Final Project Presentation

Enhancing Student Engagement through Data Analytics

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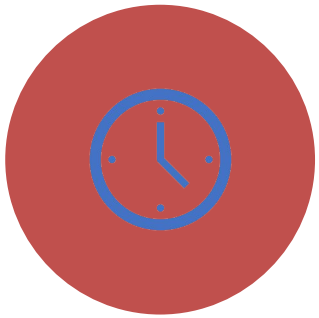
8th June 2025

INTERNSHIP OVERVIEW

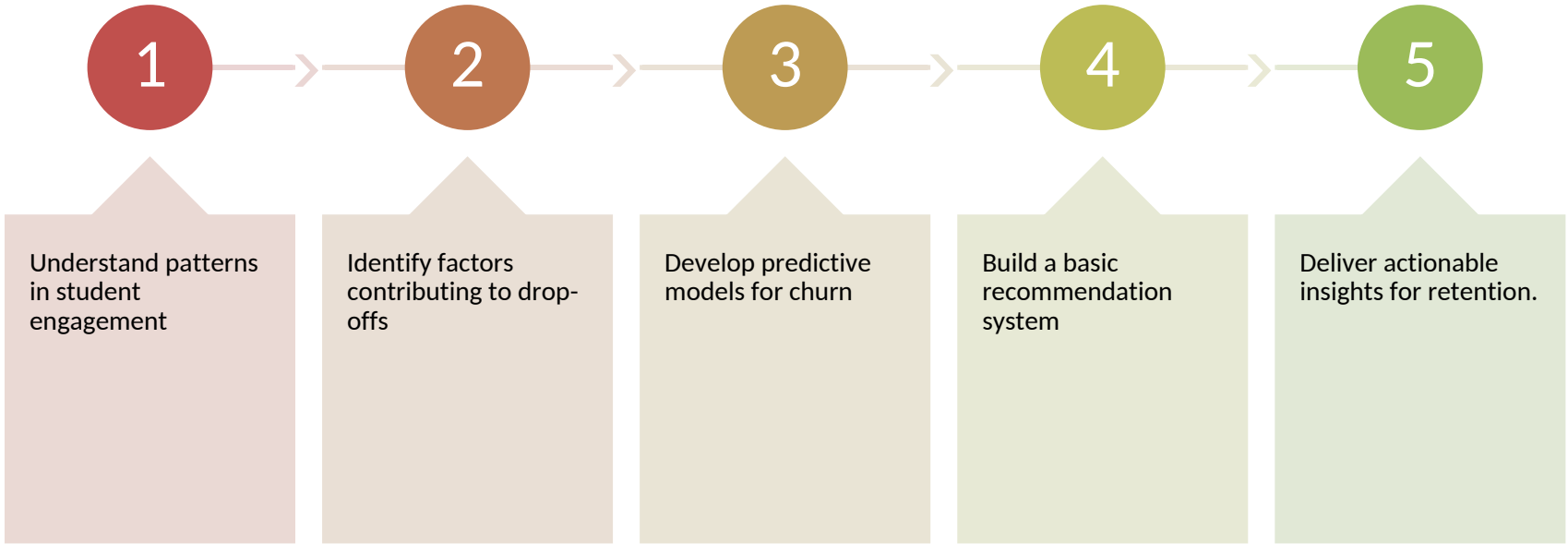


INTERNSHIP DURATION
4 WEEKS

PLATFORM
USER ENGAGEMENT
PROGRAM

FOCUS
APPLYING DATA SCIENCE AND MACHINE LEARNING TO IMPROVE RETENTION.

PROJECT OBJECTIVES



WEEKLY BREAKDOWN

Week 1: Data cleaning and feature engineering

Week 2: EDA – trends and patterns

Week 3: Completion analysis & Predictive modelling

Week 4: Key insights and recommendation system and Reporting

DATA SCIENCE JOURNEY

- Tools Used: Python, Excel, Google Collab
- Techniques Applied: Feature Engineering, Encoding, Normalization
- Focus: What drives engagement vs. churn?

