

CANTEMPO

The Employee Assignment

Backend Developer

2016 Q1

The Assignment

General Info

- Create a web-application using one of the programming languages or frameworks presented below.
- In case of unclarity and/or missing information about the assignment, be creative! Just make sure to be clear about your assumptions/creativity.
- You may use any third-party open source libraries as long as you define these in your presentation.
- Within 24 hours after you've received the assignment we expect the following from you in an email to jobs@cantemo.com:
 - Confirmation that you will do the assignment
 - Any possible follow-up questions. Note that this will be your *only chance* of asking questions in regards to the assignment.
 - Your own delivery date and time of the assignment. We will let you choose how much time you need to deliver the assignment. Once you've set the delivery date it won't be possible to change it, and all assignments submitted after this deadline will be disqualified.
- Delivery package should include the following in a zip file and sent to jobs@cantemo.com:
 - Source code
 - Text file including:
 - A description of your approach and any possible assumptions you have made in your development
 - Any possible open source packages you have been using
 - Installation guide
- Once we have evaluated your assignment we will get back to you with feedback on your work. If passed, we will invite you to our office at Torsgatan 21, Stockholm, to present your assignment to the development team.

The Assignment

The applicant should design and implement a minimalistic "image bank" with limited search capabilities including background processing.

GUI Specification

- The system should monitor one folder on the local file system (watch-folder) and register any newly appearing files to the database as a background process without any manual involvement.
- It should be possible to perform substring search for file names registered.
- It should be possible to assign "metadata" to any file through the user-interface

- It should be possible to search for metadata
- It should be possible to delete registered files from the web-UI
- The System should have at least the following views:
 - File name search + presentation of search results
 - View a file with metadata in web-interface if available. Also display image on this page if it is an image
 - Edit metadata for a file

Note that we are more interested in the code and data modelling in the backend of your assignment rather than UI design. With that in mind, we still expect a clean UI.

Functional Specification

- System should use a SQL database to store data about files
- System should have properly designed data models for
 - Files
 - Metadata content
 - Metadata description

Acceptable Limitations

- The system does *not* need to be compatible with all web-browsers, applicant may choose any web-browser to demonstrate the solution
- It is acceptable if the solution can only work with ASCII-filenames
- Search can be very basic, AND / OR not needed and can be case-sensitive.
- Search may use SQL "LIKE" statement only
- User and rights management is not needed
- One text metadata-field per file is enough

Bonus Features (not mandatory)

- When a video file appears on the file system the video file is converted to a video-format that is displayable in the www-interface. When the video page is viewed for this file the converted video file is displayed together with the metadata. Use the following files as input files for videos:
 - <http://bit.ly/cmo-assignment-file1>
 - <http://bit.ly/cmo-assignment-file2>
 - <http://bit.ly/cmo-assignment-file3>
- Ability to have more than just text-fields as metadata assigned to files
- Ability to have multiple metadata fields per file
- Supply a REST-interface to search for file names

Language and Framework

Cantemo works currently mainly in Python and Django or Flask on Linux and we would like you to use this framework for the assignment as well.