**Milestone 2 Report (Week 3 & Week 4)**

**Project Title: Optimizing IT Support Team Performance Using Analytics (Supportlytics)**

**Intern Role:** Data Visualization Intern – Infosys Springboard
**Milestone Duration:** Week 3 & Week 4

**Milestone Objective**

To analyze IT support ticket data to identify patterns, trends, and similarities, and to group tickets into meaningful clusters that support performance optimization and decision-making.

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**Week 3: Exploratory Data Analysis (EDA)**

**Objective**

To understand ticket behavior, workload distribution, and complexity using visual analytics.

**Work Performed**

- Analyzed ticket distribution by **type, priority, and category**
- Studied **priority vs ticket type** and **priority vs urgency**
- Examined **ticket complexity** using description length and tag count
- Used bar charts, heatmaps, histograms, and box plots for visualization

**Key Insights**

- Medium-priority tickets dominate overall workload
- Incidents contribute most to high-priority tickets
- Ticket complexity varies significantly, with a few high-detail outliers
- Product and technical support issues are major contributors

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**Week 4: Similarity & Cluster Analysis**

**Objective**

To group similar IT support tickets and interpret recurring issue patterns.

**Work Performed**

- Selected engineered features representing complexity and urgency

- Scaled data using **StandardScaler**
- Identified optimal clusters using the **Elbow Method**
- Applied **K-Means clustering (K = 6)**
- Visualized clusters using **PCA**
- Interpreted each cluster based on priority, urgency, and issue type

**Key Insights**

- Six distinct clusters represent different ticket patterns
- Most tickets fall into routine and recurring issue clusters
- Urgent and high-effort tickets are isolated into specific clusters
- Clustering supports targeted resource allocation

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**Tools & Technologies**

Python, Pandas, NumPy, Matplotlib, Seaborn, Google Colab

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**Milestone Outcome**

Milestone 2 successfully uncovered meaningful patterns in IT support tickets through EDA and clustering. The results provide a strong analytical foundation for performance evaluation, optimization strategies, and dashboard development in subsequent phases.