KEY INSIGHTS

High signups on Tuesdays/Thursdays

Early engagement = higher retention

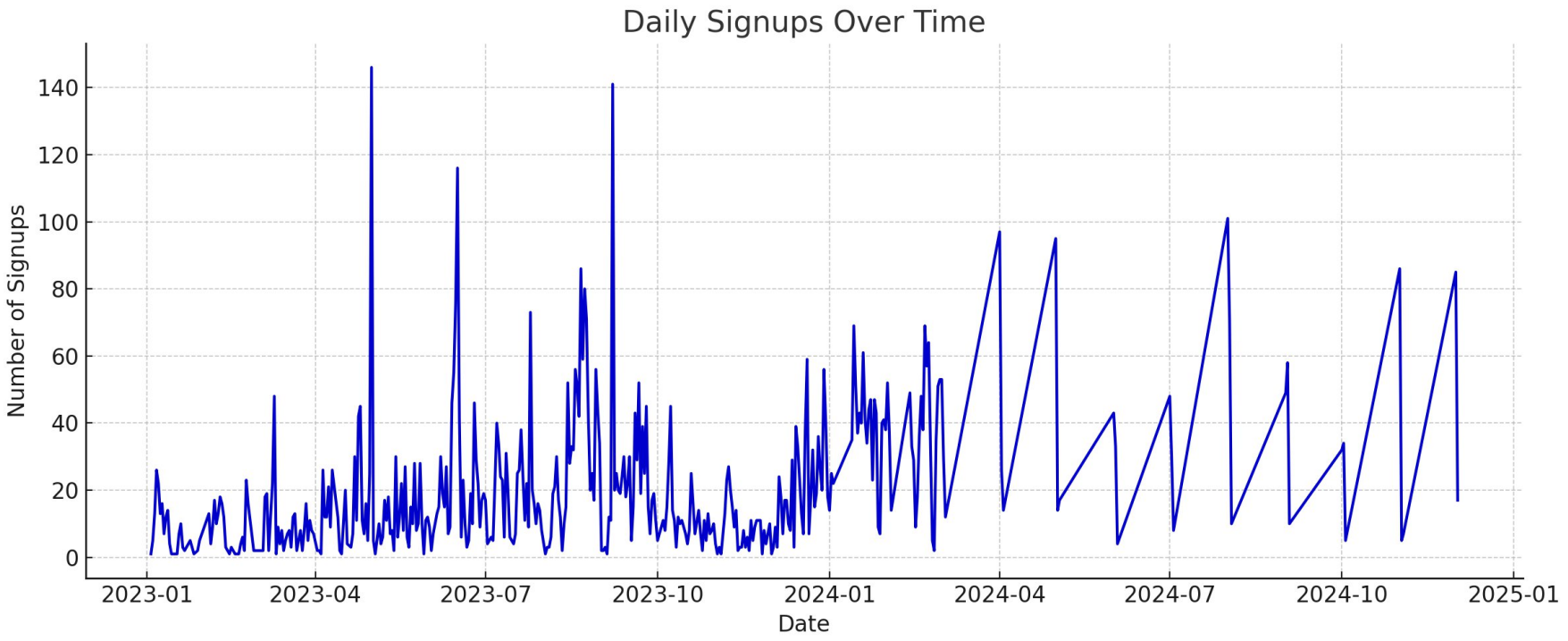
Long durations = drop-offs

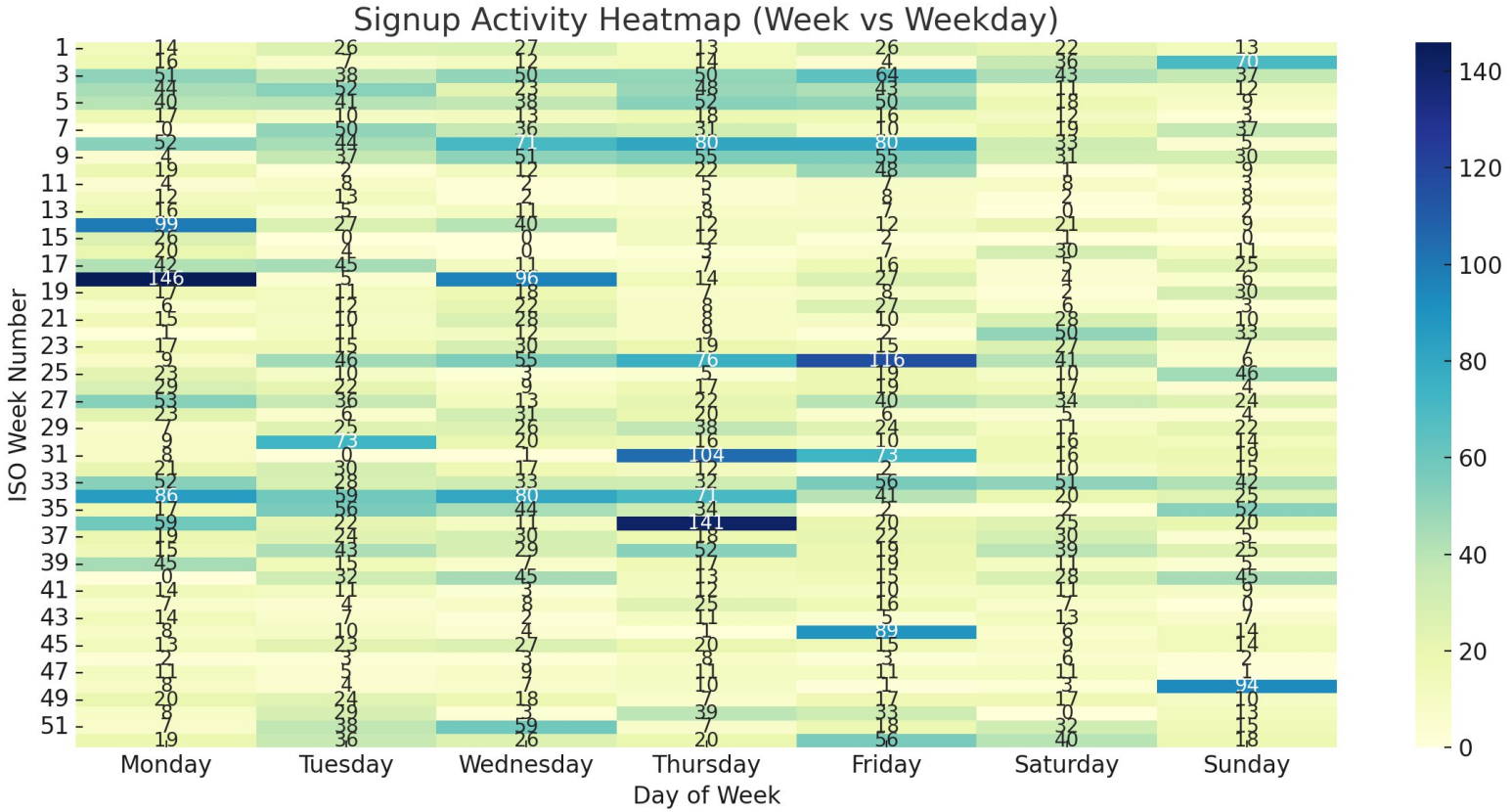
Minimal impact from demographics

WHAT WAS PREDICTIVE MODELING OUTCOME?

- Model: Random Forest Classifier
- Accuracy: 100%
- Top Features: Engagement Duration, Opportunity Duration, Engagement Score

