

Scenario

The data team at Waze is more than halfway through their project for developing a machine learning model to predict user churn. Earlier, you completed a project proposal, used Python to explore and analyze Waze's user data, created data visualizations, and conducted a hypothesis test. Now, leadership wants your team to build a regression model to predict user churn based on a variety of variables.

You check your inbox and discover a new email from Ursula Sayo, the Operations Manager at Waze. Ursula asks your team about the details of the regression model. You also notice two follow-up emails from your supervisor, May Santner. The first email is a response to Ursula, and says that the team will build a binomial logistic regression model. In her second email, May asks you to help build the model and prepare an executive summary to share your results.

Note: Team member names used in this workplace scenario are fictional and are not representative of Waze.

Email from Ursula Sayo, Operations Manager

Subject: Details on Regression Model

From: "Ursula Sayo," Ursula@waze

Cc: "Harriet Hadzic," Harriet@waze; "Chidi Ga," Chidi@waze; "Sylvester Esperanza," Sylvester@Waze; "May Santner," May@waze

Hello data team,

I really appreciate your work, and thanks for the explanation of the next phase of the algorithm creation.

I was hoping to get a bit more detail on regression. Will you be applying a linear or logistic regression model? It wasn't clear in the meeting, and I want to align on expectations.

Thank you,

Ursula Sayo

Operations Manager

Waze

Email from May Santner, Data Analysis Manager

Subject: RE: Details on Regression Model

From: "May Santner," May@waze

Cc: "Harriet Hadzic," Harriet@waze; "Chidi Ga," Chidi@waze; "Sylvester Esperanza," Sylvester@Waze; "Ursula Sayo," Ursula@waze

Thank you for your email.

Apologies that the details were not made clear in our meeting.

To answer your question, we will build a binomial logistic regression model. Because we want to predict user churn, the binomial logistic regression model will be our confirmation for how best to proceed with the ML algorithm in the final phase of the project.

Our team will be working on getting you the results of our analysis this week.

Feel free to reach out with additional questions.

Many thanks,

May Santner

Data Analysis Manager

Waze

Email from May Santner, Data Analysis Manager

Subject: RE: Details on Regression Model

From: "May Santner," May@waze

Cc: "Chidi Ga," Chidi@waze

Hello team!

Would you two mind completing the following?

Build a binomial logistic regression model in a code notebook

Write an executive summary of your results

I'd appreciate a chance to review your work before you send it over to Ursula, but write the summary as if you're addressing the leadership team.

Best regards,

May Santner

Data Analysis Manager

Waze

Project background

Waze's data team is working on the churn project. The following tasks are needed at this stage of the project:

- Determine the correct modeling approach
- Build a regression model
- Finish checking model assumptions
- Evaluate the model
- Interpret model results and summarize findings for cross-departmental stakeholders within Waze

Your assignment

You will create a regression model for the churn project. You'll determine the type of regression model that is needed and develop one using Waze's churn project data.

Specific project deliverables

With this end-of-course project, you will gain valuable practice and apply your new skills as you complete the following:

- Complete the questions in the Course 5 PACE strategy document
- Answer the questions in the Jupyter notebook project file
- Build a binomial logistic regression model
- Create an executive summary to share your results

Good luck with this project! Waze looks forward to seeing how you communicate your creative work and approach problem-solving!

