Software Engineering Project
Abstract - Team 4

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Problem Statement :
To design a system for recognising facial emotions, given a stream of video inputs. To process multiple frames parallelly and produce a distribution of emotions for a given time frame.

Solution Overview :
We aim to analyse the given stream as discrete frames, sampled at equal time intervals, assuming no loss of expression between two frames and any two frames in the sequence are independent of each other, i.e., the expression of i+1 th frame would not depend on the ith frame. These images will be processed by our emotion model, which would suggest the emotion based on the current frame. This would be done over a distributed system, so that using parallel processing, we can process a bigger number of frames in the same amount of time. This will help in extending our project for real-time applications. Output would be a distribution of emotions, corresponding to the sequence of frames. We would have to ensure Consistency of the Distributed System, such that the system looks out for each frame in one request to get processed before giving the final output, while it may parallelly process frames from other requests.

Real Life Applications & Possible Extensions :
This project can be used as part of real-life sentiment analysis systems for recording the audience's reaction to performances, student’s reaction to lectures, reader’s reaction to stories, viewer’s reaction to stand-ups etc. The system will also be useful if one wants to track a particular emotion - for example, does the viewer laugh at a punch-line of a joke in a stand-up?