**PRCP-1020-HousePricePred**

**Problem Statement**

Task 1:-Prepare a complete data analysis report on the given data.

Task 2:-Create a predictive model which will help the bank marketing team to know which customer will buy the product.

Task3:-Suggestions to the Bank market team to make customers buy the product.

**Dataset Link:**

Ask a home buyer to describe their dream house, and they probably won't begin with the height of the basement ceiling or the proximity to an east-west railroad. But this playground competition's dataset proves that much more influences price negotiations than the number of bedrooms or a white-picket fence.

With 79 explanatory variables describing (almost) every aspect of residential homes in Ames, Iowa, this competition challenges you to predict the final price of each home.

### Practice Skills

* Creative feature engineering
* Advanced regression techniques like random forest and gradient boosting

Link : <https://d3ilbtxij3aepc.cloudfront.net/projects/CDS-Capstone-Projects/PRCP-1020-HousePricePred.zip>

**Attribute Information:**

* SalePrice - the property's sale price in dollars. This is the target variable that you're trying to predict.
* MSSubClass: The building class
* MSZoning: The general zoning classification
* LotFrontage: Linear feet of street connected to property
* LotArea: Lot size in square feet
* Street: Type of road access
* Alley: Type of alley access
* LotShape: General shape of property
* LandContour: Flatness of the property
* Utilities: Type of utilities available
* LotConfig: Lot configuration
* LandSlope: Slope of property
* Neighborhood: Physical locations within Ames city limits
* Condition1: Proximity to main road or railroad
* Condition2: Proximity to main road or railroad (if a second is present)
* BldgType: Type of dwelling
* HouseStyle: Style of dwelling
* OverallQual: Overall material and finish quality
* OverallCond: Overall condition rating
* YearBuilt: Original construction date
* YearRemodAdd: Remodel date
* RoofStyle: Type of roof
* RoofMatl: Roof material
* Exterior1st: Exterior covering on house
* Exterior2nd: Exterior covering on house (if more than one material)
* MasVnrType: Masonry veneer type
* MasVnrArea: Masonry veneer area in square feet
* ExterQual: Exterior material quality
* ExterCond: Present condition of the material on the exterior
* Foundation: Type of foundation
* BsmtQual: Height of the basement
* BsmtCond: General condition of the basement
* BsmtExposure: Walkout or garden level basement walls
* BsmtFinType1: Quality of basement finished area
* BsmtFinSF1: Type 1 finished square feet
* BsmtFinType2: Quality of second finished area (if present)
* BsmtFinSF2: Type 2 finished square feet
* BsmtUnfSF: Unfinished square feet of basement area
* TotalBsmtSF: Total square feet of basement area
* Heating: Type of heating
* HeatingQC: Heating quality and condition
* CentralAir: Central air conditioning
* Electrical: Electrical system
* 1stFlrSF: First Floor square feet
* 2ndFlrSF: Second floor square feet
* LowQualFinSF: Low quality finished square feet (all floors)
* GrLivArea: Above grade (ground) living area square feet
* BsmtFullBath: Basement full bathrooms
* BsmtHalfBath: Basement half bathrooms
* FullBath: Full bathrooms above grade
* HalfBath: Half baths above grade
* Bedroom: Number of bedrooms above basement level
* Kitchen: Number of kitchens
* KitchenQual: Kitchen quality
* TotRmsAbvGrd: Total rooms above grade (does not include bathrooms)
* Functional: Home functionality rating
* Fireplaces: Number of fireplaces
* FireplaceQu: Fireplace quality
* GarageType: Garage location
* GarageYrBlt: Year garage was built
* GarageFinish: Interior finish of the garage
* GarageCars: Size of garage in car capacity
* GarageArea: Size of garage in square feet
* GarageQual: Garage quality
* GarageCond: Garage condition
* PavedDrive: Paved driveway
* WoodDeckSF: Wood deck area in square feet
* OpenPorchSF: Open porch area in square feet
* EnclosedPorch: Enclosed porch area in square feet
* 3SsnPorch: Three season porch area in square feet
* ScreenPorch: Screen porch area in square feet
* PoolArea: Pool area in square feet
* PoolQC: Pool quality
* Fence: Fence quality
* MiscFeature: Miscellaneous feature not covered in other categories
* MiscVal: $Value of miscellaneous feature
* MoSold: Month Sold
* YrSold: Year Sold
* SaleType: Type of sale
* SaleCondition: Condition of sale

**Model Comparison Report**

Create a report stating the performance of multiple models on this data and suggest the best model for production.

**Report on Challenges faced**

Create a report which should include challenges you faced on data and what technique used with proper reason.

Note:-All above task has been created on single jupyter notebook and share the same while final submission of project.