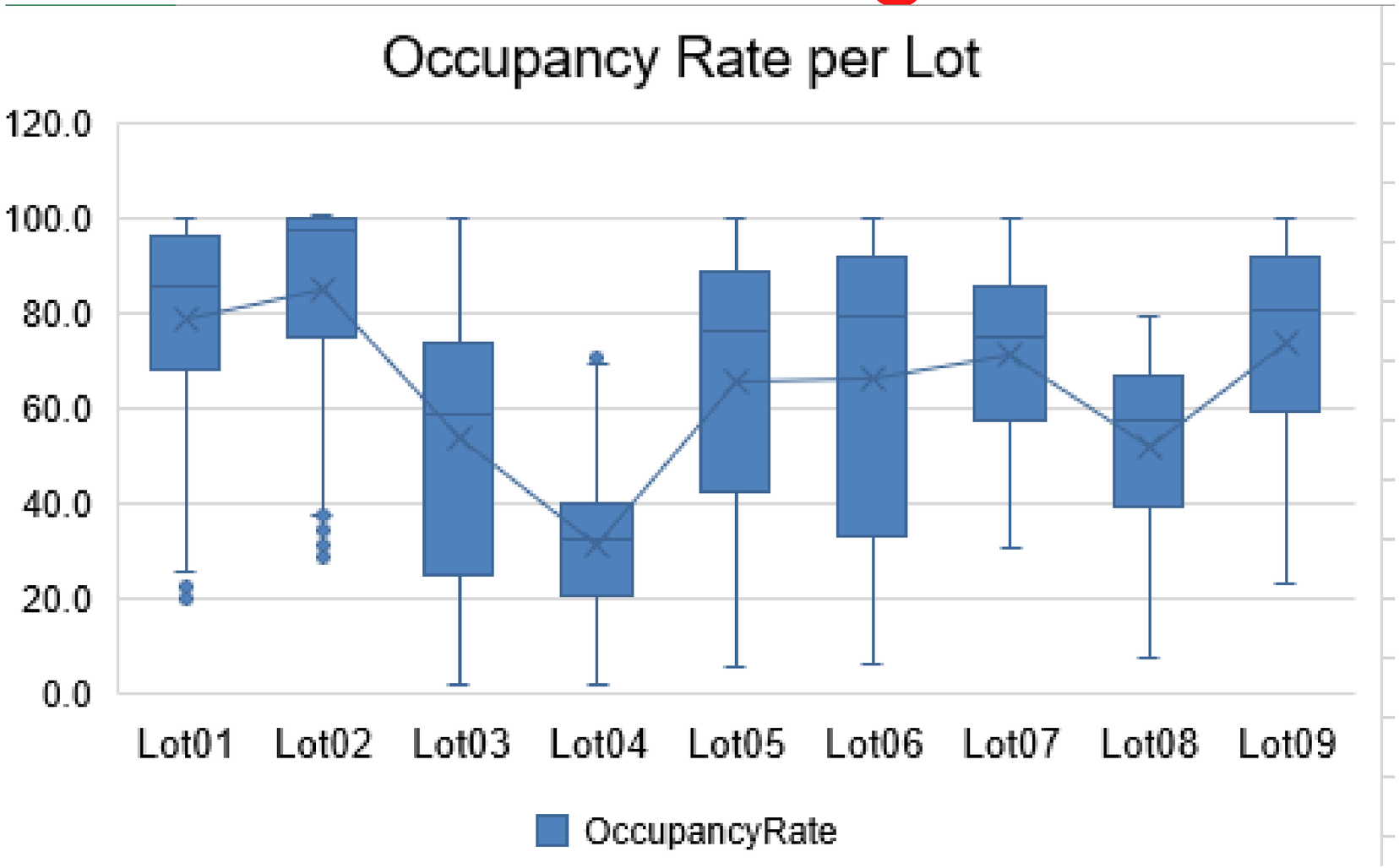
It is clear that lot 2 regularly maintains high occupancy levels, with little volatility in occupancy rates, throughout the week. This shows that there is a constant need for parking in this lot, maybe suggesting that it is well-liked by commuters, workers, or tourists.

Conversely, lots 4 and 8 have lower and more erratic occupancy rates, which suggests varying demand. There may be more parking spots available in these lots on particular days or times when they are less busy.

Underutilized Lots:

Based on the box layout, it is determined that Lots 4 and 8 are underused parking lots. These lots stand out from others since their highest quartile does not achieve 100% occupancy. This suggests that throughout the examined time, there were many occurrences of open parking spots in these lots.

