**Project Report**

**Implementation of LOQR using WEKA**

**ITCS 6155 (Knowledge Based Systems)**

**Team:**

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**Project Description**

This project is implementation of LOQR (Learning for Query Relaxation), which is designed to relax queries that are in the disjunctive normal form and contain a mixture of discrete and continuous attributes. This project discovers the implicit relationships that exist among the various domain attributes and then uses this knowledge to relax the constraints from the failing query.

In the first step, we use a small, randomly-chosen subset of the target database to learn a set of decision rules that predict whether an attribute’s value satisfies the constraints in the failing query; this query-driven operation is performed online for each failing query.

In the second step, we uses nearest-neighbor techniques to find the learned rule that is the most similar to the failing query; then it uses the attributes’ values from this rule to relax the failing query’s constraints.

**Project Implementation**

Flexible Query Answering System is implemented for the given music dataset by following Muslea's algorithm and using Eclipse IDE to develop the system.

The system takes an input query form the user with minimum 5 atomic terms.

Some constraints have been added to the code in case an input with less than 5 atomic terms is entered by the user.

Any other exceptions that could stall the progress of the system have been handled.

**Execution**

1. Project is implemented in Java using WEKA, we developed java code to automate the process of generating rules for the given dataset.

2. Import the project in eclipse by selecting existing projects to workspace and select the project folder.

3. If there are any errors in the project, add the necessary jar files from the project 'lib' folder by selecting the java build path option.

4. Change the File path in “KBSAlgorithmConstants.java”.

5. Run the file LOQRAlgorithm.java from the src folder in the project.

6. Enter the query as below format (Mention a minimum of 4 attributes in the query, else the program would automatically quit without execution) :

dynamics\_rms\_Std >0.18 ^ dynamics\_rms\_PeriodEntropy > 0.91 ^ dynamics\_rms\_Slope < 0.3 ^ rhythm\_attack\_time\_Mean > 0.035 ^ spectral\_irregularity\_Slope < 0.5