

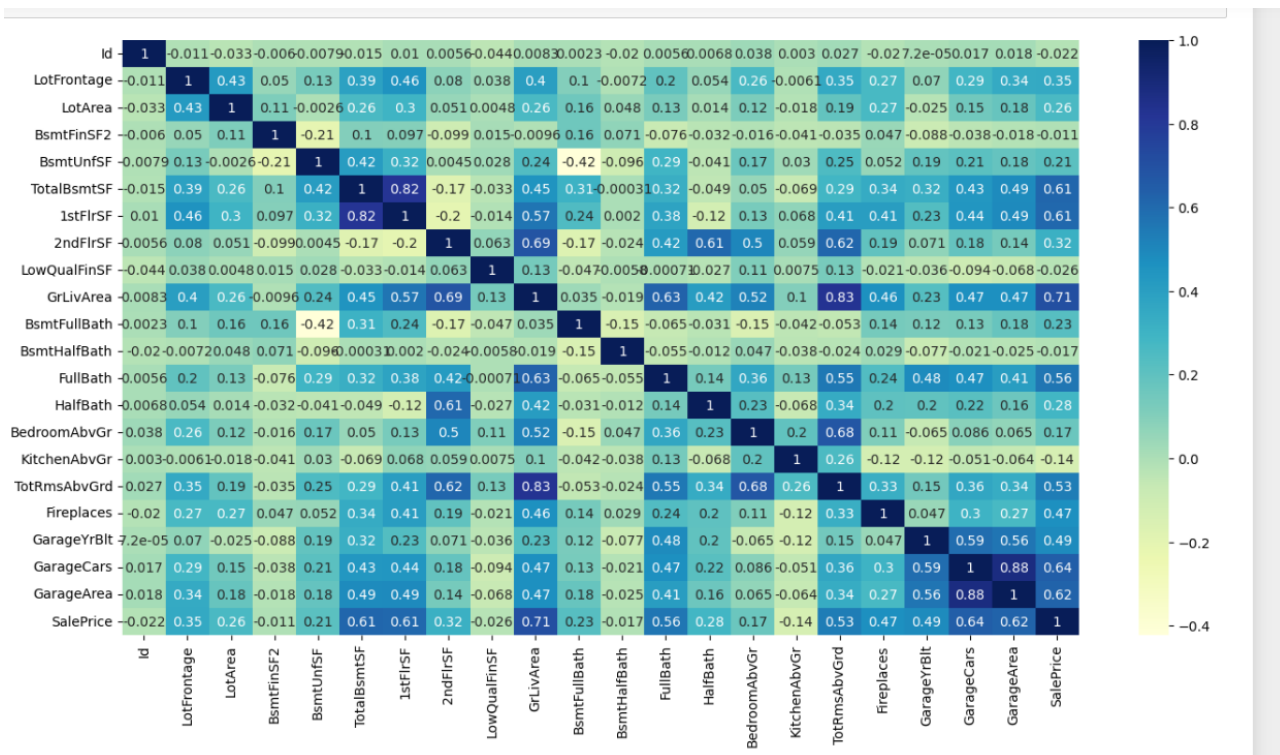
## Assignment 1

### The company wants to know:

1. Which variables are significant in predicting the price of a house.
2. How well those variables describe the price of a house.
3. Also, determine the optimal value of lambda for ridge and lasso regression.

### Answer:

- As per the analysis, the variable Sale Price is highly (positively) correlated with variables such as 'TotalBsmtSF', '1stFlrSF', 'GarageArea', 'TotRmsAbvGrd' hence these variables are significant in predicting the price of a house and also these variables describe the price of a house well.



- The Optimal values of lamda for Ridge and Lasso:

Out[299]:

	Metric	Linear Regression	Ridge Regression	Lasso Regression
0	R2 Score (Train)	7.086886e-01	7.086881e-01	7.086630e-01
1	R2 Score (Test)	7.359387e-01	7.358763e-01	7.358549e-01
2	RSS (Train)	1.858770e+12	1.858773e+12	1.858933e+12
3	RSS (Test)	7.443129e+11	7.444888e+11	7.445492e+11
4	MSE (Train)	4.266777e+04	4.266781e+04	4.266965e+04
5	MSE (Test)	4.122311e+04	4.122798e+04	4.122965e+04

## 2.Business

### Goal

I have modelled the price of houses with the available independent variables. This model can be used by the management to understand how exactly the prices vary with the variables. They can accordingly

manipulate the strategy of the firm and concentrate on areas that will yield high returns. Further, the model will be a good way for management to understand the pricing dynamics of a new market.