Project 1-Ironhack Payments Presentation

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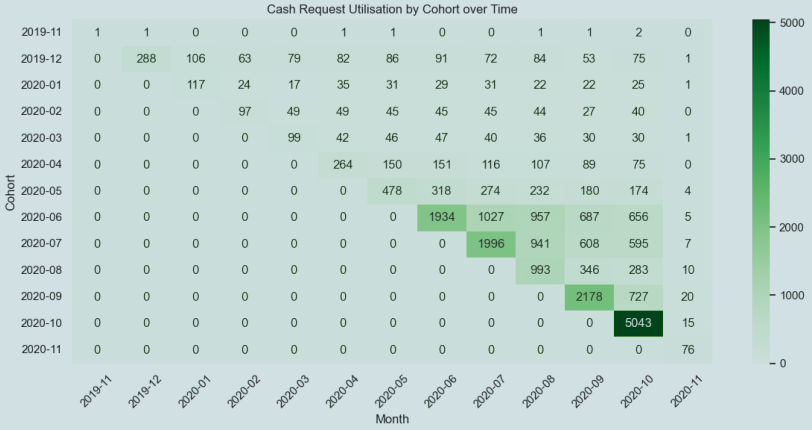
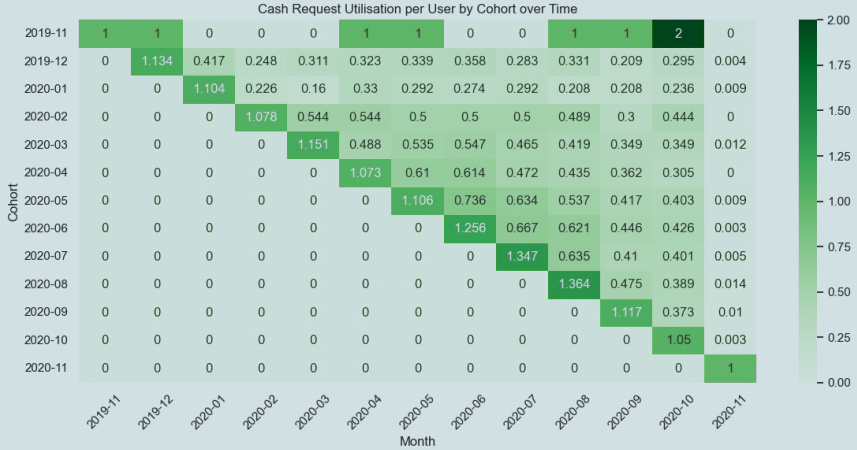
Frequency of service usage over time

Trends in absolute usage rates

- drops in absolute initial usage between cohorts 2019-12 and 2020-04 and for cohort 2020-08
- could be due to lower total number of eligible users
- overall rising initial use
- low interpretability of first and two newest cohorts



