# programmingAssignment2Group7

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**Required Tool:**

1. Maven3.5.4: To automatic loading up required dependencies, download from:https://maven.apache.org/download.cgi
2. Git: Version control, download from https://git-scm.com/downloads
3. Intellij IDEA: download from https://www.jetbrains.com/idea/download/#section=mac

**Installation:**

1. Maven installation guide https://maven.apache.org/install.html
2. Git installation:https://git-scm.com/book/en/v2/Getting-Started-Installing-Git
3. Intellij installation: https://www.jetbrains.com/help/idea/install-and-set-up-product.html

**Add trec car tool to the project:**

1. Navigate to the directory of trec car tool java version which is ~/trec-car-tools-java-master

2. Use maven command to package the trec car tool to jar file and maven will put it in maven local repository mvn clean install *If you got a message like mvn: command not found. Under Linux, you need to set JAVA_HOME and M2_HOME directory in .bash_profile, if there is no such file, just create one. run the following command sudo vi ~/.bash_profile Add the following to the file: //replace the JAVA_HOME and M2_HOME based on your own JAVA_HOME=/Library/Java/JavaVirtualMachines/jdk1.8.0_121.jdk/Contents/Home export JAVA_HOME

```
M2_HOME=/Users/kangkang/Documents/maven/apache-maven-3.3.9
export M2_HOME


PATH=${PATH}:${JAVA_HOME}/bin:${M2_HOME}/bin
export PATH
```

save and exit the file and run the following command: source ~/.bash_profile Now you can go the ~/trec-car-tools-java-master to run the command.

3. Clone the programming assignment by https://github.com/XinLiu92/cs853programmingAssignment1Group7.git to your local.

4. Open the cloned repository in Intellij, and reimport maven dependencies. Windows type in ctrl+shift+a to find action, type in "reimport", you will find "reimport all maven projects", then select it and press enter. Mac will type in cmd+shift +a instead. All of the necessary dependencies are included in pom.xml

5. Make sure you pass two arguments to the program, the first one is index directory, second one is the data file directory

6. Rebuild the project and run Main.java

7. By changing the boolean variable defualtScore under Main.java to false, you can swich the score function to the one we need to change in assignment spec.

8. Then run the program to get the result.

**Run in command line:**

1. make sure the trec car tool jar file is in .m2 file which is for maven local repository

2. clone **programmingAssignment2Group7** from github([https://github.com/XinLiu92/programmingAssignment2Group7](https://github.com/XinLiu92/programmingAssignment2Group7)) and cd in to the directory which contains pom.xml and src folder.

3. run

```
mvn compile
```

4. run

(1) reading queries and write rankings

for using default score function BM25

```
mvn exec:java –Dexec.mainClass="main.Main" –Dexec.args="true indexPath"
```

for using custom score function

```
mvn exec:java –Dexec.mainClass="main.Main" –Dexec.args="false indexPath"
```

The output files will be created under the repository folder.

rankResult-defaultScoreFunc.txt/rankResult-customScoreFunc.txt

(2)Evaluation with trec_eval

 The output file is also under the project repository folder

(3) Precision atR

for using default score function BM25

```
mvn exec:java –Dexec.mainClass="main.PrecisionAtR" –Dexec.args="true"
```

for using custom score function

```
mvn exec:java –Dexec.mainClass="main.PrecisionAtR" –Dexec.args="false"
```

The output files will be created under the repository folder named like:

precisionAtR-defaultScoreFunc.txt/precisionAtR-customScoreFunc.txt

(4)MAP

for using default score function BM25

```
mvn exec:java –Dexec.mainClass="main.MAP" –Dexec.args="true"
```

for using custom score function

```
mvn exec:java –Dexec.mainClass="main.MAP" –Dexec.args="false"
```

The output files will be created under the repository folder.

Ap-MAP-defaultScoreFunc.txt/Ap-MAP-customScoreFunc.txt

(5)nDCG@20

 for using default score function BM25

```
mvn exec:java –Dexec.mainClass="main.NDCG" –Dexec.args="true"
```

for using default score function BM25

```
mvn exec:java –Dexec.mainClass="main.NDCG" –Dexec.args="false"
```

The output files will be created under the repository folder.

nDCG-defaultScoreFunc.txt/nDCG-customScoreFunc.txt


Report:

Useful source:

programming assignment1:https://github.com/XinLiu92/cs853programmingAssignment1Group7