

Guide on Running a Local Copy of Automated Short Answer Scoring

These instructions will get a copy of the project running on a local machine.

Getting Started

Installing pip and venv

Make sure that the machine has **Python 3** installed. The code needs to be run inside a virtual environment to isolate package installation.

1. Install package manager, **pip**, to install the packages.

```
curl https://bootstrap.pypa.io/get-pip.py -o get-pip.py
python get-pip.py
```

2. Install **virtual environment** using pip.

```
pip install virtualenv
```

3. Create a virtual environment.

```
pip install virtualenv
virtualenv --system-site-packages -p python3 ./venv
```

4. Activate virtual environment.

```
source ./venv/bin/activate
```

Installing backend dependencies

1. Install **Django**.

```
pip install django
```

2. Install **Django REST framework**.

```
pip install djangorestframework
```

3. Install **django-cors-headers**.

```
pip install django-cors-headers
```

Installing machine learning libraries

The libraries need to be installed in an isolated virtual environment, so make sure that it is active.

Note: To run in GPU, NVIDIA GPU is required with CUDA installed.

1. Install **TensorFlow**.

```
pip install tensorflow==1.15.0
```

This exact version of TensorFlow is required due to obsolete functions in the newer version. The latest version includes keras library, *tf.keras*, so keras implementation must be changed when it is used.

For GPU usage, install TensorFlow for GPU. Version 1.15.0 requires CUDA 10.1.

```
pip install tensorflow-gpu==1.15.0 # For CUDA 10.1
```

For CUDA 9.2, install version 1.12.0. Download the file from

<https://pypi.org/project/tensorflow-gpu/1.12.0/#files>.

```
pip install <file_name> # For CUDA 9.2
```

2. Install **Keras 2.2.2**.

```
pip install keras=2.2.2
```

This exact version is required due to obsolete functions.

3. Install **pandas**.

```
pip install pandas
```

4. Install **scikit-learn**.

```
pip install scikit-learn
```

5. Install **nltk**.

```
pip install nltk
```

6. Download nltk stopwords.

```
python3
>> import nltk
>> nltk.download('stopwords')
```

Installing frontend dependencies

1. Download and install **npm** from <https://www.npmjs.com/get-npm>.
2. Install **React**.

```
npm install react
```

Running a local copy

Back-end

1. Make sure virtual environment is activated before running the back-end server.

```
source venv/bin/activate
```

2. Run Django server.

```
python3 manage.py runserver
```

The server will be at <http://127.0.0.1:8000>

However, if remote server is needed, the server can be changed to the machine's IP address, for example, <http://155.69.151.177:8000>, by running the code below.

```
python3 manage.py runserver 0:8000
```

Front-end

1. Change server address (if remote server is used).

Change the IP address in the variable `API_URL` **only if remote server is used**.

```
const API_URL = 'http://<IP_address>:8000'
```

Files that need to be changed are:

- frontend/src/account/AccountService.js
- frontend/src/answers/AnswerService.js
- frontend/src/login/LoginService.js
- frontend/src/model/ModelService.js
- frontend/src/posts/PostService.js

- frontend/src/questions/QuestionService.js
- frontend/src/signup/SignupService.js
- frontend/src/students/StudentService.js

2. Start react project.

```
cd frontend/  
npm start
```

The website will be available at <http://localhost:3000>.