[**https://scikit-learn.org/stable/tutorial/machine\_learning\_map/index.html**](https://scikit-learn.org/stable/tutorial/machine_learning_map/index.html)This website is a blueprint of approaching the task.

**Ordinary Least Squares**

Chooses the parameters of a linear function of a set of explanatory variables by the RSS. RSS: ALL(sum((y-y’))  
<https://www.statsmodels.org/stable/generated/statsmodels.regression.linear_model.OLS.html>

**Ridge Regression (L1 Regulization):**

Generally used in multivariate regressions.  
Tries to find the min residual sum of square (RSS) with regulazing their coefficient.   
Strong against overfitting.  
Uses all feautures, just makes least related feautures’ coeffecient less, but not zero.  
<https://scikit-learn.org/stable/modules/generated/sklearn.linear_model.Ridge.html>

**Lasso Regression (L2 Regulization):**

Lasso makes selection of feauture and regularization. Same as Ridge tries to minimaze the RSS.  
Differs with Rigde is unrelated varaibles’ coefficents can be 0.  
<https://scikit-learn.org/stable/modules/generated/sklearn.linear_model.Lasso.html>

**Elastic Net Regression:**

Aim is same as the Lasso and Ridge, minimize the RSS.  
Uses the Ridge’s punishment and Lasso’s varaible selection.  
<https://scikit-learn.org/stable/modules/generated/sklearn.linear_model.ElasticNet.html>

**Decision Tree:**

The decision trees is used to fit a sine curve with addition noisy observation.  
It learns local linear regressions approximating the sine curve.  
It’s a non-parametric supervised learning method.  
<https://scikit-learn.org/stable/auto_examples/tree/plot_tree_regression.html>