Title of the Project        : TEXT-BASED EMOTION CLASSIFICATION USING ML with NLP

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**ABSTRACT**

The collection and evaluation of emotions are the focus of the sentiment analysis subfield known as emotion detection. With the ease of obtaining data and the enormous advantages its deliverables provide, many research are being conducted in the area of text mining and analysis. The proposed approach in text has lately been more well-liked due to its numerous possible applications in marketing, development research, behavioural science, social interaction, automation, etc. In the proposed approach, the text emotion recognition used both speech as well as text to detect emotions. Hence, these methods fall short of creating a useful and flexible system for emotion recognition. A fresh approach was suggested and put into practise for detecting emotions in short entries. As opposed to conventional methods, which are mostly focused on statistical techniques, this approach attempts to infer and extract the causes of emotions by importing information and theories from other disciplines, such as sociology. The approach of emotion cause extraction is employed as a critical step to enhance the quality of chosen characteristics, and it is based on the idea that a prompting cause event is an essential component of emotion. NLP is used to build the supervised machine learning algorithms, and accuracy metrics are used for comparison. The best model, or the one with the highest accuracy, is then chosen after a comparison of the three, and it is implemented into a webpage. The algorithms used are Linear SVM, Random Forest, Decision Tree Classifier. The three models are then compared and the best one ie. the one with highest accuracy is deployed into a webpage. The highest accuracy obtained from the above algorithms is 90%. This work provides a webpage for emotion recognition that takes voice and text input with accurate results.