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Ushbu bu loyihani qilishdan maqsad **XGBoost**, , **Decision Tree Classifier** modellar orqali narsalarni savdo rastalarida sotilishi korib chiqish va r^2 score va mean squared error yordamida baxolashdan iborat boldi

Qilingan asosiy bosqichlar

- 1)Tushib qolgan malumotlarni toldirish
- 3)Label Encoding orqali categoricaldan numericalga otkazish
- 3)Plotly express orqali Outputimizni Input bilan aloqasini korish
- 4)Texnika yordamida Boosting,Bagging,Stacking, va Blending
- 5) Hyperparameter tuning qilish(GridSearchCV)
- 6)Scaling qilib r^2 scoreni oshirish va mse ni tushirish

Olingan Natijalar

XGBoost

Mean Squared Error: 1147.2599334444108

R2 Score: 0.5300933964932245

Boosting texnika

boosting_accuracy : 1381201.754366009

Bagging texnika

R2 Score: 0.5575222067467567

Mean Squared Error: 1239377.434903505

Stacking texnika

Stacking R²: 0.48 Stacking

MSE: 1466971.99

Blending texnika

Blendingg R²: 0.48

Blending MSE: 1466064.37

GreedSearchCV

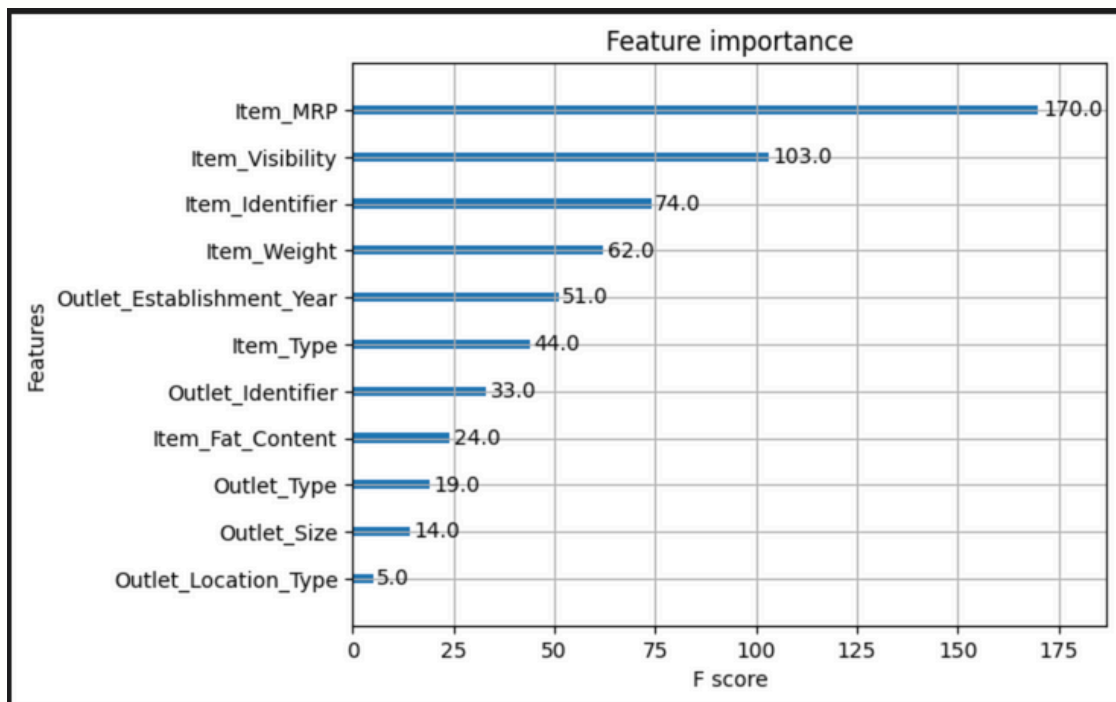
Best Model mse: 1243011.10

