🔟 Regression Models with Python Code

#	Model Name	Use Case / Description	Python Implementation Code
1	**Linear Regression**	For simple linear relationships	from sklearn.linear_model import LinearRegression model = LinearRegression()
2	**Ridge Regression**	Linear regression with **L2 regularization**	from sklearn.linear_model import Ridge model = Ridge(alpha=1.0)
3	**Lasso Regression**	Linear regression with **L1 regularization**	from sklearn.linear_model import Lasso model = Lasso(alpha=0.1)
4	**Elastic Net Regression**	Combines L1 and L2 regularization	from sklearn.linear_model import ElasticNet model = ElasticNet(alpha=0.1, l1_ratio=0.5)
5	**Polynomial Regression**	Handles non-linear data	from sklearn.preprocessing import PolynomialFeatures poly = PolynomialFeatures(degree=2) X_poly = poly.fit_transform(X) model = LinearRegression()
6	**Support Vector Regression**	Good for small datasets or complex data	from sklearn.svm import SVR model = SVR(kernel='rbf')
7	**Decision Tree Regressor**	Handles non-linear relationships, interpretable	from sklearn.tree import DecisionTreeRegressor model = DecisionTreeRegressor()
8	**Random Forest Regressor**	Ensemble of decision trees, reduces overfitting	from sklearn.ensemble import RandomForestRegressor model = RandomForestRegressor(n_estimators=100)
9	**Gradient Boosting Regressor**	Powerful ensemble model for structured data	from sklearn.ensemble import GradientBoostingRegressor model = GradientBoostingRegressor()

10	**XGBoost Regressor**	Fast and accurate gradient boosting model	from xgboost import XGBRegressor model = XGBRegressor()