Data Science Work Prompt

One of the biggest aspects of the Xtern program is showcasing the cutting-edge technology and innovation our state has to offer. Indiana is not only home to a rich racing heritage, but it's also becoming a hub for autonomous vehicle technology. TechPoint has developed an application that not only enhances the spectator experience but also monetizes and promotes autonomous racing to the public. You will be asked to help solve various challenges as it relates to launching an immerse fan experience within the app, VeloCityX.

VelocityX is focused on creating an immersive spectator experience that monetizes and promotes the world autonomous racing. Here are some features of the app.

Immersive Fan Experience

During major racing events, VeloCityX offers "Live 360" coverage. Using mobile devices, fans can experience races from multiple angles, including cockpit views, aerial drones. Live chats and forums allow fans to discuss races in real-time.

Interactive Fan Engagement

For interactive fan engagement, VelocityX introduces "Fan challenges" users can predict race outcomes, such as which vehicle will complete the most laps without recharge or which team will achieve the fastest pit stop. These challenges are gamified and allow fans to earn points and rewards for accurate predictions.

Monetization Strategies

VeloCityX includes "Virtual Merchandise and Sponsorship Integration" Fans can purchase virtual merchandise such as team jerseys, vehicle skins, and exclusive digital collectibles. The app offers sponsorship opportunities where brands can sponsor race events or place ads to reach target audiences.

Your Task

In the next section, you will be given your corresponding responsibilities for the development of VeloCityX to expand the reach of autonomous racing. Read each task carefully and ensure you submit your work by the deadline!

Disclaimer: The above description is fictional. The TechPoint team does not have an app and is not using your work sample assessment to finalize features of it. Any work completed will be used for the application to the Xtern internship.

Data Science

The future of sports is here, and it's being driven by cutting-edge autonomous vehicle technology. As part of the ongoing innovation in fan engagement, the VeloCityX app has emerged as a powerful platform for enhancing the spectator experience during major racing events. With "Live 360" coverage, interactive fan challenges, and digital merchandise, the app engages fans in real-time and offers new ways to experience the excitement of racing.

Your mission as part of the Data Science team is to use data to improve fan engagement and provide insights that will drive monetization strategies for VeloCityX. You will explore user interaction data to draw insights on fan behavior and offer recommendations to optimize fan challenges, merchandise sales, and sponsorship integration.

Your Task

Data Collection:

You will be provided with a CSV file that contains sample data on user interactions within the VeloCityX app. This data includes details like:

- **User ID**
- **Fan challenges completed**
- **Predictive accuracy in challenges**
- **Virtual merchandise purchases**
- **Sponsorship interactions (ad views, click-through rates)**
- **Time spent on "Live 360" coverage**
- **Real-time chat activity**

Data Analysis & Cleaning:

- **Clean and organize the data into a usable format.**
- **Investigate trends, including: Which users are most likely to purchase virtual merchandise? How do user activities during race events correlate with their merchandise purchases and sponsorship interaction?**
- **Apply clustering, predictive modeling, or any other relevant techniques to identify key insights about user behavior.**

Visualization:

- **Create data visualizations to showcase analysis.**

Deliverables:

- **Upload a Jupyter Notebook with your cleaned dataset, analysis, and insights to Github or Google Colab. Provide link to Github or Google Colab.**
- **Include visualizations that clearly communicate your findings.**
- **Propose a new fan challenge based on your analysis, with predicted outcomes for engagement and monetization.**