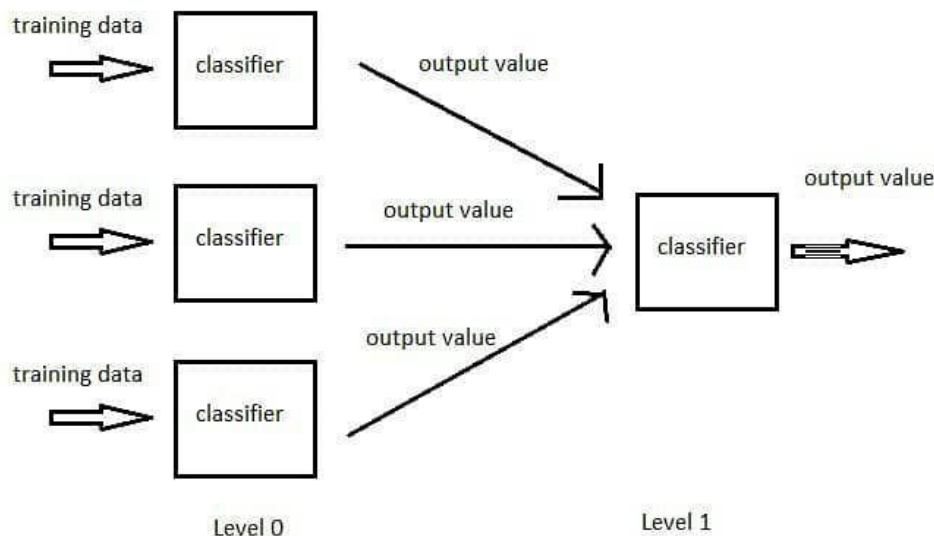# Stacking Ensemble method

- **Stacking is an ensemble learning technique which is used to combine the predictions of diverse models into one single model also known as the meta-models.**

- **All the individual models are trained separately on the complete training data set and fine-tuned(cross-validation) to achieve greater accuracy. The bias and variance trade-off is taken care off for each model.**

- **The final model, also known as the meta-model is fed either the class labels predicted by the base models or the predicted probabilities for each class label.**

Concept Diagram of Stacking

training data → classifier	output value →
training data → classifier	output value → classifier → output value
training data → classifier	output value →
Level 0	Level 1

Stacking Ensemble method

- The meta-model is then trained based on the outputs given by the base models. In stacking, a new model is trained based on the predictions made by the previous models.
- You can add multiple layers and all the layers are trained sequentially one after another.
- The final stage consists of one single powerful model, which gives us the final output by combining the output of all the models present in the previous layers.
- This single powerful model at the end of a stacking pipeline is called the meta-model.