**The function of template matching inferences instruction manual**

1. **Function instruction**
2. A textual entailment algorithm

At first，in the file textentailment.java, the function singleWordMatch and spMatch is the programme of simple matching algorithm. The function singleWordMatch has two parameters which are student's input and the template in question. The function singleWordMatch realizes the Equations (4) and (5).

Secondly, the function lcsMatch is the programme of continuous subsequence matching algorithm. It realizes the Equations (6), (7), (8). Its two parameters are student's input and the template in question.

2、Semantic similarity-based matching inference

In the file semmatch.java, the function mysemmatch is the program of Equation (9). The file synonyms.java realizes function mysynonyms, which is the program of synonyms (j, i) in Equation (10). Its three parameters are String type of word in student's input, String type of word in the template in question and the variable of the wordnet dictionary. The file simnoun.java realizes function mysimoun, which is the program of Simnoun (j, i) in Equation (10). Its three parameters are String type of word in student's input, String type of word in the template in question and the variable of the wordnet dictionary. The file pathlen.java contains function mypathlen. It is the programme of *PathLen* (*j*, *i*) in Equation (10). The three parameters are String type of word in student's input, String type of word in the template in question and the variable of the wordnet dictionary. The SimilartoSimilarity.java realizes function cal\_similarity. It is the programme of *Similar (j, i)* in Equation (10). Its three parameters are String type of word in student's input, String type of word in the template in question and the variable of the wordnet dictionary.

All of these files can create an object of these classes and then call the corresponding function.

3、The tone similarity between the input and template sentences

In the file DependencyNeg.java, we create the fuction judgedependency to analyze dependency and compute tone similarity in Equation (10). The first two parameters of the function are the string type of student's input and the template in question. When you use it, you can first create an object of this class and call the function.

4、Another instruction

The wordnet dictionary file path we use is “dict”. The path is relative path for our project. You can change the path correctly if it is necessary.

1. **Java Runtime Environment**

The JDK (Java Development Kit) we used is 1.8 version. The wordnet file we use is wordnet 3.0 version. The jar package we used for wordnet is edu.mit.jwi\_2.2.2\_jdk.jar. It is provided by MIT Massachusetts Institute of Technology. JWI is a Java API for accessing WordNet. The jar packages stanford-parser.jar, stanford-postagger-3.8.0.jar, stanford-postagger-3.8.0-javadoc.jar and stanford-postagger-3.8.0-sources.jar are used for analyzing the dependency between words in the input and template sentences. These jar packages are provided by the Stanford Natural Language Processing Group. The development platform we used to program is MyEclipse 2015 CI.