Occupancy Rates for Each Parking Lot

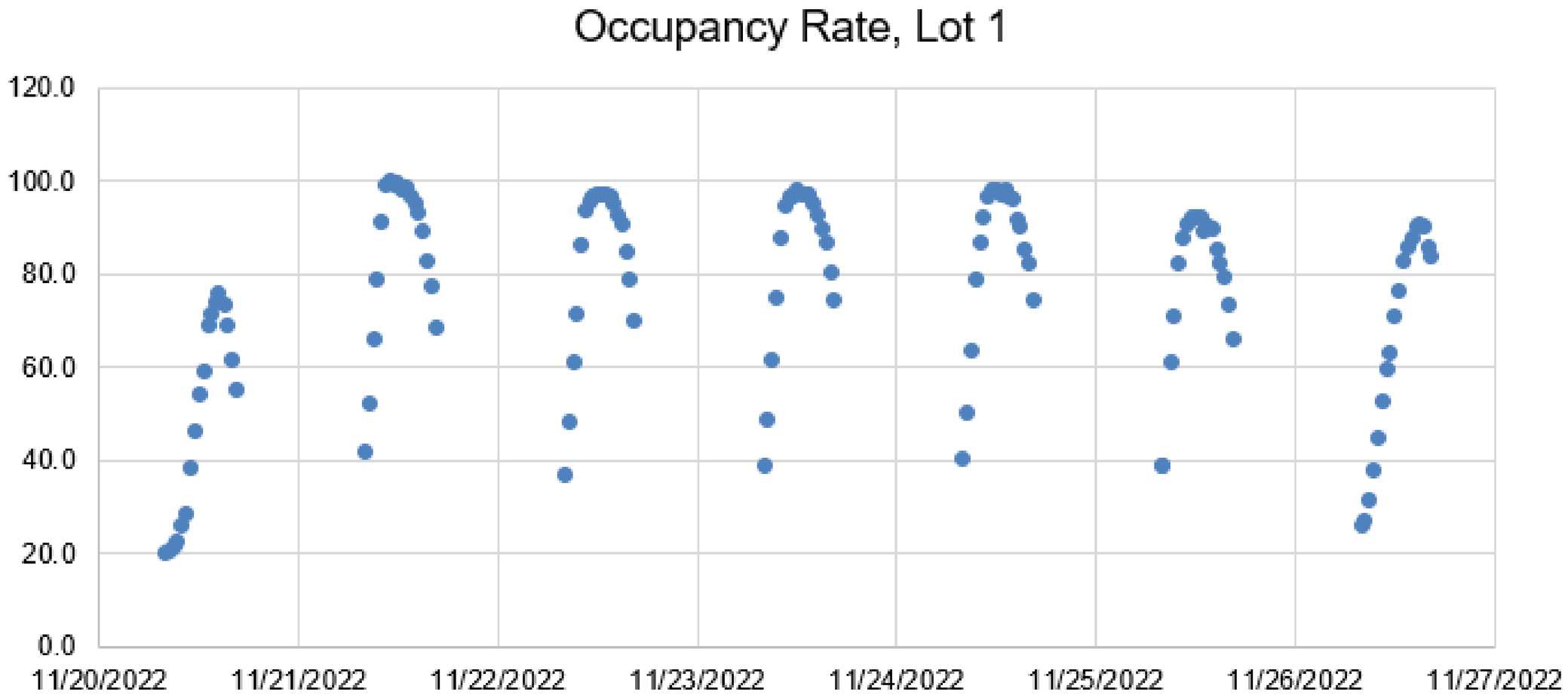


Scatter Plot Charts for Parking Lot 1

This slide shows a scatter plot chart of Parking Lot 1's occupancy rate by day of the week. The scatter plot data for Parking Lot 1 illustrates that occupancy peaks between 8:00 am and 4:00 pm during morning and afternoon rush hours. Between midnight and 5:00 am, occupancy is minimal. Drivers may schedule parking depending on time using this information. For instance, someone trying to park in Parking Lot 1 during morning rush hour may wish to try a different lot or arrive early. If someone needs to park in Parking Lot 1 overnight, they will find plenty of places and not need to arrive early.

This data may enhance city parking efficiency and ease. Drivers may save time and irritation by using real-time occupancy data to choose where and when to park. This may boost economic activity and quality of life for inhabitants and tourists.

