**Task – 2**

Spaceship Titanic Prediction using Random Forest

Objective: Predict whether passengers were transported to another dimension based on personal and travel features.

Dataset: train.csv (with target Transported) and test.csv (for predictions).

Libraries: Pandas, scikit-learn.

Data Preprocessing: - Fill missing values for categorical features (HomePlanet, Destination, CryoSleep, VIP) and numerical features (Age). - Replace missing spending values (RoomService, FoodCourt, ShoppingMall, Spa, VRDeck) with 0.

Feature Engineering: - TotalSpend = sum of all spending columns.

Encoding: Label encoding for categorical variables.

Model: RandomForestClassifier with n\_estimators=200.

Validation: Train-test split (80-20) for evaluation.

Training: Fit model on training data.

Evaluation: Calculate accuracy on validation set.

Final Model: Fit on entire training dataset.

Submission: Predict on test data and save submission.csv.

Result: submission.csv ready for submission.

