Test Project

Module 05 – BACK END

WSA2021\_TP17\_Module05

Elaborated by:

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**INTRODUCTION**

In this module you will have 2.5 hours to develop a small web application that allows people to apply for a job. This system will let people indicate their level of knowledge in a number of skills when applying for a job which will help determine who is the best fit for the job.

A simple layout based on Twitter’s Bootstrap framework has been provided to you to help with this. A database dump file with initial information is also available in the media files to help you with the task. Read these instructions carefully before starting in on this task to ensure all of the requirements are met.

**TEST PROJECT DESCRIPTION**

The “Job Indicator” system allows web users to apply for jobs on the platform and to specify their level of knowledge in the skills required for each job. With the information provided by the candidates, it is possible to find the candidate who best qualifies for the position offered.

The system's information structure is quite simple:

* Employment (jobs): A listing of available positions that users can apply for;
* Competences: The list of competences needed for the job. A job must have one or more skills associated with it. Each competency has a defined weight indicating its importance to the job. The sum of the weights for these competences must equal 100.
* Levels of knowledge: Levels of knowledge that candidates can select for each competency of a desired job. Each level of knowledge applies a scoring factor for the calculation of referral. They are:
  + No knowledge (none) - Factor 0%
  + Beginner (beginner) – 33% Factor
  + Full (full) - Factor 66%
  + Expert (senior) - Factor 100%

The home page should display a list of the available jobs in the system.

By clicking on the desired job, the user should be presented with an application form with the following fields:

* “E-mail” field: Text field, mandatory;
* “Candidate Name” field: Text field, mandatory;
* “Phone Number” field: Text field, optional filling;
* Table with the list of job skills and knowledge levels for selection.
* “Save” button.

When filling in the e-mail field, the system must check the system's database to determine if the e-mail address already exists. If there is a user with the same e-mail address, then values for the “Candidate Name” field and “Phone Number” field must be automatically filled in with the user's existing data from the system. The system must also check if there is already a record of this user having already applied for the specified job. If they have already applied for the specified job, the knowledge levels of the skills should be updated to reflect the existing data. In other words, it should not be possible for a user to submit two applications for one job.

The user will only be able to submit their application if all the required fields have been completed: e-mail, candidate name, knowledge level in all the competences requested for the job. Validation of the submitted information must be performed on the server side to avoid fraud attempts in data registration.

An alert should be displayed to the user if any required field was not completed.

System administrators can access the Job Administration page and candidate list for each job at http://<domain>/XX\_module05/joblist . On this page the jobs registered in the system should be listed in descending order of registration date, i.e. the most recently registered jobs at the top of the list. Next to the job title, the number of applicants for the respective job must be presented.

By clicking on the desired job from the job listing, the list of candidates who have registered for it should be presented. In the list are presented:

* Candidate's name
* Candidate's email
* Candidate's Phone
* Referral Value

By clicking on the candidate's name, the list of competences with the levels of knowledge completed by the candidate at the time of registration is displayed.

The list of candidates for a job should be sorted in descending order by referral value, that is, those with a higher referral value should be at the top of the list.

The calculation of the referral value is the sum of the scores obtained in each job competency. The competency score is obtained by multiplying the competency weight value by the candidate's chosen knowledge level multiplication factor.

On the administration page of the list of jobs it is possible to add new jobs by clicking on the button “New Job” and filling out the form with the name of the job and the skills and weights that represent it. The total weights should add up to 100.

Example for a job:

|  |  |
| --- | --- |
| Job Name: Front End Developer | |
| Competences | Weight |
| HTML | 10 |
| CSS | 10 |
| Javascript | 20 |
| Angular framework | 30 |
| Automated Tests | 20 |
| Work in groups | 5 |
| Work with Agile Methods | 5 |

Example of an application:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Job Name: Front End Develloper** | | | | |
| **E-mail** | [paul@test.com](mailto:paul@test.com) | | | |
| **Candidate Name** | Paul Candidate | | | |
| **Phone Number** | 12345-6789 | | | |
| **Competences / Levels** | **None** | **Begginer** | **Full** | **Senior** |
| HTML |  | X |  |  |
| CSS |  | X |  |  |
| Javascript |  |  | X |  |
| Angular framework |  |  | X |  |
| Automated Tests | X |  |  |  |
| Work in groups |  |  |  | X |
| Work with Agile Methods |  | X |  |  |

Example of the calculation of the referral value for the candidate Paul Candidate:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Competences / Levels** | **Height** | **None** | **Begginer** | **Full** | **Senior** | **Cálculo** | **TOTAL** |
| HTML | 10 |  | 0.33 |  |  | 10\*0.33 | 3.3 |
| CSS | 10 |  | 0.33 |  |  | 10\*0.33 | 3.3 |
| Javascript | 20 |  |  | 0.66 |  | 20\*0.66 | 13.2 |
| Angular framework | 30 |  |  | 0.66 |  | 30\*0.66 | 19.8 |
| Automated Tests | 20 | 0 |  |  |  | 20\*0 | 0 |
| Work in groups | 5 |  |  |  | 1 | 5\*1 | 5 |
| Work with Agile Methods | 5 |  | 0.33 |  |  | 5\*0.33 | 1.65 |
| **Referral value for candidate Paul Candidate** | | | | | | | **46.25** |

You will need to create the tables and relationships in the database to store information about candidates and their job applications. The database backup provided must be imported into your application's database, with the following tables and data:

• jobs: job records

• competences: competence records

• levels: records of skill levels.

The design and front-end teams have already provided a static system pages in HTML and CSS which you can use. You will have to carry out the programming to make them dynamic and functional.

**INSTRUCTIONS TO THE COMPETITOR**

Please follow the instructions below to submit your work.

1. Media files are available in ZIP file. You can modify the files provided and create new media files if you wish.
2. Save your project files in a folder called “XX\_ module05”.
3. Ensure that your system can be started when the address http://<domain>/XX\_module05 is accessed

\* XX is your country code.