Scatter Plot Charts for Parking Lot 1



Scatter Plot Charts for Parking Lot 2

Results

This slide presents the scatter plot chart for Parking Lot 2, which depicts the occupancy rate versus the time of day during the course of the week. The chart is broken down into each day of the week. We are able to discover the times of day with the greatest and lowest occupancy rates by examining this chart and looking at the data.

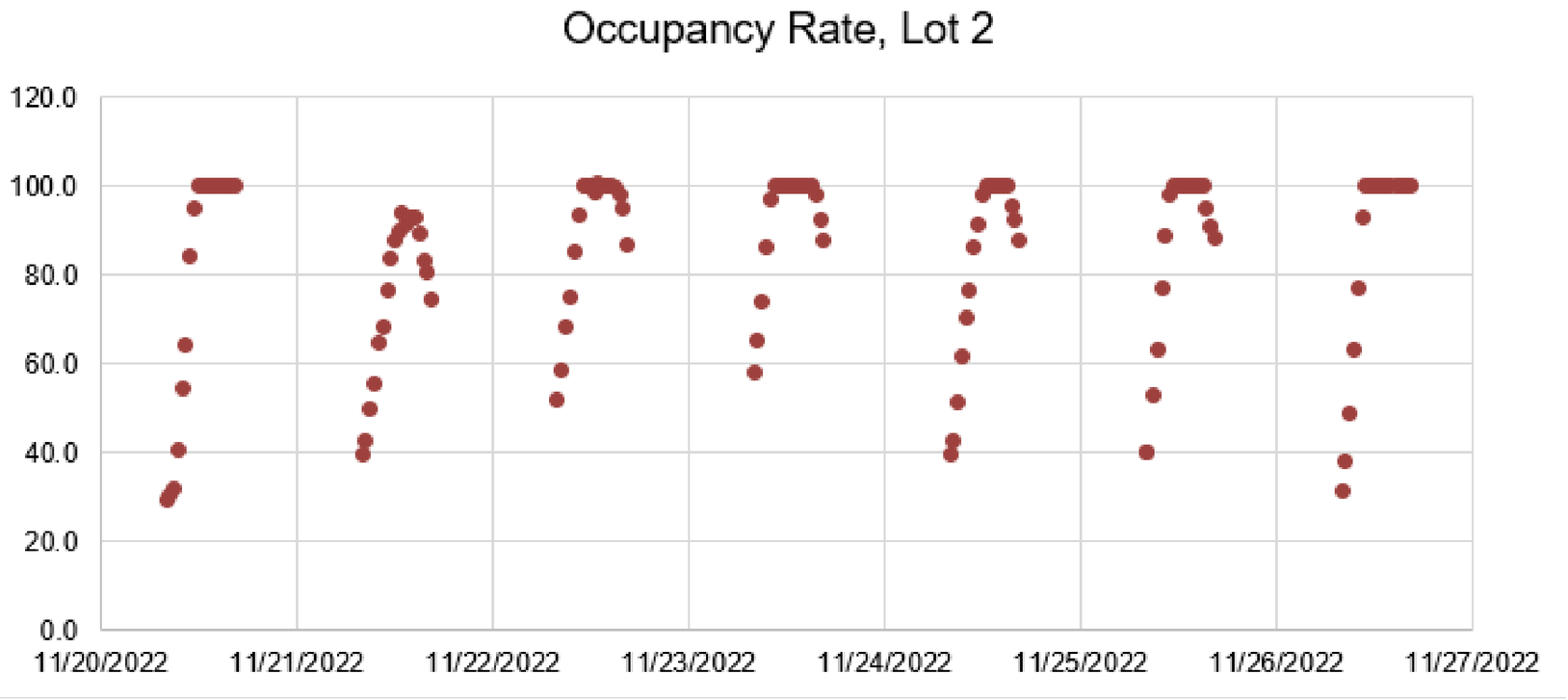
We are able to see from the graphic that there is a change in the percentage of spaces that are occupied in Parking Lot 2 throughout the course of the week. The occupancy rate was around 85% on Tuesday morning at 10:00, which was the highest percentage ever recorded for that time period. The occupancy rate was reported as being at its lowest point on Sunday about 2:00 PM, when it was just roughly 20% full.

