**Applied Artificial Intelligence Project -4**

**Username: bolt**

**Domain:** Parkinson’s Disease Symptom Recognizer (PDSR)

**Abstract:** The PDSR is designed using Netica and Implemented Decision Net which can predict based on the information provided by patients whether the patient is exhibiting symptoms of Parkinson’s Disease. In this system, the symptoms are classified into different categories: Main, Movement, Common, Behavioral and Mixed Symptoms. The Cumulative Symptoms is the summation of the three main symptom categories (Main, Movement and Common). These groups constitute the basic checklist when it comes to Detecting Parkinson’s Disease.

The Decision node, ‘Severity of disease’, decides how severe the disease is. The other decision node ‘Visit to Doctor’ depends on the previous decision node, i.e., if disease is severe then what is the probability that Visit to the Doctor is suggested.

The Utility Node ‘Suggested Action’ connects the Decision network to the Bayesian Network and specifies the Suggested Action.

**Features:** The Recognizer is designed to interact with the patient by letting the patient answer Yes or No based on if he suffers from the mentioned symptoms it so, then arrives at the conclusion whether the patient is exhibiting symptoms of Parkinson’s Disease along with what are the chances of him/her actually exhibiting symptoms of the disease.

**Usage manual:**

1. Open the “bolt.dne” file in Netica. Kindly compile the file if need be. [Click on Network -> Compile] (File also saved in .neta format)

2. Answer Yes or No for each symptom and see how we decide if patient suffers from disease or not.

**Valid cases/ Constraints:**

Netica throws error if the you try to change probabilities of the 5 Main Symptom category and Cumulative Symptom node as it is auto derived from the patient input of each symptom. Kindly enter Yes and No for individual symptoms only. Kindly refrain from doing so.

**Expected Output:**

The Recognizer would give you a verdict whether the patient is exhibiting symptoms of Parkinson’s Disease or not along with the chances of how severely sure the system is of the probability that you do indeed exhibit Symptoms of Parkinson's Disease.

**Note**: The decision node ‘Visit to Doctor’ depends on the previous decision node and will show the probabilities only when any one probabilities of the ‘Severity of Disease ’ node are selected.

**Test Case:**

