Being able to forecast user activity is a universal data science problem. In the sportsbetting business, it has many applications in risk, operations, marketing, and product.

You have been given a dataset with the following columns. The dataset includes all bets placed between Dec 1, 2023 and Nov 30, 2024 on basketball.

* Bet\_placement\_hour: the day and hour the bet was placed
* eventId: unique identifier of a sporting event
* eventName: name of the sporting event
* eventStartDate: the start date and time of the sporting event. Keep in mind that bets can be placed after the event start (while an event is ongoing and live)
* Event\_country: the country in which the event is occurring. Sometimes this field is populated with the league instead
* League: the league the sporting event is part of
* Number\_of\_bets: number of sports bets placed by LeoVegas customers
* total\_turn\_over\_EUR: total amount of money bet by LeoVegas customers, in euros

Define the prediction target and explain why you believe this is a relevant target to predict, then illustrate your workflow of creating a predictive model that you would be comfortable sharing with a hypothetical stakeholder. Feel free to use any tools and packages that you consider appropriate for the job.

Feel free to use any open-source packages you consider appropriate. In addition, the purpose of the task is not to test your domain-specific knowledge (the sportsbook industry) but your knowledge of machine learning and related disciplines, which is domain agnostic.

This prompt is intentionally vague - we are interested in testing your creativity, problem solving, and data manipulation skills. The idea is not to produce a production-ready model (we won’t even run the code!), but rather to demonstrate how you would go about giving it a first attempt.

Housekeeping notes:

* Please return the assignment within 72 hours of receiving it, as well as any supporting code, queries, files etc. that you used to complete it.
* We recommend spending no more than 3-4 hours on the assignment. Remember we are not looking for polish, we are looking to evaluate your approach and thinking!
* We understand you are on a time constraint - implement what you consider are the key components, and be ready to discuss in the next interview what you would like to do further if given more time.
* Should the team decide to move forward to the next interview, be prepared to spend some time in the next interview presenting your assignment and then answer questions on it afterwards
* Please reach out to [grant.xu@leovegas.com](mailto:grant.xu@leovegas.com) with any clarifications or questions you may have.