

# Information Retrieval Programming Assignment

## 5: Learning-to-Rank

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### Source Code

Please refer to our [GitHub](#) repository for the source code.

To run the project, you need to have the folder `outputs/pa5` [downloaded](#) in your system.

### Produce Features for Learning to Rank

1. First, we need to train our model, using the feature data we got from the ranking files (find features [here](#)). To do that with Coordinate Ascent method for MAP we enter the following command:

```
$ java -jar bin/RankLib.jar -train outputs/pa5/RankLibFeatures  
-ranker 4 -metric2t MAP -tolerance .001 -save outputs/pa5/RankLibModel  
-qrel outputs/pa5/qrelfile
```

The weights are:

```
1:0.3226744658228911 2:0.14228732869911265 3:0.086533586782299  
4:-0.44850461869569724
```

2. Now, we can obtain our new ranking entering the following command:

```
java -jar bin/RankLib.jar -load outputs/pa5/T1RLTrainedModel -rank  
outputs/pa5/T1RLFeatures -score outputs/pa5/T1ScoreModel
```

Our new ranking is:

Doc Number	Score
5	0.164234643248655
2	0.122639045653859
3	0.106482577952791
6	0.101809480103402
4	0.080668616455723
7	0.035571832174778
9	0.024188846133279
11	0.018497352052406
1	-0.039296566090507
12	-0.089700925075787
10	-0.092205928571239
8	-0.119549063886959

The MAP value on our new ranking is 1.

## Combining Different Ranking Functions