Annual On-Street Parking Permit (AOSPP)

Sub- Python Programming SPRING

2024 -23128

By- Sravya. Vemireddy

Pavan Ganesh Reddy. Yeruva

Afrida Mehanaz. Shaik

Kushwanth Reddy. Nomula

April 8, 2024

**Abstract**

An annual on-street parking permit is a regulatory tool employed by local governments in urban areas to manage limited parking resources and enforce parking regulations. This permit allows vehicle owners to park on designated streets or zones within a specified area for a set period, usually one year. Key aspects of the permit include its association with a specific vehicle's registration and its validity within a designated geographical area. Permit holders are expected to comply with local parking regulations and pay a fee for obtaining and renewing the permit annually. The application process typically involves submitting required documents such as vehicle registration and proof of residency. This abstract provides an overview of the purpose, duration, vehicle association, cost, regulations, application process, and renewal requirements associated with annual on-street parking permits, which are managed by local parking authorities or transportation departments.

**Chapter 1**

**Introduction**

An annual on-street parking permit is a permit issued by a local government or municipality that allows a vehicle owner to park their vehicle on designated streets or zones within a specified area for a set period, usually one year. This type of permit is often used in urban areas where parking spaces are limited and parking regulations are strictly enforced.

Here are some key points about an annual on-street parking permit:

1. **Designated Area**: The permit typically allows parking within a specific zone or area designated by the local authorities. This area may be near the permit holder's residence or place of work.
2. **Duration**: The permit is valid for one year from the date of issuance. Renewal is usually required annually to continue parking in the designated area.
3. **Vehicle Registration**: The permit is often tied to a specific vehicle and its registration. The vehicle's license plate number may be recorded on the permit for identification purposes.
4. **Cost**: There is usually a fee associated with obtaining the annual permit. The cost can vary depending on the location and demand for parking in the area.
5. **Parking Regulations**: Permit holders are expected to comply with parking regulations and restrictions within the designated area. This may include observing time limits, street cleaning schedules, and other parking rules.
6. **Application Process**: To obtain an annual on-street parking permit, applicants typically need to submit an application form along with proof of vehicle registration and residency (such as a utility bill or lease agreement). The application may also require payment of the permit fee.
7. **Renewal**: Permit holders must renew their permits annually before the expiration date to continue parking legally in the designated area.

Local parking authorities or transportation departments usually manage the issuance and administration of annual on-street parking permits. Specific rules and regulations can vary depending on the city or municipality, so it's important to check with the local parking authority for detailed information and application procedures.

**Chapter 2**

**Motivation for the project:  
My team mate parking tickets + picture of parking ticket**





**Chapter 3**

**Dataset**

Dataset link : <https://data.cityofnewyork.us/Transportation/Annual-On-Street-Parking-Permit-AOSPP-/ue2f-z6i6/about_data>

**Data Provided By Department of Transportation (DOT)**

(AOSPP). These permits play a crucial role in supporting the activities of not-for-profit organizations by providing them with parking privileges while they carry out their missions. By allowing vehicles to stand and park in loading zones and at parking meters, AOSPPs help these organizations efficiently conduct their operations and serve their communities.

AOSPPs contribute to the smooth functioning of not-for-profit organizations in several ways:

1. **Facilitating Operations**: AOSPPs enable organizations to access loading zones, which are essential for loading and unloading supplies and equipment. This facilitates the smooth operation of activities such as deliveries, event setup, and transportation of goods.
2. **Supporting Outreach**: Parking privileges at meters provided by AOSPPs allow organizations to reach out to communities more effectively. Whether it's attending meetings, conducting outreach programs, or providing services, AOSPPs ensure that organizations can access parking conveniently.
3. **Enhancing Efficiency**: By reducing the time spent searching for parking or worrying about parking restrictions, AOSPPs help organizations focus on their core missions. This increased efficiency allows them to allocate more resources towards serving their communities.
4. **Promoting Accessibility**: AOSPPs contribute to making services more accessible to the public. Whether it's healthcare services, educational programs, or social services, easy access to parking facilitates the participation of community members in these activities.

