**SYSTEM ANALYSIS**

**EXISTING SYSTEM:**

* Vivekanandam et. al. have used Light weight CNN (LWCNN) architecture with VGG for crowd counting purpose. In the front end, VGG-16 has given 10 convolution layers and 3 max-pooling layers. It is feasible to reliably count the number of individuals present in a crowd using a compressed convolution depth of 6 and a dilation factor of 2.
* Manoharan et. al. have suggested the use of Extreme Learning Machine (ELM) algorithm to overcome the drawback of Feed-Forward Neural Network such as slow computation with different methodologies such as Evolutionary ELM, Voting based ELM, Ordinal ELM, fully complex ELM, Symmetric ELM, etc. Accuracy of ELM based classification algorithm is 94.10%.
* Chandu B have used dataset having 400 samples of bird sound recordings in total, with recordings of four birds: cuckoo, sparrow, crow, and laughing dove each having an input space of 100 recordings. Bird sound recordings were collected from xeno-canto.com, a site devoted to the sharing of bird sounds from throughout the world. Each clip is between 5 and 20 seconds long and is transformed to a fixed sampling frequency of 44100Hz or 48000Hz in order to preserve diversity and avoid overfitting. The data for these examples comes from the Google Recording and LibriSpeech ASR datasets.

**DISADVANTAGES OF EXISTING SYSTEM:**

* The existing system is a time constraint; it takes a long time to analyze the sound of the birds.
* The existing system usually requires much more data. Lots of training data is required
* The existing system is also more computationally expensive.
* The existing system can take several weeks to train the dataset completely from scratch.
* The amount of computational power needed is also more.

**PROPOSED SYSTEM:**

* The first step of implementation is gathering data from dataset which is obtained from Kaggle. The audio recordings of the birds in .wav format are included in this resource. This dataset contains audio recordings of the birds in .wav format. Kaggle are open websites dedicated for dataset where users upload their own recordings. Since many features are defined in dataset, combination of them are used to define class (like genus and species, etc.) and classify birds according to them.
* An Artificial Neural Network (ANN) classification algorithm is a popular method for analyzing and recognizing bioacoustics signals. As a classification model, the multilayer perceptron (MLP) is used. The MLP takes a set of predetermined attributes as input and produces a unique outcome for each bird species to be identified. Training and testing are the two steps in this identifying procedure. In the training process, syllables of specified bird sounds were utilized to train the multilayer perceptron, resulting in the right MLP output being triggered. The training process is carried out by repeatedly delivering known sounds to the network and then iteratively adjusting the network's weighting. The goal of this training is to lower the total error between the supplied and expected results till a predefined error requirement is accomplished.
* For the output, user can use GUI i.e., Graphical User Interface to analyse the species of the bird. With the help of GUI user can upload the dataset, process and show the outcome.

**ADVANTAGES OF PROPOSED SYSTEM:**

* The proposed system requires only lesser time to analyze the sound of the birds.
* The proposed system can handle with less number of training data also.
* The proposed system is not more expensive when compared to the existing system models.
* The proposed system may take only few hours train the dataset completely from scratch which is much lesser than the existing system model.
* The proposed system requires only less amount of computational power.
* The proposed system has good fault tolerance.
* The proposed is also has a good distributed memory.