Interpretation

This information is essential in assisting motorists in making parking plans that take into account the time of day. For instance, if a motorist is aware that Parking Lot 2 has a high occupancy rate on Tuesdays at 10:00 AM, they have the option to either park in a different lot or come earlier in the day in order to guarantee themselves a place. In addition, motorists who are aware of the low occupancy rate of Parking Lot 2 around 2:00 p.m. on Sundays have the option of parking there in order to escape the congestion that exists in the surrounding parking lots.

In general, the information presented here offers helpful insights into the manner in which Parking Lot 2 is used and enables drivers to make more educated choices about parking options.

Scatter Plot Charts for Parking Lot 2



Concept of smart cities

In order to gather and analyze data, smart cities employ information and communication technology. This helps them make better choices and enhance the quality of life for their citizens. These technologies may be used in many fields, including public safety, energy, transportation, and healthcare.

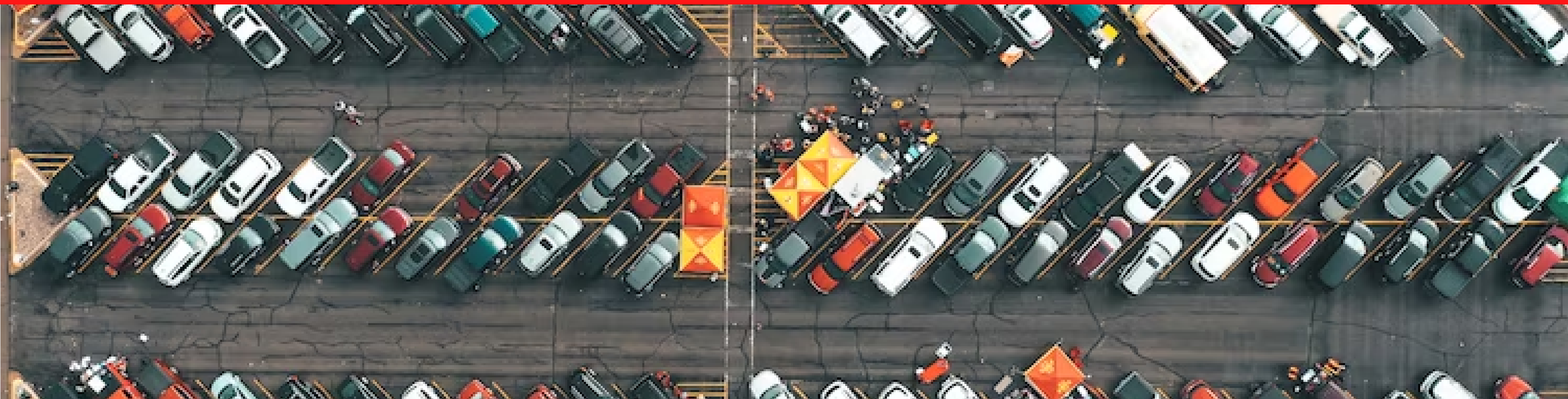
An example of how technology may be utilized to enhance urban life in the field of transportation is the smart parking software that was mentioned in the presentation. The software may assist drivers in finding available parking spots more readily, decreasing the time spent looking for parking and thereby lowering traffic congestion. This is done by gathering and analyzing data on parking space availability in real-time. This is consistent with the overarching objective of smart cities, which is to employ technology to make urban areas more sustainable and efficient.

Recommendations

Based on the study of the parking space utilization file and the possible advantages that a smart parking app may provide for the city, it is advised to spend resources in developing one. According to the data, parking spots are in great demand throughout the city, particularly during peak hours and on certain days of the week. By offering real-time information on available parking spots, a smart parking app may assist in making better use of already-existing parking spaces. This may ease traffic congestion and enhance both the quality of life for city inhabitants and tourists by making it easier for vehicles to find and secure parking places.

The suggestion is predicated on the likelihood that spending money on a smart parking software would have a positive impact on the city, including easing traffic, enhancing air quality, and making parking easier for motorists. Additionally, as more cars may park in the same spot thanks to more effective parking space utilization, it can also result in an increase in revenue for the city.

In order to handle the parking issues in the city, lessen traffic congestion, and enhance overall quality of life for locals and tourists, it is advised to invest in the resources required to design and deploy a smart parking software.



Conclusion

The problems with parking and traffic in our city may be solved by putting in place smart parking software. It improves traffic flow, cuts down on search time, and makes the best use of parking resources. Decision-making is aided by real-time data, which also improves urban development. We can increase income, build a more sustainable city, and enhance the quality of life for locals and tourists by investing in this technology.

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THANK YOU

FOR YOUR ATTENTION

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