KAGGLE-GYM-DATA

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1. Motivation and Goal

Motivation: Fitness is highly individual, influenced by factors such as age, gender, and experience. Personalized workout plans can help people achieve better results.

Goal: Develop data-driven insights to optimize workout plans for different fitness goals and demographics, including calorie burning, fat reduction, and recovery needs.

2. Approach

We preprocessed and normalized the data to ensure consistency and suitability for clustering and visualization.

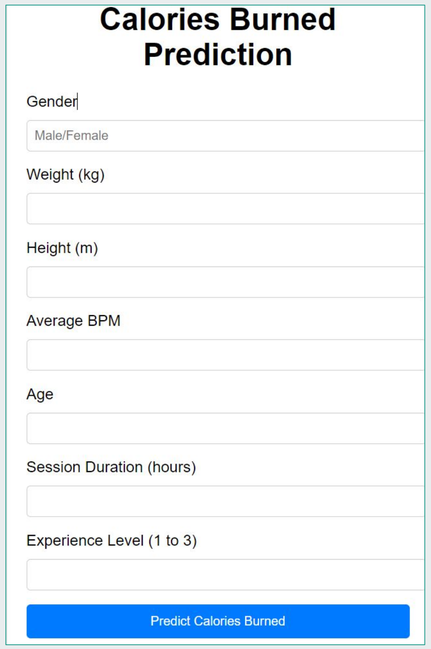
Using KMeans clustering, we grouped users based on workout type, frequency, and calories burned, aiming to identify behavioral patterns.

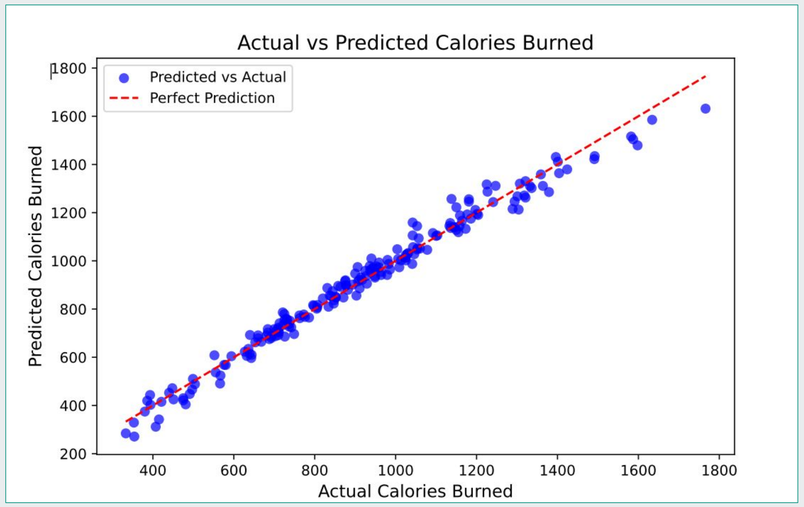
Visualizations, including heatmaps, bar plots, and scatter plots, were employed to explore relationships between workout types, experience levels, and fitness goals.

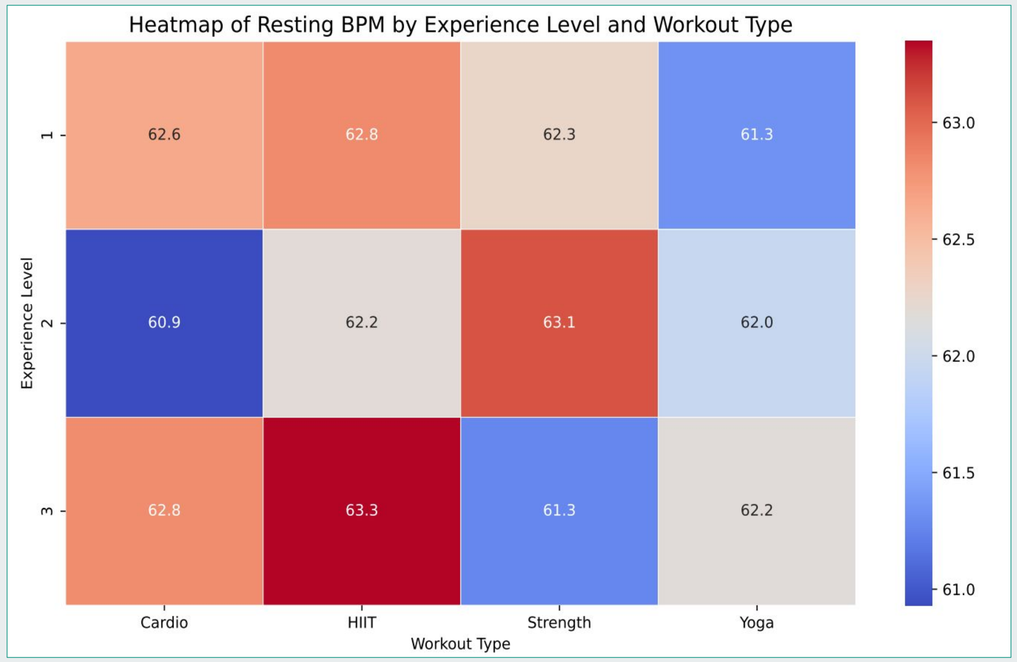
This approach also allowed us to evaluate trends in workout habits and recovery needs while identifying the limitations of synthetic data in capturing real-world patterns effectively.

3. Data

The creator of the dataset claimed on Kaggle that this dataset accurately represents real-world data and provides a detailed overview of gym members' exercise routines, physical attributes, and fitness metrics. It contains 973 samples of gym data







4. Conclusion

Unfortunately, the dataset was discovered to be too artificial, making it challenging to identify meaningful correlations.

Despite this, exploratory data analysis and visualization techniques were applied to uncover any potential patterns.

Less experienced people primarily engaged in cardio workouts, whereas more experienced members shifted their focus toward strength training.

We successfully developed an HTML application capable of accurately calculating a person's calorie expenditure