Best Model R²: 0.59

Scaling

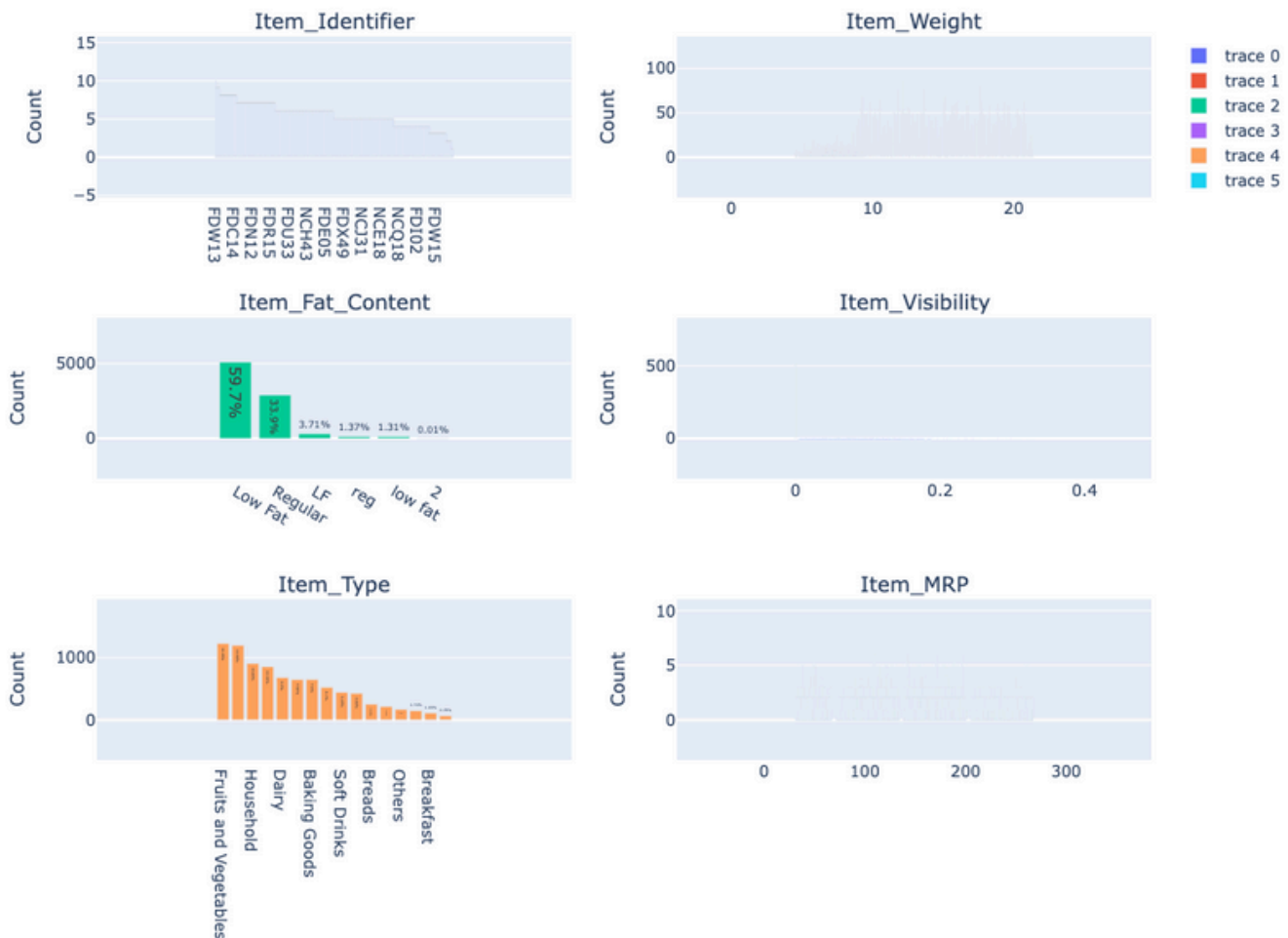
Mean Absolute Error: 872.63

R²: 0.51



Bu yerda biz narsa sotuviga bo'g'liq bolgan assosiy omilarni korishimiz mumkun masalan: Sotuvdagi narsaga assosiy bog'liq jihatlar bu Korinishi (Item_Visibility),Vazni,Og'irligi,Ishlab Chiqarilgan sanasi ekan

Count Plots



Bu yerda biz ma'lumotlarni yanaham yahshiroq tushunishimiz mumkun masalan: Item_type ni oladigon bolsak qanday turdani narsalar yahshiroq sotilishini korishimiz mumkun ekan masalan: Har hil meva va sabzovotlar juda ham kop sotilishini korishimiz mumkun ekan Nonushta uchun va boshqalari esa aksincha

Xulosa

Ushbu loyihada biz **LabelEncoder, Bagging Regressor, Ada Boost Regressor, Decision Tree Regressor, KNeighbors Regressor Logistic Regression, Linear Regression, Stacking Regressor , Random Forest Regressor** modellar orqali narsalar ma'lumotiga qarab narsalarning narsalarni savdo rastalarida sotilishi korib chiqdik va bu modellar orqa bizning proyektimizni r2 scoreni kotarishga va mse(mean squared error)ni tushirishga harakat qildik