**Title of the Project:** Emotion Recognition Using Speech

Introduction and Objectives of the Project: Emotion recognition using speech is a field of study that deals with the detection and analysis of human emotions from speech signals. The goal of this project is to develop a system that can automatically identify emotional states from speech using machine learning techniques. The system will be able to recognize a range of emotions, including happiness, sadness, anger, fear, and disgust.

**Project Category:** Artificial Intelligence and data analysis

**Tools/Platform, Hardware and Software Requirements:** The project will be implemented using Python programming language and several libraries such as Scikit-learn, Tensorflow, and Keras for machine learning. The hardware requirements include a computer with a processor of at least 2 GHz, 8 GB RAM, and a minimum of 250 GB hard disk space.

**Problem Definition, Requirement Specifications, Project Planning and Scheduling**: The problem is to develop a machine learning model that can accurately recognize emotions from speech signals. The requirements include collecting a large and diverse dataset of annotated speech signals, preprocessing the data, extracting features, and training a model using supervised learning techniques. The project will be planned and scheduled using a Gantt chart and PERT graph to ensure timely completion.

**Scope of the arrangement:** The scope of the project includes collecting a dataset of speech signals, preprocessing the data, feature extraction, model development, and evaluation. The project will focus on recognizing five basic emotions: happiness, sadness, anger, fear, and disgust.

**Analysis:** The data models for the project include 0, 1, and 2 level DFDs, complete ER diagrams with cardinality, and class diagrams. The data models will be used to analyze the data and identify the relationships between the different entities in the system.

**Database and Tables Detail:** The database for the project will include tables for storing the speech signals, feature vectors, and the emotional labels. The primary keys for the tables will be the unique identifiers for each speech signal, and the foreign keys will be used to establish relationships between the tables. The tables will also have appropriate constraints on the fields, such as data type, length, and nullability, according to the project requirements.