# Report of Indoor Localization using Machine Learning

**Tool Used :** Scikit Learn

**Language used** : Python

**Dataset:**

|  |  |  |
| --- | --- | --- |
| **Dataset** | **Specification** | **File** |
| Training Dataset | 23056 rows and 106 columns | [indoor\training set.csv](file:///C:\Documents%20and%20Settings\Sneha%20Kapoor\Desktop\indoor\training%20set.csv) |
| Test dataset | 1443 rows and 106 columns | [indoor\training set.csv](file:///C:\Documents%20and%20Settings\Sneha%20Kapoor\Desktop\indoor\training%20set.csv) |

**Accuracy equation:**

\texttt{accuracy}(y, \hat{y}) = \frac{1}{n_\text{samples}} \sum_{i=0}^{n_\text{samples}-1} 1(\hat{y}_i = y_i)

**Accuracy chart:**

|  |  |
| --- | --- |
| 1.multiple linear regression | 0.000693481 |
| 2.polynomial regression | 0.002080444 |
| 3.decision trees | 0.002080444 |
| 4.random forest | 0.000693481 |
| 5.logistic regression | 0.436893204 |
| 6.KNN | 0.400832178 |
| 7.SVM | 0.436893204 |
| 8.Kernel SVM | 0.459084605 |
| 9.Naive bytes | 0.450069348 |
| 10.Decission tree classification | 0.436199723 |
| 11.Random forest classification | 0.436199723 |

**Significance of the accuracy:**

We can take Kernel SVM classifier for this model as this gives the highest accuracy (0.459084605) among all and the result would be 45% accurate.