REPORT

1) Summary of Exploration:
   You explored user engagement data to identify adopted users, defined as users who logged into the product on three separate days within a seven-day period. This analysis aimed to understand user behavior and factors influencing user adoption.

2) Preprocessing Steps:
   - Checked and handled missing values in the last_session_creation_time and invited_by_user_id columns.
   - Converted last_session_creation_time to datetime format.
   - Used rolling window functions to identify active users.
   - Merged user engagement data with user information.

3) Feature Engineering:
   - Created a binary label adopted_user based on user engagement criteria.
   - Extracted useful information from the email variable.
   - Calculated days_since_creation to measure account age.

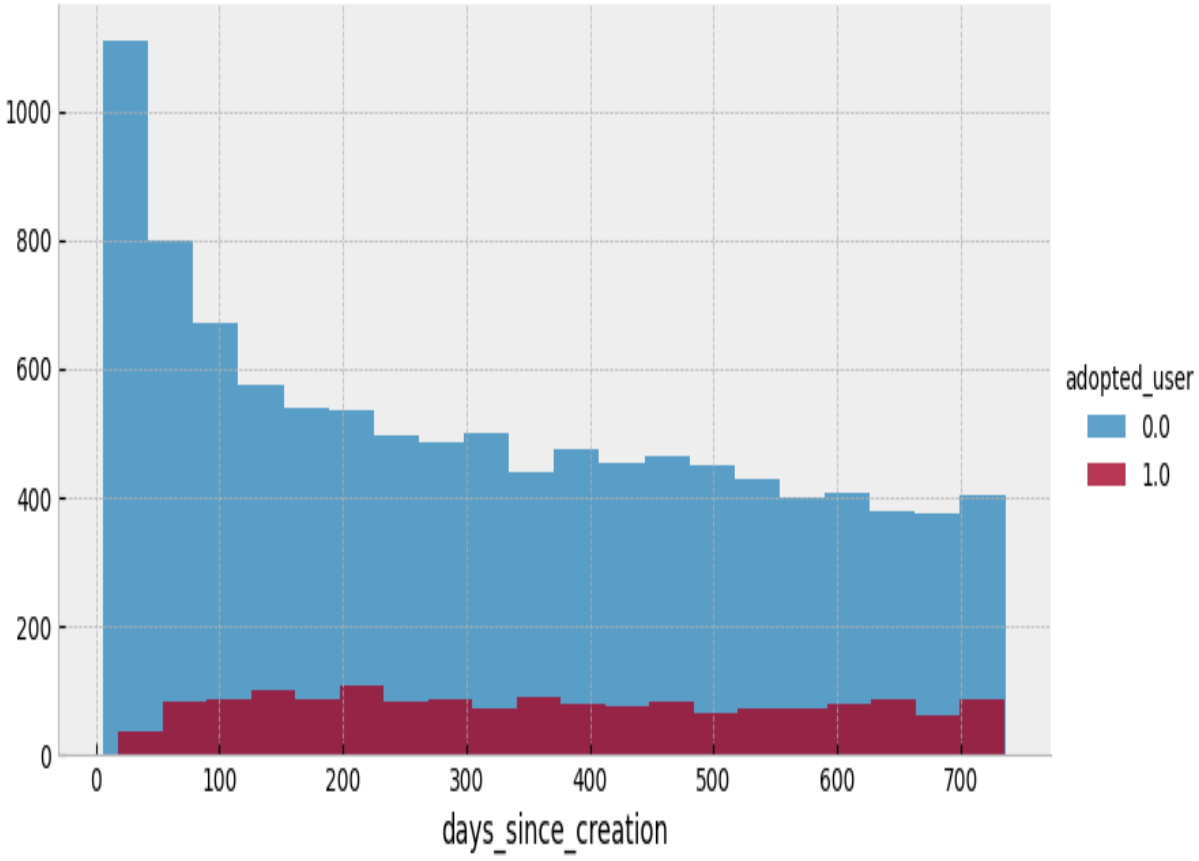
4) Model Selection:

Applied Random Forest Classifier to predict adopted users due to its ability to handle unbalanced data and provide feature importance.

5) Conclusion:

- The analysis identified key features influencing user adoption, such as account age (days_since_creation), organization ID (org_id), and user invitation status (invited_by_user_id).
- The Random Forest model showed promising results in predicting adopted users, with an emphasis on feature importance.

6) Graphs ,Figures :



We can see that the adopted_user class is pretty unbalanced because only about 13% of the total 12000 users are adopted.