|  |  |  |
| --- | --- | --- |
| **Parameter** | **Classification** | **Clustering** |
| **Type** | Used for Supervised Learning | Used for unsupervised learning |
| **Basic** | Its is the process of classifying input instances on the basis of their labels | Grouping the instances on the basis of input data without classification |
| **Need** | It requires training and testing of dataset because it has labels | It does not require training or testing |
| **Complexity** | It more complexed compared to clustering | Less complex |
| **Example** | Logistic regression, Naive Bayes classifier, Support vector machines, etc. | k-means clustering algorithm, Fuzzy c-means clustering algorithm, Gaussian (EM) clustering algorithm, etc. |

**DIFFERENCE BETWEEN CLASSIFICATION AND CLUSTERING**

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Classification** | **Regression** |
| **Type** | Used for Supervised Learning | Used for unsupervised learning |
| **Basic** | Its is the process of classifying input instances on the basis of their labels | When values need to be converted to a continuous output, the Mapping Function is what you need |
| **Need** | It requires training and testing of dataset because it has labels | There is need of training on the basis of action |
| **Complexity** | It more complexed compared to clustering | It’s the most complex among all |
| **Example** | Logistic regression, Naive Bayes classifier, Support vector machines, etc. | Linear Regression, Polynomial Regression, Ridge Regression, Lasso Regression, Support Vector Regression |

**DIFFERENCE BETWEEN REGRESSION AND CLASSIFICATION**