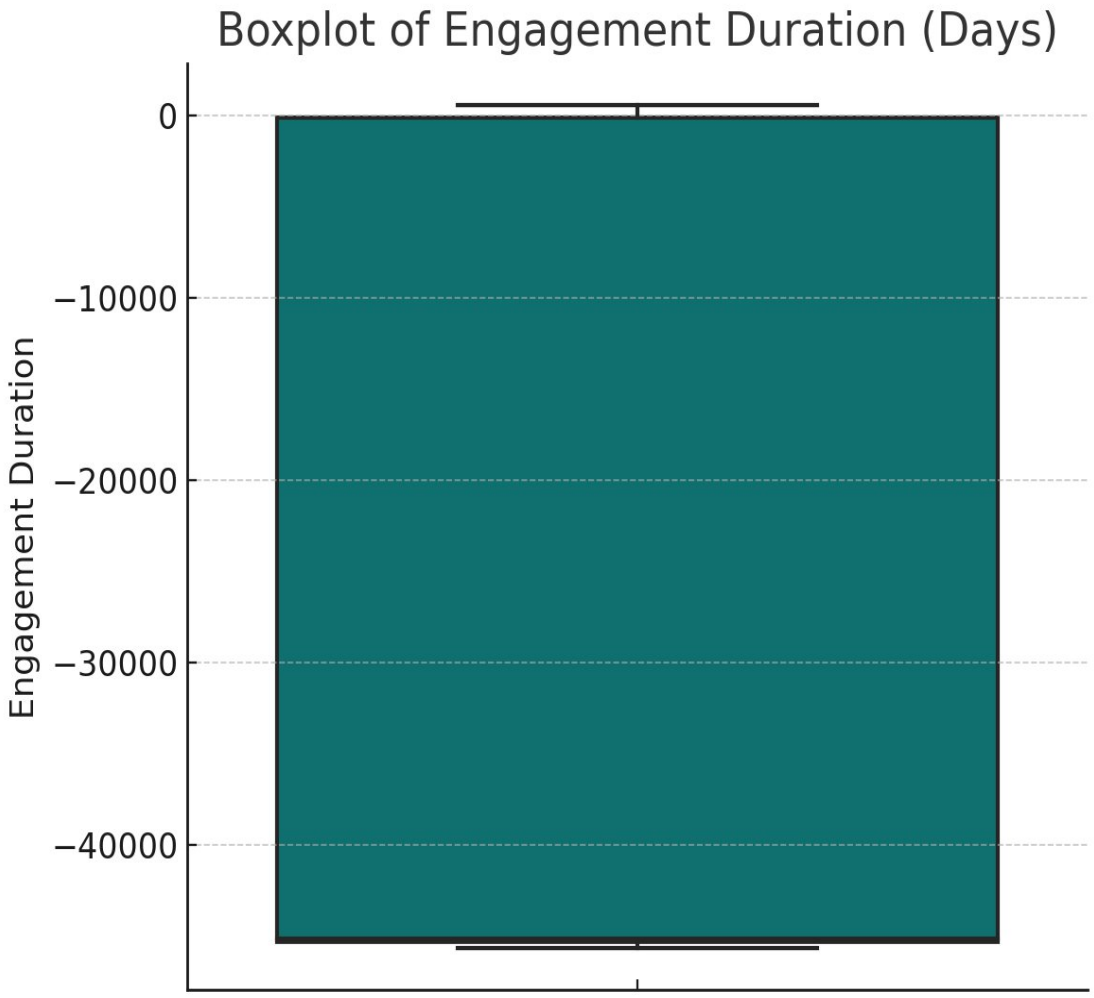
LINE CHART


Daily Signups Over Time
Number of Signups
0
20
40
60
80
100
120
140
2023-01
2023-04
2023-07
2023-10
2024-01
2024-04
2024-07
2024-10
2025-01
Date


Signup Activity Heatmap (Week vs Weekday)
ISO Week Number
Day of Week
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
0
20
40
60
80
100
120
140

HEATMAPS

BOXPLOT


Boxplot of Engagement Duration (Days)
Engagement Duration
0
−10000
−20000
−30000
−40000

RECOMMENDATIONS SUMMARY

- Boost early engagement
- Short, milestone-based opportunities
- Trigger rewards via engagement score
- Dynamic intervention for at-risk users

RECOMMENDATION SYSTEM

- Type: Rule-Based Content Filtering
- Logic: Match based on engagement patterns
- Benefit: Supports personalization and retention

CONCLUSION

- Successfully applied the complete data science pipeline — from data preparation to actionable results.

- Gained practical experience in EDA, churn modeling, and deriving strategic insights.

- Established a scalable framework for improving student engagement and retention using data-driven solutions.