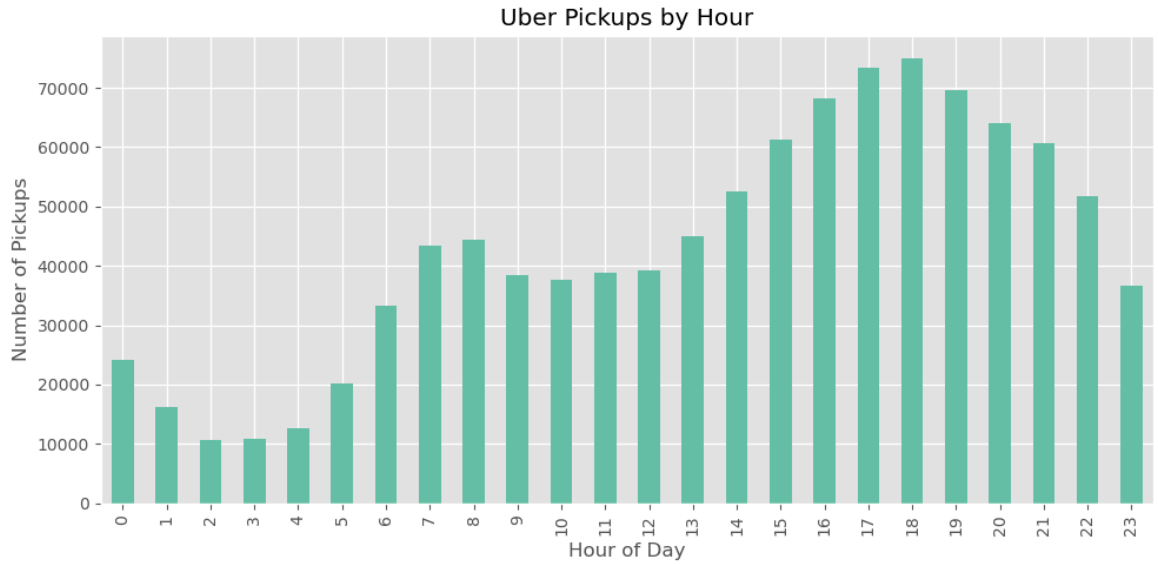
Uber pickups report for September 2014

This analysis explores Uber pickup patterns using historical trip data. The goal is to uncover behavioral and operational insights related to pickup volume, time trends, and base performance.

Data was processed using Python, SQLite, and visualized with Matplotlib and Seaborn.

🕐 1. Peak Hours: When Are Uber Pickups Most Common?

Uber pickups **peak dramatically at 18:00**, with activity nearly **2× higher than mid-day levels**. A smaller spike is visible around **08:00**, suggesting morning commutes also influence demand.



🔍 Insight:

- Demand rises steadily from 06:00 and peaks after work hours.
- Evening peaks are **more pronounced** than mornings, especially on weekdays.

💼 Business Impact:

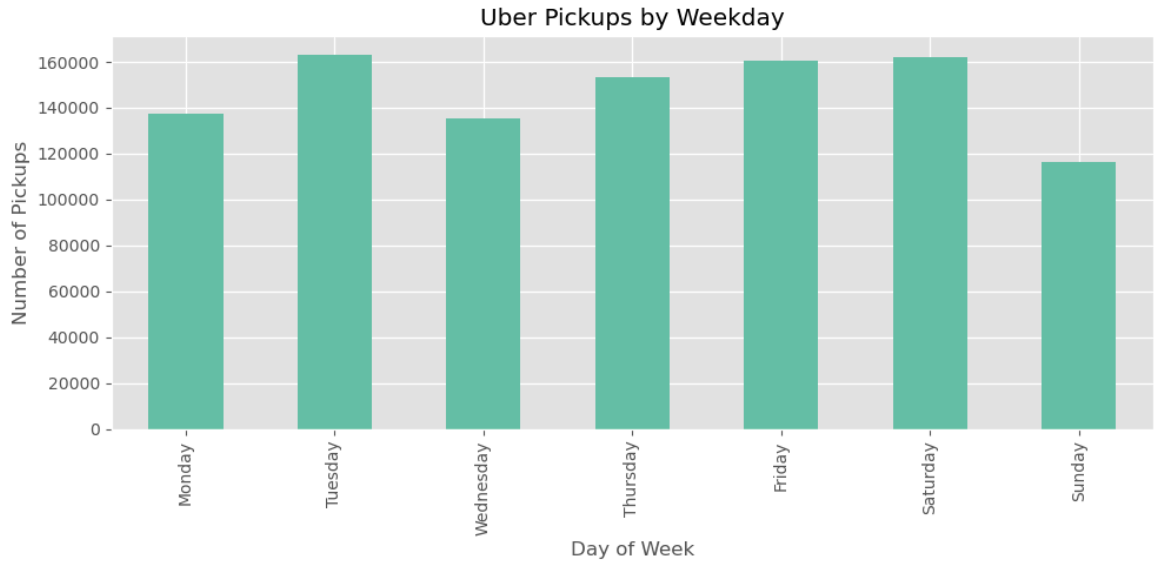
- Focus driver availability around **evening peak hours**

- Consider surge pricing or driver incentives from **17:00 to 19:00**
- Lower operational cost by reducing coverage during **low-traffic hours** (e.g., 02:00–05:00)

📅 2. Weekday vs. Weekend Demand

While Uber demand is strong throughout the week, **weekend days show slightly higher average pickups** than weekdays in this dataset.