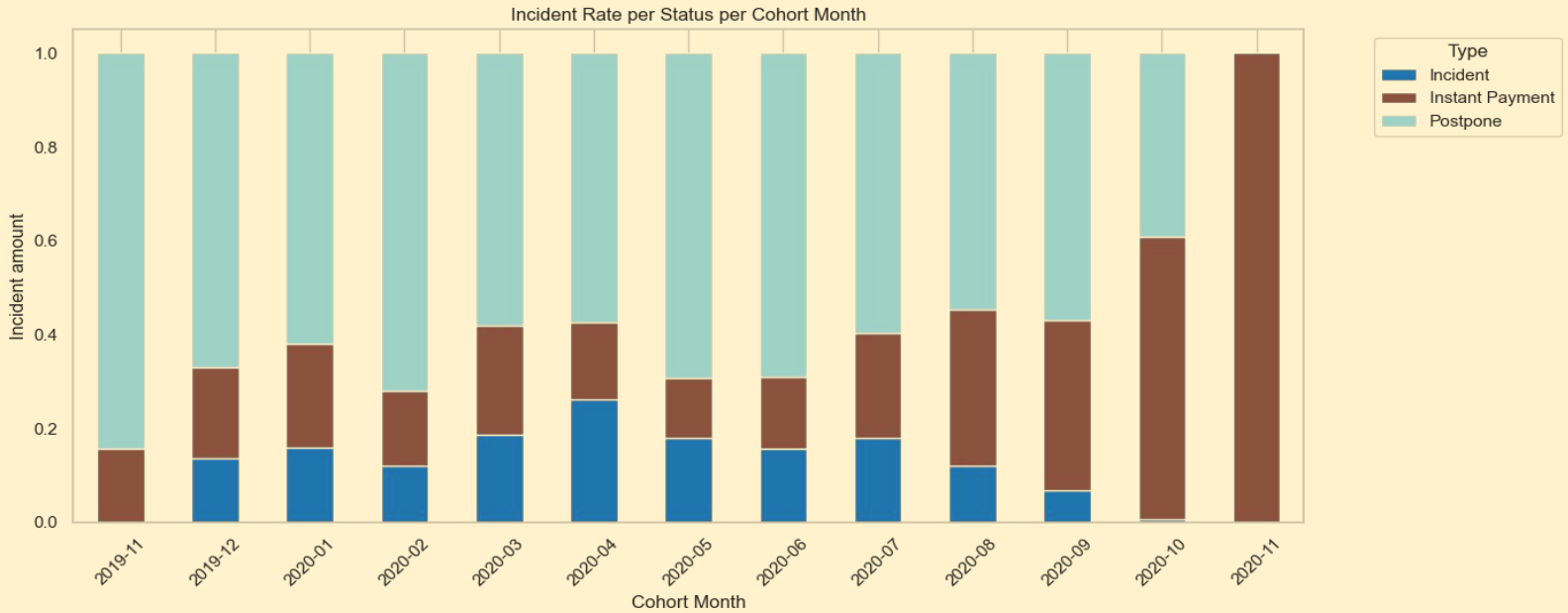


Average usage per user per cohort

- typically >1 request per user in first month
- high average use throughout for cohorts 2020-[03/05/06]

Incident Rates

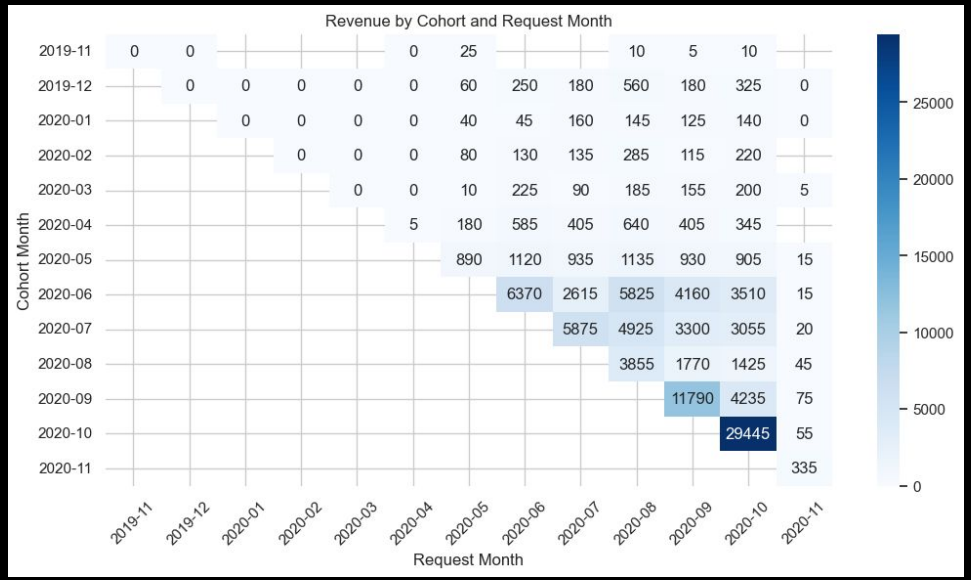
- each cash request can have additional fees.
- visual displays number of Incidents per cohort
- find problematic cohorts



Task 3: Cohort Creation and Revenue Analysis

Heatmap:

- Shows how revenue accumulates over time
- Helps to visualize retention and monetization patterns
- Most cohorts generate stronger early revenue
- 0's = cohort was active but generated no revenue that month
- Future steps:
  a. Why do some cohorts drop off faster?
  b. Why is revenue delayed until 2020-04?




```python
#Creating Cohorts (users first requrest month) and Request Month (month of each txn)
cashRequest_cp['created_month'] = cashRequest_cp['created_at'].dt.to_period('M')
cashRequest_cp['cohort'] = (
    cashRequest_cp
    .groupby('user_id')['created_month']
    .transform('min')
cashRequest_cp["request_month"] = cashRequest_cp["created_at"].dt.to_period("M")

##Revenue Merge & Grouping
#Merged Revenue Data:
fees_cp = fees[["cash_request_id", "total_amount"]].copy()
fees_cp = fees_cp.rename(columns={"cash_request_id": "id"})
cashRequest_cp = cashRequest_cp.merge(fees_cp, on="id", how="left")
#Revenue Over Time:
revenue_by_cohort = (
    cashRequest_cp
    .groupby(['cohort', 'request_month'])['total_amount']
    .sum()
    .reset_index()
)
#Visualization: Pivoted Matrix and Heatmap
revenue_pivot = revenue_by_cohort.pivot(index="cohort", columns="request_month", values="total_amount").fillna(0)
plt.figure(figsize=(12, 6))
sns.heatmap(revenue_pivot, cmap="Blues", annot=True, fmt=".0f")
plt.title("Revenue by Cohort and Request Month")
plt.ylabel("Cohort Month")
plt.xlabel("Request Month")
plt.show()
```

Retention Rate

- rate of retention for each request month by cohort
- How well do we retain users that onboarded in a specific month?