Overall, AOSPPs are valuable tools that support the vital work of not-for-profit organizations. By providing parking privileges in loading zones and at parking meters, these permits enable organizations to operate efficiently, reach out to communities, and fulfill their missions effectively.

**Processing of data:**

**Data Exploration and Cleaning Workflow**

1. **Load Data**: Read your dataset into a Pandas DataFrame.
2. **Explore Basic Information**: Use **info()**, **describe()**, and **head()** to understand the structure and content of the data.
3. **Identify Missing Values**: Use **isnull().sum()** to count missing values and decide on a strategy to handle them.
4. **Visualize Data**: Plot histograms, scatter plots, or pair plots to explore relationships and distributions.
5. **Clean Data**: Handle missing values, duplicates, and data errors based on your exploratory findings.

By following these steps and using Python libraries like Pandas and visualization tools like Matplotlib and Seaborn, you can effectively explore and clean your dataset to prepare it for further analysis or modeling tasks. Adjust the specific techniques and methods based on the nA screenshot of a graph

Description automatically generatedature of your dataset and the requirements of your analysis.

A graph of blue bars

Description automatically generated with medium confidenceA pie chart with different colored circles

Description automatically generatedA graph of a number of hours distribution

Description automatically generated with medium confidenceA graph of a number of hours distribution

Description automatically generated with medium confidenceA screenshot of a graph

Description automatically generated

**Project objectives:**

Here, After analyzing all the data from the data set We can use the model to calculate the number of hours a car can park in a provided region with a zip code and also we can see how many hours a car can park in ,

-> In a region

-> In a day

-> In a whole week.

Each customer is provided with a particular permit number which allows him to access the parking entries with certain hours and here using this model we can get all the details a person can be provided with the Aospp and he can be accurate with all the timings by being aware about the areas included.

**Project Outcomes:**

* Thus , a code has been written by providing the parking permit number and now we are able to draw the details of the parking lot regarding the timings area and the specification required and we can see the Count of hours that has been granted for the user.
* Now this can be considered as an objective of the project and also it can be extended further with some applicable ideas like predicting the timings that Can be provided with the given zip code. And also we can predict the probabilities of getting a slot of parking in each day of a week.

**Future Improvements**

In the future, we can enhance parking management projects by integrating real-time data to optimize parking availability and efficiency. By leveraging real-time data sources, such as sensors and smart devices, we can dynamically determine which streets and avenues have available parking slots at any given time. This data-driven approach can enable drivers to access information about parking availability in specific locations, allowing for more informed decisions and reducing the time spent searching for parking. Additionally, real-time data can be utilized to monitor parking occupancy levels, predict peak parking demands, and optimize parking space allocation. Implementing such improvements can contribute to more effective urban planning, reduced traffic congestion, and improved overall mobility in urban areas.

**Chapter 4**

**Challenges and Solutions**

**Collaboration Issues in the Team:**

**Action:**

Clearly define positions and duties:   
Handle disagreements in a positive way:

**Resource Constraints**:

* Limited availability of resources, such as time, or personnel, can hinder project progress and limit the ability to achieve project objectives effectively.

**Action :**

* + Prioritize critical tasks
  + Optimize resource allocation:
  + Explore alternative resources:

**Unusual dataset issues :**

Editing the dataset created some issues with compiling errors and reading data

* + **Action :** Deleted certain attributes that created redundancies and compacting the dataset entries had created a solution.

**References**

1. <https://pandas.pydata.org/docs/reference/api/pandas.DataFrame.iloc.html>
2. <https://data.cityofnewyork.us/Transportation/Annual-On-Street-Parking-Permit-AOSPP-/ue2f-z6i6/about_data>
3. <https://data.ny.gov/browse/select_dataset?tags=parking>
4. <https://www.contracostalafco.org/policies/agricultural-open-space-preservation/>
5. <https://www.facebook.com/NYCDOT/posts/please-note-2020-city-parking-permits-for-people-with-disabilities-pppd-temporar/10158136683362887/>
6. <https://nycanalytics.gitbook.io/2018-nyc-opendata-examverf-report/results/department-of-transportation-dot>