- **Weekends averaged ~34,824 pickups/day**
- **Weekdays averaged ~34,070 pickups/day**
- **Tuesday** had the single highest pickup total, possibly linked to city events or work-related travel.
- **Weekday pickups are ~2.2% lower** than weekend pickups.



🔍 Insight:

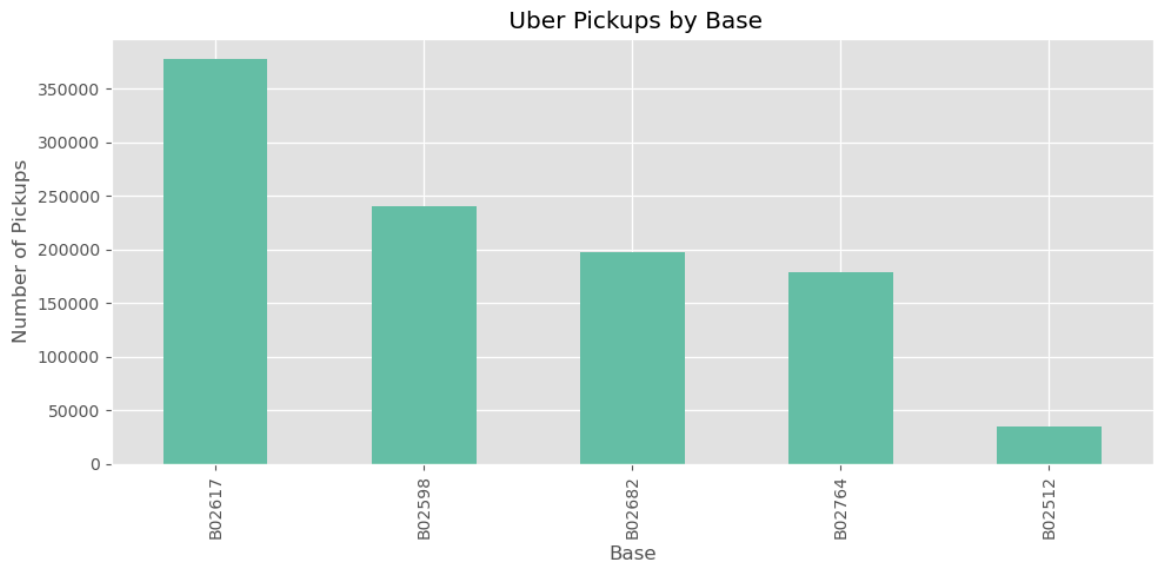
- The difference between weekdays and weekends is smaller than expected.
- Tuesdays and Fridays are particularly active, suggesting commuter or social travel peaks.
- Despite the small difference, the weekday demand is still quite substantial, indicating that weekday riders maintain a steady need for transportation.

💼 Business Impact:

- **Driver schedules** should be adjusted to ensure sufficient coverage on weekends, particularly for midday periods.
- **Surge pricing** can be tailored to account for the weekend demand boost, particularly on Sundays when people may return from short trips or late-night activities.
- Explore **marketing campaigns** targeting weekday commuters, especially Monday mornings or Friday evenings, when activity peaks at certain times.
- Monitor **Tuesdays** for event-based demand spikes.

🏢 3. Most Active Uber Bases

Among all Uber dispatch bases, **B02617** clearly dominates in total pickups — handling **over 30% more rides** than the next most active base.



🔍 Insight:

- B02617's high activity likely indicates a **densely populated service area** or **strong rider base**.
- Other bases like B02598 and B02682 follow, but with significantly fewer trips.

💼 Business Impact:

- **Pilot new services or incentives** (e.g., discounts, premium rides) through B02617 first.

- Evaluate operational performance here to **scale success to smaller bases**.
- Consider **reallocating driver coverage** toward underperforming bases with growth potential.

📈 4. Weekly Patterns and Predictability

Uber demand follows a **consistent weekly rhythm**, clearly seen in the heatmap:

- **Weekday mornings (07:00–09:00)** show strong commuter activity.
- **Friday evenings (17:00–19:00)** peak sharply, likely due to social plans and early weekend travel.
- **Weekends** show more **midday demand**, with later pickup peaks than weekdays.