

# Data Science Lab: Process and methods

## Politecnico di Torino

### Project description

#### Winter calls, A.Y. 2019/2020

*Last update: January 12, 2020*

## 1 Competition dates

**Start date:** January 12, 2020 at 00:01 AM

**Due date:** January 26, 2020 at 00:01 AM

Due date is a **strict deadline**.

## 2 Problem description

In this competition, you have to perform a sentiment analysis task, analyzing user's textual reviews, to understand if a comment includes a positive or negative mood.

In practice, you are required to build a robust classification model that is able to predict the sentiment contained in a text.

### 2.1 Dataset

The dataset for this competition has been specifically scraped from the [tripadvisor.it](https://www.tripadvisor.it) Italian web site. It contains 41077 textual reviews written in the Italian language.

The dataset is provided as textual files with multiple lines. Each line is composed of two fields: `text` and `class`. The `text` field contains the review written by the user, while the `class` field contains a label that can get the following values:

- `pos`: if the review shows a positive sentiment.
- `neg`: if the review shows a negative sentiment.

**Dataset tree hierarchy** The data have been distributed in two separate collections. Each collection is in a different file.

The dataset archive is organized as follows:

- `development.csv` (Development set): a collection of reviews **with** the class column. This collection of data has to be used during the development of the classification model.
- `evaluation.csv` (Evaluation set): a collection of reviews **without** the class column. This collection of data has to be used to produce the submission file.
- `sample_submission.csv`: a sample submission file.

The dataset is located at:

[http://dbdmg.polito.it/wordpress/wp-content/uploads/2020/01/dataset\\_winter\\_2020.zip](http://dbdmg.polito.it/wordpress/wp-content/uploads/2020/01/dataset_winter_2020.zip)

## 2.2 Task

You are required to build a classification pipeline to assign a label to each record in the Evaluation set. The label specifies the sentiment of the review.

## 2.3 Evaluation metric

Your submissions will be evaluated exploiting the [f1\\_score](#) with the following configuration:

```
from sklearn.metrics import f1_score
f1_score(y_true, y_pred, average='weighted')
```

## 3 Submit your result

**Submission file** In order to get your results evaluated, you have to upload a result file on our submission competition platform. The [submission file has to be a .csv file formatted as follow](#):

```
Id,Predicted
10,pos
123,pos
21,neg
345,pos
42,neg
...
```

The submission file must contains a header line and a row for each record in the Evaluation collection. Each row must have two fields:

- the [Id](#) of the corresponding record in the Evaluation set, as an integer number.



**Info:** Note that the [Ids](#) in the submission file must correspond to the positions of the records in the Evaluation set. **The first record in the Evaluation set has Id=0, the second has Id=1 ans so on.**

- the [Predicted](#) label for the corresponding record.

**Submission platform** The submission platform is the same you used during the course laboratories. Therefore, you have to use the same key. Please refer to [the guide](#) on the course website, to go through the submission procedure. You can find the competition platform at <http://35.158.140.217/>

### 3.1 Upload the report and the software



**Warning:** The report and the software have to be submitted by the due date reported in Section 1. This is a **strict deadline**.

**Submission** All the required files (i.e. for the report and the software) must be included in a **single .zip** file. The archive must be uploaded to the "[Portale della Didattica](#)", under the *Homework* section. Please use as description: **report\_exam\_winter\_2020**.

**Formatting rules** The formatting rules for both the report and the software are described in the [exam rules document](#). You can find it on the course website.