

The following are the R2_score values:

Machine Learning:

Regressor	R2_score
Machine Learning	0.789479035

Support Vector Machine(SVM):

Regressor (kernel)	C=10	C=100	C=1000
rbf	-0.032273294	0.320031783	0.810206485
Linear	0.462468414	0.628879286	0.764931174
Poly	0.038716223	0.617956962	0.856648768
Sigmoid	0.039307144	0.527610355	0.287470695
Precomputed	-	-	-
Gamma	C=10	C=100	C=1000
rbf(auto)	0.03227329390671052	0.3200317832050832	0.8102064851758545
Linear(auto)	0.462468414233968	0.6288792857320346	0.7649311738649672
Poly(auto)	0.038716222760231456	0.6179569624059795	0.8566487675946524
Sigmoid(auto)	0.03930714378274347	0.5276103546510407	0.28747069486978516
precomputed	-	-	-

- In support vector machine(svm) provides the best r2_score in kernal(Poly) and c=1000 is 0.856648768

Decision Tree:

Regressor (Criterion)	Splitter (best)	Slitter (random)
Squared_error	0.688131659	0.644257575
friedman_mse	0.692678822	0.673952780
absolute_error	0.667246711	0.673952780
poisson	0.717464186	0.689566753

criterion	Max_features	Splitter	R2_score
Squared_error	sqrt	best	0.7236819995153483

<i>friedman_mse</i>	sqrt	best	0.6769706922482666
<i>absolute_error</i>	sqrt	best	0.7456982210975241
<i>poisson</i>	sqrt	best	0.6650533607301842
<i>Squared_error</i>	log2	best	0.6892588611314543
<i>friedman_mse</i>	log2	best	0.6448147703622176
<i>absolute_error</i>	log2	best	0.5895267241417539
<i>poisson</i>	log2	best	0.6050440191469303
<i>Squared_error</i>	sqrt	random	0.6510726407740217
<i>friedman_mse</i>	sqrt	random	0.6895203724349666
<i>absolute_error</i>	sqrt	random	0.6892214818689233
<i>poisson</i>	sqrt	random	0.6085802342611142
<i>Squared_error</i>	log2	random	0.7290540967423597
<i>friedman_mse</i>	log2	random	0.6709523106231805
<i>absolute_error</i>	log2	random	0.6946383415036814
<i>poisson</i>	log2	random	0.6762548343832775

- In decision tree provides the best r2_score in criterion(poisson) and splitter(best) is 0.717464186

Random Forest:

Regressor (Criterion)	Max_features (sqrt)	Max_features (log2)
<i>Squared_error</i> <i>n_estimator=100</i>	0.8708117957130941	0.8708117957130941
<i>Squared_error</i> <i>n_estimator=50</i>	0.8696151773988945	0.8696151773988945
<i>friedman_mse</i> <i>n_estimator=100</i>	0.8708618000962747	0.8708618000962747
<i>friedman_mse</i> <i>n_estimator=50</i>	0.8702337930943329	0.8702337930943329
<i>absolute_error</i> <i>n_estimator=100</i>	0.8710685856341518	0.8710685856341518
<i>absolute_error</i> <i>n_estimator=50</i>	0.8708144250343052	0.8708144250343052
<i>Poisson</i> <i>n_estimator=100</i>	0.8677524471339977	0.8677524471339977
<i>Poisson</i> <i>n_estimator=50</i>	0.8632082060736304	0.8632082060736304

- In Random Forest provides the best r2_score in criterion(absolute_error), Max_features(sqrt) and n_estimator (100) is 0.8710685856341518

The finalized model to select:

- The Random Forest is best way of machine learning model to this condition.
- Because the r2_score value is high when it is compared to other conditions.
- In *Random* Forest provides the best r2_score in criterion(absolute_error) ,
Max_features(sqrt) and n_estimator (100) is 0.8710685856341518