**Model Selection and Variable selection**

**Problem:**

A person collected a set of data to study about the value of the property. The detailed description of the variables on which the data was collected is as follows:

Variables for property valuation

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| # Y: Sale price of the house/ 1000 | | | |
| # X1: Taxes (local, school, county)/IOW | | | |
| # X2: Number of baths | | |  |
| # X3: Lot size (sq ft x 1000) | | |  |
| # X4: Living space (sq ft x 1000) | | | |
| # x5: Number of garage stalls | | |  |
| # X6: Number of rooms | | |  |
| # X7: Number of bedrooms | | |  |
| # X8: Age of the home (years) | | |  |
| # X9: Number of fireplaces | | |  |

Select the minimum number of predictors to estimate the sale price of the house out of the given variables using the forward, backward and stepwise procedures.

The evaluation pattern is as follows:

|  |  |  |
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| Section | Parameters | Marks |
| A | Objective/Aim | 2 |
| B | Analysis | 3 |
| C | Interpretation | 3 |
| D | Timely submission | 2 |
| Total |  | 10 |